Climate Change Disclosure – Are you ready?

Implications for real estate
Executive Summary

At the beginning of 2010, in an historic move, the US Securities and Exchange Commission (SEC) published its ‘Commission Guidance Regarding Disclosure Related to Climate Change’ targeted at publicly-listed companies. Jones Lang LaSalle thought it timely to provide an overview on the background and implications of climate change and disclosure guidelines specifically for real estate investors and services companies. These firms are expected by their shareholders, the regulatory bodies and other key stakeholders to increase transparency on the impact that climate change will have on them – both risks and opportunities - in their annual reporting.

The scientific theory of climate change, attributable to greenhouse gas accumulation in the atmosphere and its potential impacts, has been established over the past few decades and broadly acknowledged by governments, businesses and the financial markets worldwide. While there logically remains some uncertainty as to the future evolution of this phenomenon, the associated physical, regulatory and market demand risks and opportunities are already being assessed as scientific evidence of climate change continues to be studied.

Impacts for the real estate sector range from physical flood risks to business disruption challenges, to increasing regulatory action on building energy efficiency requirements and CO₂ emission limitations, and to market demand risks if buildings do not show the required energy efficiency characteristics. Opportunities range from investing in sustainable real estate to energy management, and to risk management advisory services for properties at risk of flooding, wind damage, extreme temperature swings and other symptoms of climate change.

As a response to the emerging climate change risks, a series of mandatory and voluntary disclosure requirements and frameworks have been put in place at Jones Lang LaSalle and other real estate firms. They cover information on energy consumption of buildings to carbon emissions, including mitigation and adaptation strategies put in place by company management. One of the most broadly-used reporting frameworks, the Global Reporting Initiative (GRI), is currently establishing a construction and real estate sector-specific list of indicators showing the increasing sophistication of such tools. Similar action is happening on national levels. The United States has provided an ‘Insurer Climate Risk Disclosure Survey’ that includes questions on climate change and the investment strategy of their members. Insurance regulatory bodies in other countries are proceeding along similar lines: raising ‘risk awareness’, encouraging reinsurance to diversify concentrated exposures, and disclosing potential liabilities in the event of catastrophic weather-related events. By contrast, real estate investment and services businesses are not as far advanced in disclosing their climate change exposures. However, as this report notes, awareness of key stakeholders inside and outside these companies is rising rapidly.

Key to the reporting requirements of climate change is the materiality for a specific business, i.e. its relevance and importance. In the guidance text issued earlier this year, the SEC recommends that companies “… should consider their own particular facts and circumstances in evaluating the materiality of these opportunities and obligations.” For example, insurers of catastrophic risks have a higher degree of materiality than most real estate service providers.

Over the past decade, measurement and reporting frameworks have been established to separately tackle climate change and its potential impacts. The SEC guidance note reflects the latest trend of the convergence in reporting of climate change and other sustainability-related issues with conventional financial and annual reports. The formation of the International Integrated Reporting Committee (IIRC) will channel this effort carried by a consensus of governments, listing authorities, investors, accounting bodies and standard setters. The IIRC wants to establish a globally-accepted framework bringing together financial, environmental, social and governance information in an integrated format. Tracking self-governing industry bodies and regulatory changes is a prudent first step toward raising the awareness of management to climate change impact and risk assessment.

Assessing implications of the observed trends for real estate organizations, we need to distinguish two groups: real estate owners (developers, investors, REITs, investment managers who co-invest alongside their clients, etc.) and real estate service providers (asset managers, property managers, leasing agents, facilities managers and real estate consulting services providers). Implications for both groups’ corporate real estate, i.e. office space that serves to house their own employees, are the same.
Companies basically need to provide data on the level of energy consumption and CO₂ emissions, overall climate change-related corporate policies and how they manage risks and opportunities. For **investment real estate the situation is different for each group**. Owners have a direct exposure to risks and opportunities, and property service providers face indirect consequences as their business concerns the services provided to property owners.

Disclosure of **risks** related to investment real estate:

- **Property owners’** disclosure requirements concern the description of management processes to tackle physical, regulatory and market risks and the potential exposure to increasing operating costs due to energy efficiency requirements for existing stock held in their portfolios and related taxes on CO₂ emissions.
- **Real estate services providers** need to describe their capabilities that keep them market relevant by advising investors and occupiers on their climate change risks, as well as the ways in which climate change risks can negatively impact their revenue.

Disclosure of opportunities related to investment real estate:

- **Property owners** can demonstrate the level of attractiveness of their investment portfolios by providing insight on the share of high energy performance labeled assets or certified green buildings. Improved energy efficiency lowers operating costs for the common parts areas and increases occupier comfort and lower energy bills for the demised areas. These factors maintain or may even increase the value of their portfolios.
- **Real estate services providers** can show the establishment of new revenue streams building on growing property owners’ and occupiers’ requirements for energy services, building energy retrofit project management opportunities and energy labeling and green building certification offerings.

**Conclusion**

‘Materiality’, i.e. the relevance and importance of climate change-related risks and opportunities for real estate companies’ overall performance, may still be considered too low to merit mention in the mainstream annual report. However, as knowledge about climate change and risk and opportunity management evolves through mandatory factors and voluntary initiatives, so the quality of disclosure by reporting companies will improve. At the same time, we can see that shareholders and other stakeholders in real estate companies will reinforce, over time, their demands for more detailed and sophisticated information. Regulatory authorities and private initiatives play a key role in advancing such requirements. Finally, senior management at companies like Jones Lang LaSalle and its investment management subsidiary, LaSalle Investment Management, are going through their own awareness-building and education process. The disclosure of key risks and opportunities will also have senior management as one of its most important audiences.

Forward-looking and strategically-oriented company leadership needs to build an understanding of climate change and the management tools and processes to handle its impacts. Like many other metrics that have now become essential management tools for sophisticated organizations (financial ratios, human resource statistics, business planning documents), climate change impacts, on and by real estate, may one day become an essential management tool.

Companies that start to put in place climate change-related expertise and policies early will create a differentiating competitive advantage being better armed to provide climate change-related services and transparency to their stakeholders.
Summary Overview on Climate Change and Real Estate

Introduction

With the recent release by the US SEC of its interpretive guidance entitled ‘Commission Guidance Regarding Disclosure Related to Climate Change’¹, effective 8 February 2010 and targeted at listed companies, Jones Lang LaSalle thought it timely to provide a short overview on the background and implications of climate change and related disclosure regimes in some of the major countries where it provides real estate services and investment advice.

This paper will provide a basis to gauge the specific issues that disclosure related to climate change requires from real estate developers, investors, asset managers and real estate services companies.

The analysis is based primarily on requirements such as the US SEC reporting rules that are regulatory in nature but will also cover extra-financial or voluntary disclosure frameworks, such as the Carbon Disclosure Project or the Climate Disclosure Standards Board Reporting Framework.

Recap on current thinking on climate change

A recent and highly-publicized controversy² about a number of details of the scientific analysis on global warming and climate change undertaken by the Intergovernmental Panel on Climate Change (IPCC) has created an atmosphere of doubt and distrust with a large number of people. Subsequent reviews have pointed to several organizational shortcomings³ of the IPCC’s set-up and have recommended organizational changes. In an official reaction to the most recent review report by the InterAcademy Council, UN Secretary-General Ban Ki-moon⁴ stressed that the fundamental science on climate change remained sound. This has also been endorsed by numerous professional review boards across the globe. And more importantly, major investment banks’ research publications on climate change confirm the growing importance of this global issue for investment decisions.

• The climate change theory

The greenhouse effect, making life possible on planet Earth by securing a stable atmosphere and climate, is a naturally occurring phenomenon through which absorption and emission of infrared radiation by gases in the atmosphere warm our planet’s lower atmosphere and surface. A disequilibrium of the concentration of such greenhouse gases can provoke a change in the Earth’s climate with effects on surface temperature, precipitation and severe weather phenomena, such as hurricanes and extreme flooding. Changes in climate may also cause massive dislocations of species or pest outbreaks and lead to conflicts or mass migrations of people resulting from food scarcity and other resource limits such as water shortages.

• The scientific evidence of climate change

Measurements tracking greenhouse gases (analyzed as volumes of carbon dioxide equivalents or CO₂-e) in the atmosphere have revealed a steady increase in their concentration that can be traced back to the start of the Industrial Revolution in the 18th century. The IPCC, put in place in 1988, was tasked with conducting assessments of the scientific basis for understanding the risk of human-induced climate change, its potential impacts, and options for adaptation and mitigation⁵. The results of their work are published at regular intervals. Their latest Assessment Report⁶ published in 2007, states that, based on a number of CO₂ emission scenarios, the concentration of greenhouse gases will continue to increase and affect the global climate.

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² The Climatic Research Unit email controversy concerned leaked email exchanges between scientists at Britain’s East Anglia University, starting in November 2009
⁵ Climate Change Assessments - Review of the Processes and Procedures of the IPCC, IAC, 30 August 2010
• Expected climate change impacts in general

For the coming century, the IPCC expects the projected increase of greenhouse gases to have a number of impacts on our natural systems and microclimatic conditions. For example, dry regions will get drier and wet regions will get wetter, drought affected areas will become larger and extreme weather events, such as strong winds and heavy precipitation, are very likely to become more common, thereby increasing flood risks. Coasts will be exposed to increasing erosion due to climate change and sea-level rises.

• Uncertainty levels

Considering the treatment of uncertainty in its assessments, the IPCC report states that scenarios had been extensively used in their analyses in order to provide “internally consistent images of different futures, not predictions of the future”. Thus carbon dioxide concentration levels, related temperature changes and effects on the climate are provided within ranges. However, all of their future scenarios indicate a rise in global surface temperatures which can provoke climate change.

The US Environmental Protection Agency (EPA), in a recent publication on greenhouse gases and the origins and effects of climate change, states that “under the range of future emission scenarios evaluated by the assessment literature, carbon dioxide is expected to remain the dominant anthropogenic greenhouse gas, and thus driver of climate change, over the course of the 21st century.”

• Financial markets and climate change

Some of today’s leading investment banks’ research organizations, such as Goldman Sachs, JP Morgan et al, have started to assess the impact of future climate change on the operations and value of companies and their traded shares. Their publications show the market relevance in evaluating climate change risks and opportunities as part of the strategic management of businesses. Last, but not least, NYSE Euronext (the world’s largest exchange group) launched in 2008 a broad-based index (non-sector specific) oriented around a single sustainability issue, in this case climate change - the Low Carbon 100 Europe® Index is designed to measure the performance of the 100 largest European companies having the lowest carbon dioxide (CO2) intensity.

Climate change impacts on the property sector

Climate change and its potential consequences would represent a range of risks to the real estate sector – including physical, financial, regulatory and market demand risks. But accompanying these changes in risks are also emerging business opportunities.

• Physical risks and impacts on real estate

There are a number of risks to which physical property (buildings and facilities) could become exposed, for some in the shorter term, for others in the longer term as climate will change with regional variations, e.g. structural damage to buildings and their equipment through flooding and to the external envelope through increased rain intensity and wind or storm-related incidents. Structural damage may also be caused by land subsidence due to changing ground conditions or coastal flooding due to rising sea levels. Severe heatwaves, that are projected to intensify in magnitude and duration, will push building air-conditioning systems to their limits during already hot seasons, stretching the capability of landlords to provide certain temperature guarantees to the limit.

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7 Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act; Final Rule; US EPA, Federal Register, 15 December. 2009
9 Sustainability matters more than ever, in: European Property Handbook, JP Morgan Cazenove, 1 September 2010
10 NYSE Euronext, Index overview
11 Endangerment and Cause or Contribute Findings for Greenhouse Gases…, US EPA, December 2009
• Financial impacts on real estate and related activities

Besides the direct risk category, much larger risks may occur indirectly and have an impact on property owners’ financial situations or property occupiers’ business operations. As a result of physical damage to buildings, asset owners may incur additional costs for higher maintenance needs or repairs to damaged structures and equipment. Occupiers may suffer business disruptions as a direct consequence of flooding or wind damage incidents. Retailers may suffer losses of visitors and disruptions to their supply chains. Financial losses to the various parties involved are an obvious consequence. Operating costs and service charges will increase for owners’ common parts areas and occupiers’ demised areas due to carbon taxes on fossil fuels if buildings are not energy efficient.

• Increasing regulatory risks and their indirect impacts on real estate and related activities

Legislators, regulators and governments on national and local but also international levels are continuing to introduce laws and regulations and international accords to mitigate climate change risks. These policy instruments are either directed at the economy and its stakeholders as a whole, such as CO₂ emission reduction targets, or at specific segments of an economy.

Greenhouse gas emissions analyses have shown that activities concerning building construction and operation, for both residential and commercial properties, are some of the single most significant contributors to greenhouse gas emissions, at comparable levels to the transport and industrial manufacturing sectors. As a consequence, regulatory instruments and market-based solutions are increasingly and specifically targeting built assets.

The continuing introduction of such policy instruments across the global economies will lead to increasing compliance obligations for real estate industry players and stakeholders – representing both financial consequences but also providing potential arbitrage opportunities.

The most widely-known global policy instrument is the Kyoto Protocol which came into force in 2005 and introduced CO₂ emission targets for the most developed economies in the world. In parallel, national or regional CO₂ legislations and policy instruments were introduced such as the EU Emissions Trading System (EU ETS), in place since 2005. The UK Carbon Reduction Commitment (CRC) is targeting carbon emission reductions of large energy-consuming companies in the UK by introducing a cost for carbon that touches all industry sectors and not only those that have a high carbon intensity and that are already covered by the EU ETS.

The European Union had already enacted in 2002 (with amendments in 2010) the Energy Performance of Buildings Directive requiring the establishment of minimum energy performance levels for new and existing buildings. Additional national laws have introduced climate change mitigation requirements. France enacted the Grenelle environmental laws between 2009–2010, introducing strict energy conservation measures for the building sector, urban planning changes, measures increasing renewable energy production and many more.

Examples of French energy and climate change laws covering buildings and their owners:

• Current requirements for existing buildings: (a) The provision of an energy performance certificate showing energy consumption and CO₂ emissions for commercial real estate proposed for lease or sale; (b) the declaration of exposure to natural risks, such as flooding.
• Future requirements for existing buildings: (a) the addition of an environmental appendix to leases covering building energy consumption details and the potential need for energy performance investments, applicable from 1 January 2012 for new leases and from 14 July 2013 for existing leases; (b) an obligation for energy performance retrofits of all commercial real estate by 2020, starting on 1 January 2012.
• Future requirements for new building constructions: (a) The objective of not surpassing 50kWh per square meter per year of energy consumption, for new building permits from 1 July 2011; (b) the objective of zero net energy buildings for new constructions from 2020 onwards.
Depending on the nature of a company’s business and its sensitivity to public opinion, climate change policy could also present reputational risks as the issue rises in importance with staff, customers, investors and media organizations, as well as non-governmental organizations.

- **Market demand risks for real estate**

All the aforementioned risks may translate into changes in market demand for buildings on the basis of their carbon intensity and energy efficiency. The proliferation of initiatives to measure and benchmark both residential and commercial properties, according to their energy and carbon intensity, illustrates the growing importance of such factors to the investment community. To render building energy performance more transparent, two types of energy efficiency labeling systems have emerged: private labels such as Energy Star in the United States and mandatory labels such as Energy Performance Certificates for buildings due to be sold or leased in the European Union. As a consequence, buildings may differ in levels of attractiveness to both investors and occupiers, who will be better able to understand potential energy costs for the space they are using.

- **Opportunities in real estate related to climate change**

While climate change may represent a series of risks for real estate industry players, there are also opportunities emerging for new products and services.

Increased sensitivity toward energy-efficient buildings by both landlords and occupiers has brought about changes in demand for such properties. As a consequence, and if the energy performance is significant enough, landlords may derive better leasing conditions from occupiers which could be reflected in the value of the asset. Early signs of this have already been observed in the United States where Energy Star labeled real estate has shown better rental values than non-Energy Star labeled buildings\(^\text{12}\). One consequence could be the emergence of a two-tier market for green or energy-efficient buildings and for those that are not.

On a whole building level, so-called certified green buildings (LEED, BREEAM, Green Star, HQE etc.) increase the attractiveness of assets beyond the pure energy performance issue, as they include transport and construction-related requirements that play a role in climate change mitigation.

A growing number of enterprises and public administrations have displayed their intent to contribute to environmental protection and the climate change challenge by increasing their demand for energy-efficient and environmentally-friendly buildings.

While the socially responsible investment (SRI) movement has created a flurry of new investment vehicles over the past decade, more recently green real estate funds have been put in place\(^\text{13}\). The focus of this new type of fund can be new green certified buildings or redevelopments of non-energy-efficient buildings through green retrofits.

In developed economies, existing buildings represent by far the largest portion of real estate property. With the reinforced drive for energy-efficient buildings there is increasing demand for energy management services that include the recommissioning of heating, ventilation and air-conditioning plant, the retrofitting of lighting systems or the review of building energy management procedures and processes in order to drastically decrease energy consumption and CO\(_2\) emissions.

\(^{12}\) Sustainability and the Dynamics of Green Building, Piet Eichholtz et al, Maastricht University, The Netherlands, April 2010

\(^{13}\) For example: Credit Suisse Real Estate Fund ‘Green Property’; BNP Paribas Real Estate ‘Next Estate’; IVG ‘Premium Green Fund’
Mandatory and Voluntary Disclosure Requirements and Initiatives on Climate Change

Having acknowledged the importance of the climate change phenomenon and its emerging impacts on economies and its actors, many governments and private institutions have put in place requirements to increase transparency on risks and opportunities through reporting directed at company shareholders and other stakeholders.

The following outline presents the key mandatory and voluntary measures that form the backdrop for stock exchange listed company level reporting.

Mandatory disclosure requirements

Over past decades the number of climate change-related laws and regulations has steadily expanded from global levels right down to local and municipal levels.

The next sections provide a summary overview of the major laws and regulations that have been put in place or that will be instituted over the coming years, with a special focus on some of the major real estate markets.

Climate change and materiality

One of the guiding principles of mandatory disclosure rules, for the stakeholder groups that reporting obligations are intended, is the materiality of the information. In a guidance note on principles of accountability around sustainability issued by the AccountAbility organization of the UK, materiality was based on relevance, i.e. what matters, and importance of the information, i.e. how much it matters. Relevance relates to the drivers of stakeholder decision-making and importance to the actual or expected severity of an issue’s impact.

The US SEC discussed materiality in its guidance note on climate change, saying that “... information is material if there is a substantial likelihood that a reasonable investor would consider it important in deciding how to vote or make an investment decision, or ... if the information would alter the total mix of available information.”

According to a study by Trucost, an environmental research and consulting company, and the Investor Responsibility Research Center Institute (IIRC), the carbon intensity of major real estate investors, such as insurance companies and banks and the real estate sector itself, are among the lowest, based on CO\textsubscript{2} emissions per dollar of sales revenue. But quite correctly, the report calls attention to the fact that “the analysis excludes potentially significant greenhouse gases associated with products in use and investments by financial institutions.” Thus, the true exposure to real estate-related climate risks is certainly much larger than that often indicated by statistics which only focus on the operational carbon emissions.

Focus on the USA:

- US Securities and Exchange Commission’s (SEC) interpretive guidance on disclosure related to business or legal developments regarding climate change for listed companies:

  In February of this year the SEC issued a widely-publicized disclosure guidance concerning climate change. It advised companies to:

  - Assess materiality of existing and pending laws, regulations and international accords regarding climate change
  - Discuss negative and positive impacts of regulatory requirements and market trends on business operations including uncertainties about events and trends
  - Evaluate actual and potential physical impacts of climate change on operations and results

14 Guidance Note on the Principles of Materiality, Completeness and Responsiveness as they Relate to the AA1000 Assurance Standard, AccountAbility, UK, July 2006

16 Carbon Risks and Opportunities in the S&P 500, Trucost/Investor Responsibility Research Center Institute, June 2009 Note, that the analysis includes direct carbon emissions and emissions from electricity providers and business air travel.
US Environmental Protection Agency (EPA) ruling on greenhouse gas (GHG) disclosure

A new rule effective as of 1 January 2010 requires facilities emitting at least 25,000 metric tons of GHGs annually to submit GHG disclosure reports to the EPA. In a recent comment by the American Bar Association, it was suggested that companies falling outside of the scope of the above GHG reporting rule may need to re-examine whether they must include GHG emission data and climate change-related risks in their financial reports, to comply with existing SEC disclosure requirements.

Focus on the UK:

- The Companies Act 2006: The Act introduced, for the first time, the obligation for company directors to include in the ‘Business Review’ section of their reports, a discussion of the impact of the company’s operations on the environment. For quoted companies, where appropriate, the analysis needs to provide key performance indicators (KPIs) including information relating to environmental matters.
- The new UK Coalition Government has stated in its program that it will introduce an operating and financial review to improve corporate accountability and transparency where “… directors’ social and environmental duties have to be covered in company reporting…”
- The Climate Change Act 2008 requires the UK Government to make regulations as part of the Companies Act 2006 dealing with reporting requirements, particularly on GHG emissions, by 6 April 2012. The new UK Government is likely to announce in December 2010 if it will advance the timing. There is strong lobbying to ensure that this reporting of GHG emissions in annual reports and accounts is introduced, and the business community is broadly supportive.

Focus on Germany:

- The German Commercial Code (Handelsgesetzbuch), governing companies in Germany, includes regulations on the preparation of financial statements, similar to the US GAAP. It requires all listed companies to include non-financial performance indicators where they are relevant for the company, for example on environmental aspects – emission volumes, energy consumption, environmental audits.

Focus on France:

- The New Economic Regulations law (Nouvelles Régulations Economiques – NRE), effective 2001/2002, requires listed companies to include environment-related information in their annual reports to shareholders, such as the use of renewable energy, initiatives for energy efficiency, compliance with environmental laws and regulations, and environmental risk management.
- The French financial markets authority (Autorité des Marchés Financiers – AMF) has not specified any particular requirements, concerning information specifically about climate change risks or opportunities, that need to be included in annual reports to shareholders. The general understanding is that the principal risks and uncertainties related to a company’s business operations must be reported upon. As a result of the Grenelle laws, companies (listed and non-listed) numbering more than 500 employees need to establish a greenhouse gas inventory and disclose the results publicly, starting from 31 December 2012.

Focus on Australia:

- The Australian Securities Exchange (ASX) Corporate Governance Council explicitly mentions environmental and sustainability-related risks that need to be addressed in corporate reporting – Principle 7: “Recognise and Manage Risk.”

18 Federal Register 56,260, 30 October 2009
19 Environmental Disclosure Committee Newsletter, Vol.7, N° 2, April 2010
20 Section 417, Companies Act 2006, UK
22 Was Investoren wollen, Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, June 2009
23 Principle 7 in: Corporate Governance Principles and Recommendations, ASX Corporate Governance Council, August 2007
Voluntary disclosure requirements and initiatives

• Worldwide: Global Reporting Initiative

The most well-known reporting framework for corporate social responsibility (CSR) information is the Global Reporting Initiative (GRI) established in 2000 and now in its third generation (G3) release since 2006. A growing list of companies worldwide, over 1400 in 2009, have chosen to provide sustainability-related data within this standardized structure encompassing economic, environmental and social performance indicators. To cater to the specific CSR aspects of various industries, sector-specific report supplements have been released. The most recent addition is the Construction and Real Estate Sector Supplement (CRESS). Jones Lang LaSalle has been tasked to lead the project management for the supplement which is currently being finalized and should be released next year. Several of the supplement’s environmental performance indicators ask for climate change-related information such as building energy, CO$_2$ intensity and green building certification schemes. But more importantly, an entire section deals with financial implications and other risks and opportunities for an organization’s activities due to climate change: Environmental legislation, energy resource scarcity, indirect risks, supply chain risks and the way in which such risks are managed need to be disclosed by management. Required disclosure by real estate investors also needs to cover the potential impact on the valuation process concerning revenue, yield and obsolescence risk factors.

• Worldwide: Carbon Disclosure Project

After 10 years of existence and its eighth year of reporting, the Carbon Disclosure Project (CDP) is now backed by 534 institutional investors representing $64 trillion of assets under management. 82% of the world’s 500 largest listed companies have provided insight into carbon emissions, regulatory, and physical risks and opportunities. In contrast to the GRI, the CDP focuses clearly on the carbon and climate change-related risks and opportunities of a company.

• Worldwide: Sustainability Investment Rating Agencies

There are two main global sustainability indices for the major listed companies worldwide. According to a more or less extensive list of criteria, these indices analyze the performance of listed companies concerning their environmental, social and governance (ESG) performance:

- FTSE (the Financial Times/London Stock Exchange Group) and EIRIS (an ESG-focused not-for-profit investment research company, based in London) publish the FTSE4Good Index Series, started in 2001. One of the five groups of ESG performance criteria concerns ‘Climate Change Mitigation and Adaptation’ that requires information on the volume of GHG emissions, sector specific CO$_2$ intensity metrics, goals and targets etc. For the time being, the FTSE4Good Index only analyses industries with the highest levels of associated emissions, and thus the greatest need to address this issue (e.g. mining, aluminum and steel production, electric power generation, building materials and airlines). FTSE not only publishes an overall sustainability index, of which climate change is only a component, but also a climate change-focused index called the FTSE Carbon Index Series (as detailed later in this section).

- SAM (Sustainable Asset Management, a Zurich-based investment firm and subsidiary of Rabobank/Robeco) publishes the Dow Jones Sustainability Indexes launched in 1999, in collaboration with Dow Jones Indexes (majority-owned by the CME Group, the world’s largest futures exchange, headquartered in Chicago). 2500 of the world’s biggest companies of all industry sectors are analyzed. Across 58 industry sectors, a leader is identified for each of the 19 super-sectors, such as GPT Group for real estate in 2010. There is only one question around the environment, which covers GHG emissions and energy consumption.

24 GRI Reporting Trends, Global Reporting Initiative web site, accessed on 13 October 2010
25 Sustainability Reporting Guidelines, GRI, version 3.0, 2006
26 Carbon Disclosure Project 2010, Global 500 Report, September 2010
• **USA:** The National Association of Insurance Commissioners (NAIC) adopted a new rule earlier this year, covering all US insurers, to provide information about the risks posed by climate change and the actions they intend to take. The ‘Insurer Climate Risk Disclosure Survey’ was adopted on 28 March 2010 starting with, in principal, voluntary filing of the survey covering the year 2009, for insurers with premiums collected of over $500 million. Each year the eight question survey needs to be submitted by 1 May. The submitted information concerning plans, policies and risks will remain confidential.

• **UK:** The Connected Reporting Framework was launched by the Prince of Wales’s ‘Accounting for Sustainability Project’ in December 2007. The reporting model presents key sustainability information alongside more conventional financial information. The framework’s aim is the integration of financial and non-financial information to establish a balanced view on the management quality and business success of a company. Concerning the environment, it contains five key indicators: GHG emissions, energy usage, water, waste and the consumption of finite resources.

• **UK:** The FTSE CDP Carbon Strategy Indexes have been jointly developed with the Carbon Disclosure Project and ENDS Carbon, a provider of carbon performance benchmarking and ratings. The index series is based on future-oriented criteria, rather than past emissions data, and offers a long-term forward-looking investment tool that closely tracks established UK benchmarks while supporting the reduction of climate change risks across investment portfolios\(^\text{27}\). The indices identify high-risk industry sectors, such as aviation, oil and gas, mining, and electric power, where carbon risk has a significant impact on corporate earnings.

• **France:** The national Environment and Energy Management Agency (ADEME) ‘Bilan Carbone’ GHG management framework, which was established in 2002, provides an elaborate methodology on measuring energy consumption and the respective greenhouse gas emissions by an organization. The methodology includes the planning of emission reduction initiatives based on GHG analysis. One of its aims is to enhance external communication and transparency on potential exposure to climate change and carbon reduction-related measures for company stakeholders.

• **Australia:** In September 2008, the Australian Institute of Superannuation Trustees (AIST) and The Climate Institute jointly launched the ‘Climate Change Investment Initiative’ to prepare Australia’s superannuation funds for the risks and opportunities that will arise out of the investment chain as a result of climate change. The first phase of this initiative, the ‘Asset Owners Disclosure Project’, involved a survey of Australian superannuation funds with more than A$1 billion under management, who were invited to participate and disclose their capabilities in terms of managing the risks and realizing the opportunities associated with climate change\(^\text{28}\).

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\(^\text{27}\) FTSE press release, 23 June 2010

\(^\text{28}\) Climate Change Investment Initiative, Asset Owners Disclosure Project, Funds Survey Results, The Climate Institute, March 2010
Outlook on the Evolution of Disclosure Rules

Mandatory and voluntary requirements for disclosure of climate change-related information have steadily increased over past decades. The challenge for investors is that climate change-related disclosures are not usually found in one place. They can be scattered across an annual report and separate sustainability reports. As a consequence, there is an emerging trend toward an ‘integrated reporting’ approach that may provide a solution. This approach intends to provide a unified platform for reporting financial and non-financial information to investors within one single framework.

The most significant developments of the past two years are the convergence of the accounting profession, the sustainability and carbon reporting experts, standard setters and shareholders into such a common platform.

Two related trends can be identified. One evolution follows in a very-focused way the climate change and carbon-related issues. The second trend includes other environmental issues beyond climate change and additional social and governance-related factors that will play a role in businesses risks and opportunities:

• Carbon scope: The Climate Change Reporting Framework

The Climate Disclosure Standards Board (CDSB) is a consortium of environmental and business organizations, represented by the Carbon Disclosure Project, CERES, The Climate Group, The Climate Registry and several global business associations. It advocates a generally-accepted international framework for companies to disclose information about climate change-related risks and opportunities, carbon footprints, reduction strategies and their implications for shareholders. Disclosed information should deal with regulatory and physical climate change risks and GHG emissions.

The Climate Change Reporting Framework not only defines what to report but also how, i.e. it wants to align with existing financial and annual reporting to supplement financial statements in order to meet the needs of investors. As part of the set-up, and in order to insure this alignment, a technical working group, consisting of the ‘Big Four’ audit firms and other representatives of the global accounting profession are pooling their knowledge for this project. The final version of the Climate Change Reporting Framework (edition 1.0) was published in September 2010 and is targeted at companies, the accounting profession at large and regulatory agencies, with a focus on the main user group, the investors.

The framework recommends two categories of disclosure information: Strategic analysis (short term and long term risks, opportunities and the governance) of climate change issues and detailed greenhouse gas emissions. Recognized GHG emissions reporting schemes include the international GHG protocol reporting standard, the ISO 14064-1 specification and various national and industry-specific guidelines.

In the second group we find the wider ESG reporting scope:

• Financial and ESG scope: The Integrated Reporting Model

In December 2009, at the opening of the Copenhagen Climate Summit, various leading world accounting bodies, including the AICPA (American Institute of Certified Public Accountants, representing 360,000 members) and other professional accounting trade associations, asked for a single standard on climate change reporting. They signed the Prince of Wales’s ‘Accounting for Sustainability Project’ principles that promote the Connected Reporting Framework.

In August 2010, the Global Reporting Initiative and the Prince of Wales’s ‘Accounting for Sustainability Project’ announced the formation of the International Integrated Reporting Committee (IIRC). It aims to form a consensus among governments, listing authorities, businesses, investors, accounting bodies and standard setters. It wants to establish a globally-accepted framework for accounting for sustainability, bringing together financial, environmental, social and governance information in an integrated format.

30 Climate Change Reporting Framework – Edition 1.0, CDSB, September 2010
31 Press release, 9 December 2009
Implications for Real Estate Investors and Services Companies

If the various challenges on climate change, regulations and other risks and opportunities are added up, then the issues could quickly become very complex. In the outline that begins below, we are proposing our recommendations for two distinct groups of real estate-related companies in which shareholders have vested interests for climate change disclosure.

We distinguish implications for (a) developers, investors, real estate investment companies and investment managers who co-invest alongside their clients, based on their building ownership from (b) real estate asset managers, property managers, leasing agents, facility managers and other real estate services companies who cater to real estate owners.

Implications for companies’ corporate real estate (CRE), i.e. office space that serves to house their own employees and that can be very significant, are the same for both groups. Indicated (in brackets), in the following tables, is where such issues arise specifically for corporate offices and their daily operations, and have an impact on any type of company.

The risks and opportunities shown, have been selected with a focus on their appropriateness to be disclosed in listed companies’ annual reports, such as the US SEC 10-K filing.

When considering the various risks and opportunities, the SEC guidance document mentions very appropriately, that companies “…should consider their own particular facts and circumstances in evaluating the materiality of these opportunities and obligations.”

Disclosure implications concerning risks

Information, where relevant, can be provided to improve transparency for shareholders and other stakeholders. Depending on relevance, the following outline provides suggested disclosure guidance that may, however, not apply to every company. While it is important for organizations to provide information on their climate change risk areas, it is equally important to mention what type of measures or remedial actions are being taken to mitigate risks and to adapt to change.

Implications for owners of real estate: developers, investors, REITs:

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Provide external reporting information on:</th>
<th>Data and systems that the company needs to have available internally</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical risks</td>
<td>• Management process identifying property locations exposed to inland flooding, coastal flooding, drought</td>
<td>• Information services that provide data on level of exposure to local flood risks</td>
</tr>
<tr>
<td></td>
<td>and subsidence (same for CRE concerning business disruption potential)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Climate change adaptation measures being implemented across the portfolio</td>
<td></td>
</tr>
<tr>
<td>Regulatory risks</td>
<td>• Level of energy efficiency of asset portfolio (for example, proportion of assets above a certain energy</td>
<td>• Operational energy audit results (kWh/m²/yr) of assets</td>
</tr>
<tr>
<td></td>
<td>performance level)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Exposure to national and local building energy efficiency regulations (same for CRE)</td>
<td>• Monitoring systems of planned energy efficiency legislation for new construction/existing buildings</td>
</tr>
<tr>
<td></td>
<td>• How the company proceeds to estimate what portion of their portfolios may need energy efficiency retrofits</td>
<td>• Potential energy efficiency retrofit costs according to legislation</td>
</tr>
<tr>
<td></td>
<td>if required by law and what the cost implications could be</td>
<td>• Monitoring system of carbon reduction/limitation schemes</td>
</tr>
<tr>
<td>Financial risks</td>
<td>• Energy consumption and related CO₂ emissions of real estate portfolio (carbon footprint), including to</td>
<td>• Asset-specific electricity and fossil fuel consumptions (kWh/m²/yr)</td>
</tr>
<tr>
<td></td>
<td>what extent common parts areas and demised areas are included</td>
<td>• Geography-specific primary energy mix according to CO₂ intensity</td>
</tr>
<tr>
<td></td>
<td>• Levels of carbon tax or related measures by regulatory authorities (same for CRE)</td>
<td>(CO₂ per kWh)</td>
</tr>
<tr>
<td></td>
<td>• Emergence of a two-tier market for energy efficient/green buildings and conventional buildings, by</td>
<td>• Cost of energy consumption and carbon tax as proportion of operating expenditure (per asset)</td>
</tr>
<tr>
<td></td>
<td>relevant geographic market sector</td>
<td>• CO₂ emissions (base building vs. occupiers) and official emission</td>
</tr>
<tr>
<td></td>
<td>• Costs to retrofit or upgrade systems</td>
<td>factors per geography</td>
</tr>
<tr>
<td>Market demand risks</td>
<td>• Proportion of high energy performance labeled assets in total portfolio (same for CRE)</td>
<td>• Energy Star labels of buildings (including level)</td>
</tr>
<tr>
<td></td>
<td>• Proportion of green building certified assets, including their levels, in total portfolio</td>
<td>• LEED or BREEAM certified buildings (including level)</td>
</tr>
<tr>
<td></td>
<td>• Market penetration of green building certifications for new and existing buildings, by geography</td>
<td>• Share of green building certified completions per market sector</td>
</tr>
</tbody>
</table>
Disclosure requirements for non-property owners, such as real estate services companies, differ from owners of properties in terms of type of information. For property services companies it is important to be able to provide analyses, advice and data to the owners of real estate assets in order to help them with their disclosure requirements and to remain relevant for the market. Climate change therefore represents more indirect risks for services companies.

There remain, to a certain extent, the climate change risks outlined previously, but only in relation to the location and operation of occupied or owned office space, i.e. physical and regulatory risks. As real estate ownership is, by definition, not the core business of real estate services companies, climate change represents a different risk for them. The potential impact is the largest for market demand risks, should service providers not possess adequate capabilities to advise and help property owners on their various climate change-related risk management.
Implications for real estate services companies: asset managers, property managers, facility managers, leasing agents and real estate consulting services providers:

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Provide external reporting information on:</th>
<th>Data and systems that the company needs to have available internally</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical risks</strong></td>
<td>• Business disruption potential due to extreme weather events (for CRE only)</td>
<td>• Location and exposure of office premises to inland or coastal flooding</td>
</tr>
<tr>
<td><strong>Regulatory risks</strong></td>
<td>• Energy consumption and CO₂ emissions limits and how regulations may impact them (for CRE only)</td>
<td>• Total volume of kWh of all energies consumed and related CO₂ emissions</td>
</tr>
<tr>
<td><strong>Financial risks</strong></td>
<td>• Cost implications of existing CO₂ emission limitations and associated taxes/levies (for CRE only)</td>
<td>• Use of carbon measurement schemes (e.g. GHG Protocol)</td>
</tr>
<tr>
<td></td>
<td>• Measurement, tracking tools and processes concerning energy and CO₂ (for CRE only)</td>
<td>• CO₂ tax calculation and costs</td>
</tr>
<tr>
<td></td>
<td>• Evolution of CO₂ taxes and planned laws (for CRE only)</td>
<td>• Planned laws and revisions by country</td>
</tr>
<tr>
<td></td>
<td>• Impact of climate change on revenue</td>
<td></td>
</tr>
<tr>
<td><strong>Market demand risks</strong></td>
<td>• Capability to understand market demand evolution for green certified or energy-efficient buildings</td>
<td>• Research units or description of business units within companies providing such services</td>
</tr>
<tr>
<td></td>
<td>• Capability to analyze potential flood risks</td>
<td>• Description of flood exposure of properties</td>
</tr>
<tr>
<td></td>
<td>• Available processes and tools for regulatory building energy efficiency and CO₂ emissions measurement</td>
<td>• Energy auditing capability description</td>
</tr>
<tr>
<td></td>
<td>• Competence to track evolutions of climate change-related regulations</td>
<td>• Points of view on planned laws and regulations, including incidents according to announced or expected timing</td>
</tr>
<tr>
<td></td>
<td>• Advice on consequences and available remedial actions specifically for owners of retail properties</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Capability to evaluate potential impact of climate change risks on clients’ property value</td>
<td></td>
</tr>
</tbody>
</table>

*Note: For companies present and trading in many different countries, keeping track of legislative and regulatory changes constitutes a big challenge due to their constant evolution, even more so concerning potential future legislation and its impact assessment. This issue asks for efficient coordination and information exchange between country management and corporate level leadership to allow for effective annual report disclosure.*
Disclosure implications concerning opportunities

Reporting companies may describe in what way they are building on the opportunities for providing new products or services to the market. They may also want to show how they have achieved improved business processes as a result of better managing energy consumption and the creation of, for example, green supply chain practices.

Implications for owners of real estate: developers, investors, REITs:

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Description of development and investment opportunity and implication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New products/services</strong></td>
<td>• Green certified buildings may be more attractive to occupiers, and thus owners, and may provide protection against value loss or increase of their portfolios through the emergence of a two-tier real estate market</td>
</tr>
<tr>
<td></td>
<td>• Energy performance-labeled buildings provide lower operating costs and higher occupier comfort and wellbeing, thus increasing their value to their owners</td>
</tr>
<tr>
<td></td>
<td>• Additional revenues may arise from the sale of carbon credits based on energy efficiency improvements in buildings if new legislation comes into force</td>
</tr>
<tr>
<td></td>
<td>• New revenues may arise from leasing roof space for solar panel investment projects</td>
</tr>
<tr>
<td></td>
<td>• Opportunity for landlords to provide a heating/cooling service to their tenants, thereby retaining the incentive to maximize efficiency</td>
</tr>
<tr>
<td><strong>Improved business processes</strong></td>
<td>• Improved energy consumption management leading to decreased operating costs and improved occupier comfort</td>
</tr>
<tr>
<td></td>
<td>• Improved development project positioning for planning authorities based on inclusion of energy-efficient buildings and sites enhanced through public transport access</td>
</tr>
<tr>
<td></td>
<td>• Requirements on the client side (occupiers of energy and carbon efficient office space) influence the way companies define their needs toward their own suppliers, leading to a more sustainable supply chain of products and services</td>
</tr>
</tbody>
</table>
Implications for real estate services companies: asset managers (AM), property managers (PM), facility managers (FM), leasing agents (LA) and real estate consulting services providers (CS)

<table>
<thead>
<tr>
<th>Opportunities</th>
<th>Description of service opportunity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>New services</strong></td>
<td>• AM – Green real estate fund management&lt;br&gt;• FM – Energy efficiency services through outsourced HVAC services&lt;br&gt;• FM – Energy consumption tracking and analysis services&lt;br&gt;• FM – Energy procurement management services&lt;br&gt;• LA – Green lease advisory services&lt;br&gt;• LA – Sustainable real estate portfolio strategy services for occupiers&lt;br&gt;• CS – Green retrofit project management services&lt;br&gt;• CS – Energy performance benchmarking services&lt;br&gt;• CS – Energy performance improvement consulting services&lt;br&gt;• CS – Energy performance labeling services&lt;br&gt;• CS – On-site renewable energy generation project management&lt;br&gt;• CS – Green building certification/energy performance labeling services&lt;br&gt;• CS – Advice on contingency plans in case of extreme weather-related business disruption scenarios</td>
</tr>
<tr>
<td><strong>Improved business processes</strong></td>
<td>• AM – Improved risk management capabilities due to inclusion of environmental risk factors&lt;br&gt;• PM – Lower operating costs due to better energy consumption tracking and management&lt;br&gt;• FM – Improved client satisfaction based on better HVAC management&lt;br&gt;• FM – Improved energy consumption of service vehicle fleet based on better energy efficiency awareness and measures&lt;br&gt;• CS – Improved office space utilization for occupier clients&lt;br&gt;• CS – Improved workplace strategy consulting based on energy consumption efficiency and transport optimization</td>
</tr>
</tbody>
</table>

As knowledge about climate change and risk and opportunity management evolves through mandatory factors and voluntary initiatives, so the level of disclosure by reporting companies will improve. At the same time, it can be expected that shareholders and other stakeholders in real estate companies will reinforce, over time, their demands for more detailed and sophisticated information.

Companies that start to put in place climate change-related expertise and policies early will create a competitive and reputational advantage, as they will be better armed to provide climate change transparency to their stakeholders.
Appendix – Sources and Further Reading

Existing Research and selected publications on Climate Change Disclosure

*Note: To access the publications, push CTRL+Click on the title of the below document*

**2000–2006**
Regular surveys of Climate Change Disclosure in SEC Filings of Automobile, Insurance, Oil & Gas, Petrochemical and Utilities Companies, by Friends of the Earth, USA (Survey started in 2000 and continued until 2006. CERES took on this subject again from 2009.)

**2007**
Climatic Consequences – Investment Implications of a Changing Climate, Citigroup, USA, January 2007

**2008**
Ranking Port Cities with High Exposure and Vulnerability to Climate Extremes, by OECD/University of Southampton, UK (containing concrete monetary figures on potential losses in infrastructure and real estate), November 2008

**2009**
- Climate Risk Disclosure in SEC Filings, An Analysis of 10-K Reporting by Oil & Gas, Insurance, Coal, Transportation and Electric Power Companies, by CERES, USA, June 2009
- Carbon Risks and Opportunities in the S&P 500, Trucost, June 2009
- Connected Reporting in Practice – A consolidated case study, The Prince’s Accounting for Sustainability Project, 2009
- Climate Change Disclosure: Creeping Up the Learning Curve, by McGuireWoods, USA, October 2009

**2010**
- Investors Analyze Climate Risks and Opportunities – A Survey of Asset Managers’ Practices, Investor Network on Climate Risk, January 2010
- Climate Change Reporting Framework, Climate Disclosure Standards Board, September 2010
December 2010

**Advance** publications are topic-driven white papers from Jones Lang LaSalle that focus on key real estate and business issues.

[www.joneslanglasalle.com](http://www.joneslanglasalle.com)