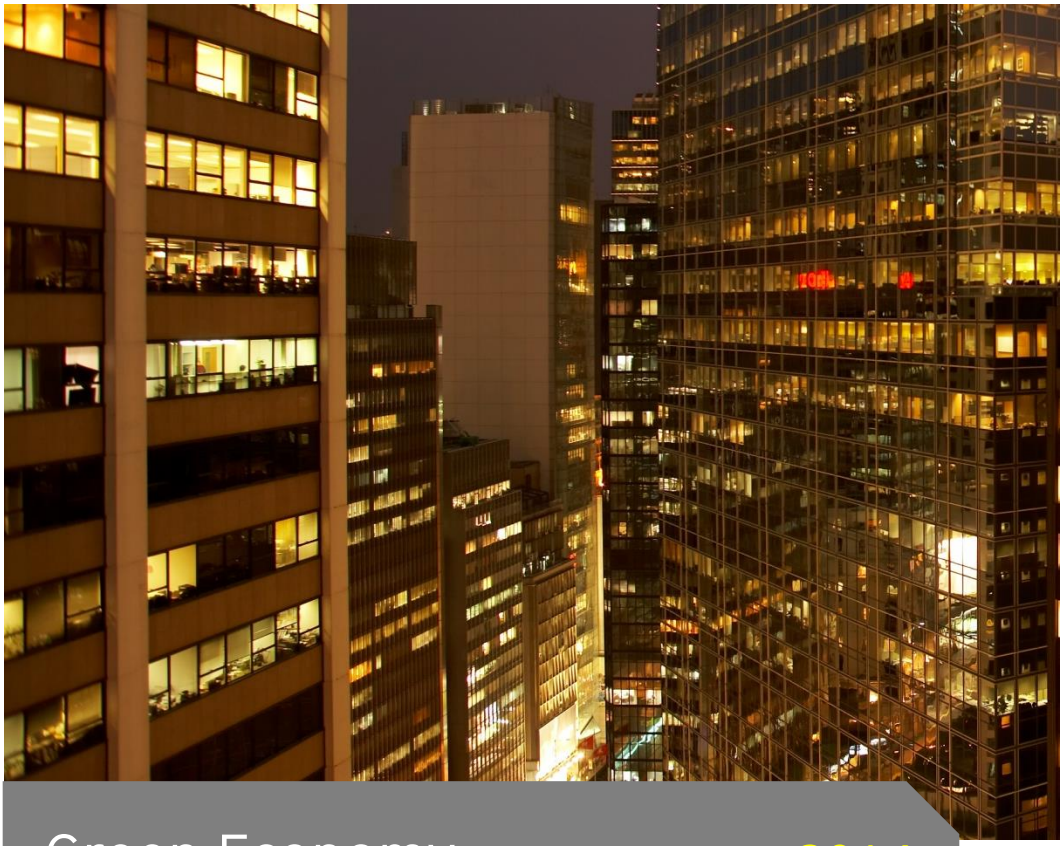

Green Economy Guideline Manual

2014

EY
Building a better working world

Financial Services & Real Estate

ISKANDAR REGIONAL DEVELOPMENT AUTHORITY

ISKANDAR MALAYSIA

Invest, Work, Live & Play

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Foreword

Malaysia's commitment to sustainable development is articulated through its national development plans including the "Tenth Malaysia Plan, The New Economic Model" which underlines the long term development framework for Malaysia. At the Earth Summit in 1992, Malaysia pledged to keep at least 50% of its land area as forest cover, and has maintained its commitment with forest cover in 2012 being at 56.4% of total land area.

Leaders of governments at the United Nations Conference on Sustainable Development (Rio+20, Rio di Janeiro, 2012) resolved to act on addressing challenges in achieving sustainable development through the development of 'Green Economy' in their countries. The Government of Malaysia at Rio+20 re affirmed its commitment to sustainable development, and its voluntary reduction commitment (announced at the15th meeting of Conference of Parties, Copenhagen, 2009) of greenhouse gas emissions intensity of GDP by upto 40% by 2020, compared to 2005 levels. Our Prime Minister has also launched our Low Carbon Society Blueprint (at the 18th meeting of Conference of Parties, Doha, 2012) as our commitment to building a green economy at Iskandar Malaysia.

Climate change is no longer a myth but a reality that affects all of us. The Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) has stated that an increase of 0.85°C in the global average surface temperature could wreak havoc upon our environment. Earlier in 2014, Malaysia experienced one of its worst dry spells, triggering the Malaysian cabinet to consider calling a state of emergency in 15 areas in Malaysia that had not experienced rainfall in more than 20 days.

We have developed this Green Economy guidelines (GEG) manual which provides a checklist for businesses to address areas of procurement, operations and supply chain management in order to minimize impact on the environment. The development of these guidelines included consultations with ministries and government

agencies, business associations, local bodies, international agencies and IRDAs own business teams.

The goal of the GEG manual is to help businesses and industries to study, evaluate, adopt and inculcate environmentally sustainable economic behavior leading to building a prosperous, resilient, robust and globally competitive green economy in Iskandar. This is in line with IRDA's vision of becoming a "Strong and Sustainable Metropolis of International Standing". The LCS Blueprint has 3 main themes – Green Economy, Green Community and Green Environment. This manual is an output of the first theme and focuses on the **financial services & real estate industry**.

We hope businesses in Iskandar in the financial services & real estate industry will find these guidelines relevant and useful in evaluating and adopting more innovative and sustainable practices, contributing to Green Economy in Iskandar.

In closing, I would like to thank and congratulate all parties involved in the production of this manual. I would also like to make a special mention of the advice and support given by the Working Group to the IRDA team and consultant Ernst & Young's Climate Change and Sustainability Services team in putting together this manual.

Y. Bhg. Datuk Ismail Ibrahim
Chief Executive IRDA

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Glossary

B2B	Business-to-business
BEMS	Building Energy Management Systems
CAGR	Compound annual growth rate
CDL	City Developments Limited
CFL	Compact fluorescent lighting
ESG	Environmental, social and governance
ESRM	Environmental and Social Risk Management
GBI	Green Building Index
GGP	Government Green Procurement
GHG	Greenhouse gases
HRV	Heat Recovery Ventilation
HVAC	Heating, ventilation and air-conditioning
ICT	Information and communications technology
IM	Iskandar Malaysia
IRDA	Iskandar Regional Development Authority
ISO	International Standard Organization
KeTTHA	Malaysia's Ministry of Energy, Green Technology and Water
LED	Light-emitting diode
LEED	Leadership in Energy and Environmental Design
LEP	Light-emitting plasma
MDCA	Malaysia Data Centre Alliance
MPOS	Mobile point-of-sale
UN	United Nations
UNPRI	United Nations Principles for Responsible Investment
WRAP	Waste and Resources Action Programme

Financial Services & Real Estate Industry

1. Industry Overview

The financial services & real estate industry comprises various business lines and includes segments such as retail banking, building management, property investment, corporate and investment banking, wealth management and insurance. The financial services industry wields significant power in influencing markets and transforming behaviour through its lending of capital. This affects the direction of how the economy develops and matures. Well-functioning financial systems provide good and easily accessible information that lowers transaction costs, which in turn improves resource allocation and boosts economic growth (World Bank, 2014). The financial crisis in 2008 clearly demonstrated the significance of the industry (Figure 1).

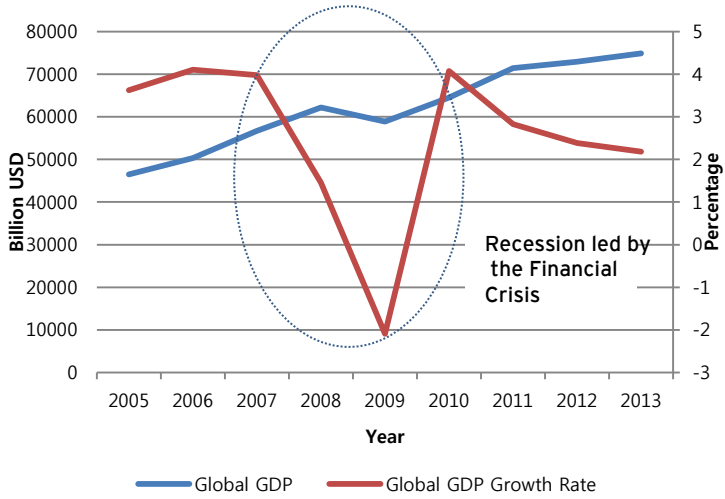


Figure 1: Effect of financial crisis on GDP and GDP growth rate

Despite the volatility of global financial market and inadvertently the real estate market, the industry plays a big role in a country's economy. Malaysia has been nominated to be the top choice destination for outsourcing, after India and China, several times since 2006. This is attributed to the safe business environment, strong government support and quality of human capital. The financial services industry is expected to grow with a Compound Annual Growth Rate of 15% until 2015. Subsequently, with the demand for financial services set to increase, the real estate industry, too, will follow suit

with the demand for more construction of financial services centers and its related products and services (Iskandar Regional Development Authority, 2011).

Businesses, too, have demonstrated its confidence in the real estate and financial services industry in Malaysia. The industry made up 31% of foreign and domestic investments in 2011 (PwC, 2012). In Iskandar Malaysia (IM), the real estate sector has the second largest committed investment with RM33.9 billion and the financial sector has RM1.32 billion (Figure 2).

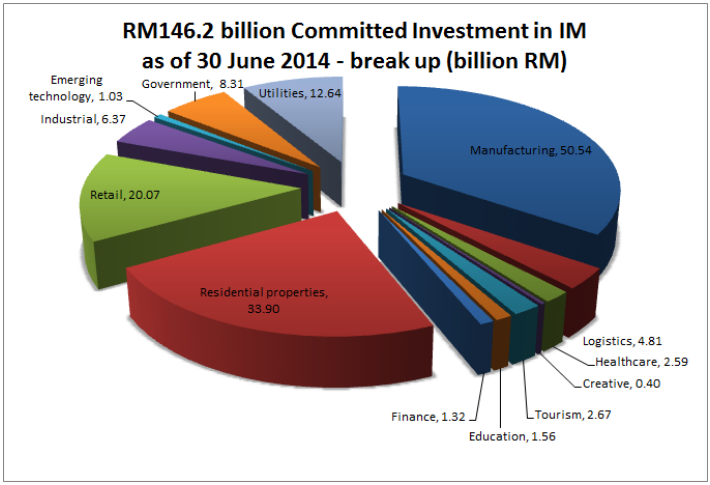


Figure 2: Cumulative committed investment in IM (Low & Kasmuri, 2014)

However, due to volatility of the industry, companies have to be prepared for the tough times by considering sustainability of their practice. Companies that invest in sustainability do better financially and survived the downturn with more resilience. Resource efficiency is a leading indicator of economic performance and will be an increasing important in this sector (Harvard Business Review, 2012).

	ANNUAL RETURNS							
	2005	2006	2007	2008	2009	2010	2011	2012
MoRE World	14.15%	18.76%	17.98%	-39.02%	31.58%	17.99%	-3.83%	9.03%
MSCI World	7.42	17.95	7.09	-42.08	26.98	9.55	-7.62	8.17
Outperformance	6.73	0.80	10.88	3.06	4.60	8.44	3.78	0.86

MORE WORLD IS A PORTFOLIO OF LARGE CAP GLOBAL LISTED COMPANIES, SYSTEMATICALLY DERIVED FROM RESOURCE DATA. IT REPRESENTS THE TOP 10% OF RESOURCE EFFICIENT COMPANIES FROM EACH ICB SECTOR, EX-FINANCIALS. RETURNS USE LIVE DATA FROM AUGUST 2011 AND A BACK TEST OF THE MODEL FROM JAN. 2005.

Figure 3: Effect of financial crisis on GDP and GDP growth rate

The government is aware of the importance of sustainability to this industry. As such, in Budget 2014, the government has introduced the Environmental, Social and Governance (ESG) index to promote Social Responsibility Investment. It has allocated RM1 billion to invest in companies with high ESG scores through ValueCap, an asset-management company funded by government agencies (EY, 2013).

1.1. Environmental Concerns

Environmental impacts associated with this industry fall into its built environment, however, the biggest impacts that this industry can make stems from their products and services, which are an area of significant interest to many stakeholders (Ceres, 2014). This has been exacerbated by the financial crisis, where managing socially responsible portfolio has become an area of concern ever since the crisis (IFC, 2007). These indirect impacts such as fiscal incentives are often greater than the direct impacts of the industry, such as energy consumption from their buildings and waste generation (GRI, 2005).

Direct impacts should not be under-estimated as financial institutions should lead by example in order to galvanize behavioral changes in other sectors.

Buildings are responsible for more than 40% of global energy use and one third of global greenhouse gas emissions both in developed and developing countries (UNEP, 2009). There is a role for the financial industry considering the widespread distribution of retail branches and building space it occupies. Reducing building energy use is essential, considering its contribution to global energy use and

emissions.

As a response, financial industry has made significant progress in reducing footprints of their operation, by promoting environmental sustainability in their facilities and throughout their operation. Companies are extending their loans and investments for projects and industries that offer environmental solutions. Real estate sector focuses on improving sustainable best practices and monitoring environmental indicators of real estate portfolios. Overall, the sector is beginning to recognize the value of engaging with stakeholders and investors on sustainability and disclosing sustainability performance (Ceres, 2014).

The financial services industry is expected to be valued at USD143,000 billion in terms of total assets in 2014 and is assumed to reach USD163,058 billion in 2017, which is a CAGR of 8% over the next five years (Reuters, 2012). The global real estate industry had total revenues of USD3,434.9 billion in 2013, representing a compound annual growth rate (CAGR) of 6.9% between 2009 and 2013, with an anticipated CAGR of 6.7% for the five-year period 2013 - 2018, which is expected to drive the industry to a value of USD4,759.4 billion by the

end of 2018. Globally, banking industry assets in the emerging markets of the Asia-Pacific grew the most in 2012, by 11% compared to 2011 (The Banker, 2014).

Given the current industry trends, additional action will need to be taken to mitigate issues related to energy use, waste and indirect impacts over the medium to long term. In order to identify greening opportunities in the sector, this guideline concentrates on identifying and prioritizing greening options that are pursued by the leading real estate and financial institutions.

Company Name	Key Green Initiatives
City Developments Limited	• Introduce various energy conservation and efficiency improvements projects in its investment properties • Adopting innovation such as Silt Water Treatment cum Water Recycling System from the construction stage to reduce volume of potable water consumed.
Capitaland	• Committed to achieve minimum green rating standard for all new development projects in Singapore and overseas; one level higher that certification for iconic projects (Grade A offices and projects involving star architect) • Conducting life cycle management in building development
Industrial & Commercial Bank of China	• Provide financing for farmers to adopt more efficient, greener technologies • Advocating green finance by being the first

Ltd.	Chinese bank to adopt Equator Principles
AXA SA	• Adopted UN Principles of Responsible Investment and Equator Principles • Implementing Environmental Management Systems across all administrative sites to manage its environmental footprint • Fund, promote risk research and educate climate-related risks. Insures green technologies to incentivize development and improve system resilience
Westpac	• Adopted the Equator Principles, UN PRI, UN GC and the GRI G4 Guidelines for its sustainability report • Sustainable products and services such as credit card reward points for purchase of eco-friendly products • Participates in emerging carbon trading markets
Citigroup	• Led establishment of Equator Principles and created an Environmental and Social Risk Management Policy to evaluate financial transactions • Follows the Greenhouse Gas Protocol and monitors carbon footprint, and work with clients to finance low carbon initiatives
Bank of Tokyo-Mitsubishi UFJ	• Established an environmental foundation • Adopted the UN PRI investment principles and Equator Principles • Leading bank for renewable energy project financing • Uses environmental accounting methods such as ISO 14040 (Life cycle assessment)

Table 1: Leading financial institutions and their key green initiatives (Factiva, 2014)

2. Identifying Green Growth Opportunities

Institutions influence capital across global markets, which can play an even greater role in contributing to the Green Economy. The World Economic Forum's *Infrastructure Initiative* estimates a market size of USD18.1 trillion cumulative investments in infrastructure within developing economies by 2030. This is a huge market to scale up green infrastructure financing (World Economic Forum, 2012).

Unlike manufacturing industries that have distribution, process and manufacture stages, the main source of emissions from the financial services and real estate industry comes from buildings. Promoting environmental sustainability within this industry can be achieved by mitigating energy consumption, Greenhouse gases (GHG) emissions from their buildings and operation. Within commercial buildings, major GHG intensive areas are lighting, heating, ventilation and air-conditioning (HVAC) and lighting (Figure 4).

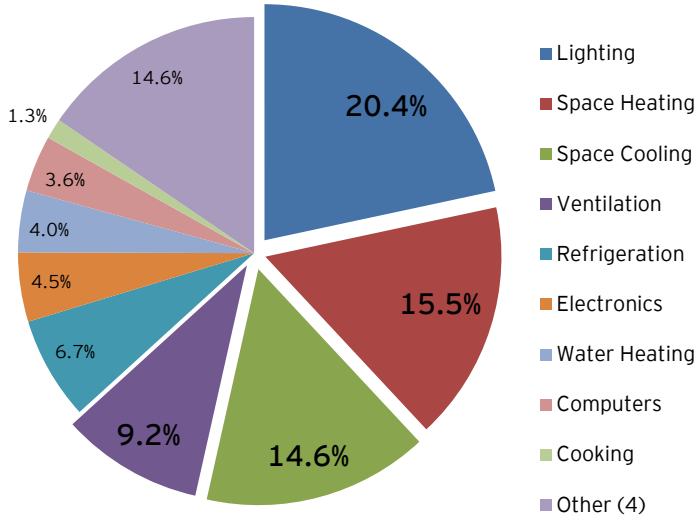
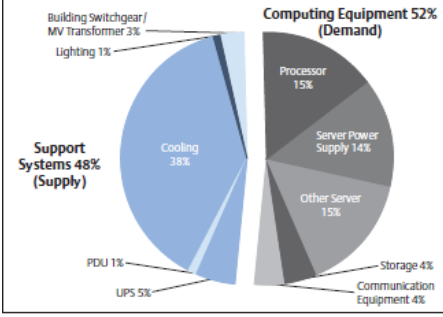


Figure 4: Commercial Buildings Energy End-Use Carbon Dioxide Emissions Splits (US DOE, 2010)

Data centres are said to use 20% of financial industry's total energy use (Citibank, 2014; HSBC, 2012) consuming more energy than office buildings because of their constant running operation (US DOE, 2014). Figure 5 demonstrates a breakdown of energy use within a data centre and illustrates that key energy consuming categories are cooling and computing.



Category	Power Draw*
Computing	588 kW
Lighting	10 kW
UPS and distribution losses	72 kW
Cooling power draw for computing and UPS losses	429 kW
Building switchgear/MV transformer/other losses	28 kW
TOTAL	1,127 kW

Analysis of a typical 5,000-square feet data centre shows that demand-side computing equipment accounts for 52% of energy usage and supply-side systems account for 48%.

Figure 5: Analysis of 5,000-square feet data centre energy consumption (Emerson, 2008)

The growth of data centres in the Asia-Pacific region has demonstrated promising growth in this market with revenue projected to rise by 16.3% annually to reach USD3.4 billion (RM11.36 billion) in 2014 (The Malaysian Reserve, 2014). Iskandar is primed to benefit from this growth if local players acquire international certification such as the Green Building Index (GBI) and Leadership in Energy and Environmental Design (LEED) certifications, according to Malaysia Data Centre Alliance (MDCA).

In addition to energy efficiency, another big green opportunity is in managing paper usage from a business-to-business (B2B) perspective. As the scale of B2B

transactions is larger than business-to-customer, the potential for savings from paper usage is also proportionately higher. Already, there is evidence to support that much more has been done in the paperless pursuit in the B2B arena with a higher success rate.

It is crucial to highlight the role that financial industries can play in establishing a green economy. As mentioned in the previous section, considering its role in the capital market, the financial industry contributes to a green economy by expanding their commitment to the environment through developing green investment portfolios such as funds and credit cards. Bearing in mind that the financial services industry incorporates different services from retail to insurance, this guideline outlines the various material performance improvement initiatives that players can adopt.

Also, risk assessment and management has risen as a top priority issue for stakeholders, followed by risk management failures from the financial crisis that has affected and incurred global economy-wide implications. With growing interests to manage for large-scale risks, companies are revising risk management frameworks and issues (Ceres, 2014).

This guideline will cover both of the areas, from reducing impact from their direct operation to indirect operations. The following actions are recommended for the financial industry (Table 2):

Issues	Actions
Direct Impacts	1. HVAC Efficiency
	2. Lighting Efficiency
	3. Measurements of Environmental Indicators
	4. Improve Energy Efficiency- Cooling & Equipment
	5. Waste Management
	6. Water
Indirect Impacts	7. Developing green financial products and services (for respective divisions)
	8. Adopt UN Principles of Responsible Investment (UNPRI) and Equator Principles
	9. Environmental, social and governance risk assessment

Table 2: Summary of actions

3. Recommended Actions for Strategic Direction and KPIs

For prioritized actions outlined in the previous section, the current section will provide detailed activities for industries to mitigate the environmental impacts.

3.1. Facility Efficiency

Improving facility efficiency can be achieved by implementing a range of technologies, from improved HVAC, lighting efficiency, monitoring (enabled by Building Energy Management Systems and Smart Metering) to implementing sustainable building designs.

3.1.1. HVAC Efficiency

Action: Installing efficient HVAC systems

According to Carbon Trust (CarbonTrust, 2002), a 1^{o}C decrease in internal building temperature results in 10% energy consumption savings which would automatically lead to decrease in GHG emissions. Recommended actions that can improve energy efficiency include (University of Twente, Unilever, 2013):

- Insulation: If some rooms are too hot or too cold, inadequate air sealing or insufficient insulation could be the cause. Cavity wall insulation is used to reduce heat loss by filling the air space with material that inhibits heat transfer. It is often used in doors, which are the primary culprits of air leaks in the building. Adding additional insulation (double-glazing) around the interior of the building and installing air curtains will also contribute to reducing energy usage.

- Infrared Assessment: To identify areas of energy wastage, infrared imaging is a valued tool in identifying problems related to energy loss, inadequate insulation, inefficient HVAC systems, radiant heating, water damage on roofs, and much more. Conducting an infrared inspection on leak tightness and coldness infiltration can detect potential areas for additional insulation. Professional energy auditors can be employed to carry out this process.

- Heat Recovery Ventilation (HRV): HRV is an energy recovery ventilation system which uses heat exchangers to heat or cool incoming fresh

air, recapturing 60%-80% of the conditioned temperatures that would otherwise be lost. Instead of opening a window for ventilation, the HRV system is able to provide fresh air without any heat loss or gain. In climates such as Malaysia with warm, humid weather, HRVs can also remove humidity before it enters the air ducts to keep the interior comfortable and prevent the HVAC system from having to work harder.

- Alarm for warehouse doors: Alarms of annunciators indicate when doors are open and prevent unwanted heat loss or gain. This simple yet efficient measure has proven to be very cost effective in many cases.

- Green façade and roofs: Vegetation or plant cover on roofs over a water-proof membrane is known to reduce building heating and cooling needs. In addition, it can retain rainwater for other uses if an efficient drainage system is installed. This measure qualifies for LEED points.

Action: Maintaining efficient HVAC systems

Dirt and neglect are the top causes of heating and cooling system inefficiency and failure. It is important to have a qualified technician perform regular maintenance on the HVAC system every year. Maintenance activities include (US EPA, 2009):

- Lubricate moving parts. Electrical devices that lack lubrication can cause friction in motors and increase the amount of electricity consumption. Lack of lubrication can also cause equipment to wear out more quickly, requiring more frequent repairs or replacements.

- Check the condensate drain in the air-conditioner. If plugged, stagnant water in the drain may damage the hose, affect indoor humidity levels, and breed bacteria and mold.

- Inspect, clean, or change the air filter in your central air conditioner. A contractor can demonstrate how to do this for company maintenance staff to do so on a more regular basis.

- Clean the air-conditioner blower components and coils. Proper airflow over the coils allows your system to run efficiently, reducing energy costs and lengthening equipment lifespan.

- Check the central air conditioner refrigerant charge and adjust it if necessary to ensure it meets manufacturer specifications. Too much or too little refrigerant charge can damage the compressor, reducing the shelf life and increasing costs.

Action: Glazing

Transparent and clear glass panes used in buildings are prone to increase the heat gain inside buildings and hence additional air conditioning (higher capital and operating costs) becomes necessary. Proper selection of glazing properties helps improving energy efficiency in buildings as a good glazing will reduce solar heat gain from both direct and diffuse solar radiation (BSEEP, 2013). Better glazing efficiencies can be achieved by taking into consideration the following key factors (and other considerations as deemed appropriate for the building)

- Choosing the glazing with appropriate visible

light transmission, low solar heat gain coefficient

- Single and double glazing low-E value coatings
- Reduction of glazing area, where possible

Action: Wall Insulation

Malaysia has a mild climate with outdoor dry bulb temperatures reaching 26.9^{0}C during day time and 24^{0}C during night time. Heat is both conducted from the outside into the building and as well as from inside of the building to the outside. While the impact of insulation on building energy reduction may not be very significant, the effect on reduction in peak cooling load is certain. A feasibility study on the economics of insulation materials should be done before embarking on the installation of insulation systems (BSEEP, 2013).

Action: Roof Insulation

Energy efficiency brought about by different types of roofs varies for each type, operating hours and the space immediately below the roof. Ideally an insulated roof during day time to prevent heat gain and non-insulated roof during night time to cool the building would be the

most appropriate one for Malaysian climate. However, business needs (office / hospital / warehouse / cold storage), occupant comfort, wind velocity, rains, etc. are the key decisive factors in determining the roof type and materials used. In a simulation study carried out while developing *The Building Energy Efficiency Technical Guideline for Passive Design (2013)* suggests that provision of 25mm of insulation provided maximum incremental savings. Keeping in mind that electricity tariffs in Malaysia are bound to increase with time, businesses need to evaluate the energy consumption, return on investment, business needs of roof insulation and proceed accordingly.

Action: Zoning and Infiltration control

Zoning is the process of positioning air-conditioned spaces in a building in a coherent fashion such that wastage of conditioned air is minimized. In general it is done by locating rooms according to the leakage flow of air-conditioned air from the coldest room will benefit other spaces before it completely escapes out of the building.

Zoning the most air-conditioned areas at the core of the buildings surrounded by comparatively lesser air-

conditioned areas, optimizing window areas, converting glazed areas to opaque, etc. are among the widely practiced techniques to achieve energy efficiency.

Infiltration is the process of out-door air entering the air-conditioned space introducing sensible and latent (moisture) heat into the building, which increases the energy requirements. Sealing cracks in walls, window panes, controlling window/door operation with sensors, door pumps, air curtains could be adopted to minimize infiltration losses. Please refer *The*

Ken Bangsar (Ken Holdings, 2013)
First and highest rated green building in Malaysia

Ken Bangsar is an apartment complex that has energy-saving technology implemented from design, planning to the construction of the building. Among various energy-saving features it has, Ken Bangsar has a natural ventilation building design, capitalizing on natural air corridors by having a built-in "wind tunnel". The wind tunnel channels air into building corridors to cool the building. Moreover, the building has HVAC system to collect condensate from air-conditioning units in the management office and excess heat from compressor. These are used to regulate thermal comfort in the double volume lounge and lift lobby. In addition, the building is also equipped low-E laminated glass, motion-sensor lighting and energy-efficient light bulbs and lifts.

Building Energy Efficiency Technical Guideline for Passive Design (2013) for case studies on various scenarios of simulation conducted for more information on avoiding infiltration losses.

3.1.2. Lighting Efficiency

Action: Daylight harvesting

Malaysia being located close to the equator, with lesser seasonal variation has reliable day light available for about ten hours a day. Natural daylight harvesting is amongst the most efficient method to improve energy efficiency in buildings because diffused light is not much affected by the sun appearing in the sky/hiding behind the clouds. To achieve better utilization of daylight harvesting, appropriate tropical climate daylight harvesting techniques need to be deployed to gain the optimum benefits.

- Utilizing daylight to combine with artificial lighting is a simple, efficient way to reduce lighting.

- Analyzing the location, layout and orientation of windows (west / east), Incorporating skylights

into roofing and utilizing transparent weather-resistant material that can maximize natural light passage is one of the key measures to maximize use of daylight.

- Skylights that can be operated to open and close can additionally lead to savings in energy used for ventilation or cooling.

- Solar heat gain minimization, glare protection, deep daylight penetration, uniform daylight distribution, etc., needs to be investigated thoroughly, and addressed before implementation of a well-designed daylight harvesting system to optimize performance.

Action: Switching to energy-efficiency lighting

In 2010, the British Broadcasting Corporation carried out a quantitative energy analysis and identified solid-state light-emitting plasma (LEP), light-emitting diode (LED) and fluorescent lighting as the most energy-efficient sources without compromising on performance (BBC, 2011).

LED is one of today's most energy-efficient and rapidly-developing lighting technologies. LEDs are "directional"

light sources, which mean they emit light in a specific direction unlike traditional light sources which emit light and heat in all directions. For this reason, LED lighting is able to use light and energy more efficiently in many applications. Residential LEDs use at least 75% less energy, and last 25 times longer, than incandescent lighting (US Department of Energy, 2014).

As a cheaper alternative, high efficiency Compact Fluorescent Lighting (CFL) consumes only 25% of the energy of an incandescent bulb and lasts nine times as long, or up to 7 years. (Tufts University, 2014). Aside from its lower cost, CFL bulbs are known to be versatile. They can be applied nearly anywhere where incandescent lights are used, and are particularly suitable for area lighting.

Figure 5: Comparison of Lighting Types

Action: Optimizing lighting performance

Many minor steps can be taken to improve lighting performance. For example, regular cleaning of light bulbs can also improve energy efficiency, as two years' worth of accumulated dust can reduce luminosity by as much as 50% and increase operating costs by 15% (Carbon Trust, 2007).

Utilizing daylight in combination with artificial lighting is another simple yet efficient way to reduce energy costs. Analyzing the location, layout and orientation of windows (west / east) can maximize the natural light passage.

To supplement this, motion sensors can also help to

optimize lighting usage in a facility. Sensors switch off lights when an area is not occupied, and may also dim lights according to the required output (University of Twente, Unilever, 2013).

Action: Shades

Shades are primarily used to reduce solar heat gain, widely practiced across the world and Malaysia as well. External shades are being replaced by advancements in glazing technologies and internal shades are still the most economical solution (but with regular maintenance/replacement). Different types of horizontal and vertical shades are utilized, however thermal comfort, brightness control, glare protection, privacy, view out, durability are the key factors that need to be considered before the installation of shades. Please refer the *Building Energy Efficiency Technical Guideline for Passive Design (2013)* for more information on application of shades, various pros and cons.

Action: Applying for building certifications

Industry associations can play a vital role in providing guidelines and standards on building energy measures. In Malaysia, companies can consider applying for GBI, which

assesses new and existing buildings for their environmental performance according to a range of key criteria.

Iskandar Regional Development Authority (IRDA) has set out in its Green Building Road Map to utilize the GBI as a rating tool for buildings in the region to promote sustainability in the built environment. In July 2013, a luxury condominium in IM, Molek Pine 4, became the second residential project in the country to achieve the highest GBI rating.

Key Performance Index	Objective	Ease of implementation
Energy savings from measures to increase efficiency	Higher	Easy
Cost savings from measures to increase efficiency	Higher	Easy
Amount and % of reduction in carbon emissions in weight	Higher	Moderate
Building certifications (e.g. GBI)	Lower	Moderate

In this section, this guideline provides measures to reduce energy consumption in facilities and to lower GHG emissions. Areas to target are HVAC and lighting, where most of the energy is consumed.

Facility efficiency is principal to a green economy, and this is acknowledged by both the Malaysian Federal government as well as IM. Malaysia follows the Low Carbon Cities Framework & Assessment System, developed by **the Ministry of Energy, Green Technology and Water (KeTTHA)**, which recommends specific carbon reduction solutions in buildings and infrastructure. Malaysia has also launched the **GBI** to rate commercial and residential buildings. Both buyers and builders of green buildings stand to benefit from this scheme. Some of the benefits that businesses could enjoy include:

- Investment Tax Allowance for purchase of Green Technology Equipment

  Businesses could receive tax allowance of up to 100% of qualifying capital expenditure in relation to approved green technology projects or acquisition of green asset
- Income Tax Exemption on the use of Green Technology Services and System

Businesses could receive tax exemption of up to 100% for a period of 5 years in respect of the use and provision of green technology services and systems

More information on incentives can be found at GBI website, KeTTHA website and Malaysia Budget 2015 speech by YAB Dato' Sri Mohd Najib Tun Abdul Razak. Relevant website links can be found at the end of the manual.

IM aims to be an internationally recognized sustainable metropolis, and has imposed a building rating system alongside GBI for their new developments to identify and monitor building sustainability. Businesses should refer to **IRDA's Low Carbon Society Blueprint** and **Actions for a Low Carbon Future** that promote adoption of green building designs and features. Some of the benefits that businesses stand to receive from the policies include:

- An adjustment to tax rate on fixed asset tax
- Tax incentives on green development
- Low interest loans for energy-efficient building projects
- Subsidy for adopting photovoltaic power (Iskandar Regional Development Authority, 2014)

More information on incentives available from IRDA can be found at www.irda.com.my.

3.2. Waste Management

The real estate industry produces large quantities of waste. Waste can be broadly classified into demolition, excavation or construction waste. In Malaysia, only 76% of solid wastes are successfully collected and only around 5% is recycled, with 95% of collected wastes disposed at the country's 112 landfills (AlamFlora, 2014). This presents huge opportunities for the real estate sector in Malaysia to improve its environmental performance in the design stage.

Action: Reducing material use and waste at the design stage

Established in 2000, WRAP helps businesses, local authorities, communities and individuals in the UK to reap the benefits of reducing waste, developing sustainable products and using resources in an efficient way. Their two priorities are minimising resource use and diverting priority materials from landfill.

The best opportunities to reduce materials use and waste in construction occur at the design stage.

Waste and Resources Action Programme (WRAP) has a three step designing out waste process which includes (1) a facilitated workshop where all possible design changes to reduce waste were explored and prioritized in terms of their likely impact on waste reduction and ease of implementation, (2) a detailed analysis of the cost, waste and carbon savings of a shortlist of preferred design changes, and (3) a selection of design changes to implement in the project.

The Defence Medical Rehabilitation Centre, UK adopted the principles with great waste reduction. Measures that targeted demolition waste included recycling the demolition material as fill in the piling mat that importing aggregate. This would offer significant environmental benefits with less waste (555 tonnes) and a reduction in embodied carbon (nearly 190 tonnes) and an estimated 49 fewer lorry movements. Measures that targeted construction waste was using precast concrete stairs rather than casting stairs in situ. Even though it would cost slightly more, it eliminated the need for frame work, produced less waste by about one tonne and reduced embodied carbon by three tonnes (WRAP, 2014).

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Number of Projects that undergo design out waste phase	Higher	Moderate

3.3. Water Consumption

Water availability is increasingly becoming a global issue. The United Nations Environment Program has identified water shortage as one of two major environmental issues that the globe is facing today (Monash University Malaysia, 2014). Water-rich Malaysia, too, is not impervious to this impact of climate change on water security. The *New Straits Times* has reported that the Klang Valley water rationing in June 2014 has affected 3 million consumers. This incident is not localized either; other areas, such as Gombak, Kuala Lumpur and Petaling, were faced with the same predicament.

As it is, Malaysia registers as one of the high water consuming populations in the region. At an individual level, *Business Insider Malaysia* has estimated that Malaysians use 226 litres per person per day. This is significantly

higher than Singaporeans, who register 154 litres per person per day, and Thais, who register 90 litres per person per day. Malaysians need to reduce their water intensity level by 37% to achieve the recommended 165 litres per person per day.

Institutes of learning consume large amounts of water in its daily operations. Water is required for heating and cooling systems, restrooms, drinking water fountains, canteens, fields, laboratories and swimming pools. Water conservation measures include reducing consumption through education and installing low-flow fixtures, re-using and recycling greywater.

Financial institutions in the built environment consume large amounts of water in their daily operations. Water is required for heating and cooling systems, restrooms, drinking water fountains, showers and basins. Water conservation measures include reducing consumption through education and installing low-flow fixtures, re-using and recycling greywater.

Action: Installing sensors, switching equipment into low flow mode and other water-saving fixtures

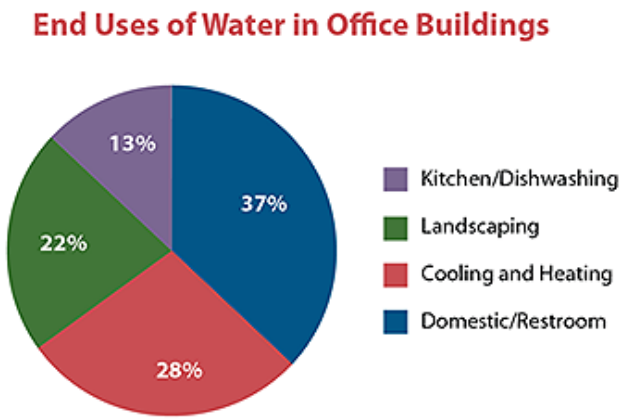


Figure 6: End Uses of Water in Office Buildings

In most institutions, the majority of water used is for toilet flushing and washing purposes (Figure 6). Low flow fixtures installed on taps and showerheads and high efficiency dual flush toilets reduce water consumption.

Action: Re-using greywater for flushing and irrigation

Greywater systems recycle water by collecting water that has been used for one purpose, and then using it for another, thus reducing the amount of potable water required to operate a building, and therefore reduce the volume of wastewater produced by the building.

The Bank of America's tower in New York features a integrated greywater system that captures wastewater for flushing and irrigation and reuses all rain water. The building also features low-flow fixtures and waterless urinals in their restrooms to save more water (GPSE, 2014).

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Water intensity	Lower	Easy
Utilisation of greywater	Higher	Moderate

3.4. Direct Impact: Improve Energy Efficiency in data centres

With ever-increasing demand for online banking, financial industry has constantly increased the size of data centres. As a result, energy consumption has doubled from 2000 to 2006 and is continuously increasing (US Department of Energy, 2014). The financial services industry is looking for ways to reduce energy consumption by improving

equipment and cooling efficiency with continuous monitoring.

Action: Improving energy efficiency of computing equipment

Image 1: An IT personnel maintaining data server

Computing equipment takes largest part of energy consumption within data centres (Emerson, 2008). It is important to measure processor efficiency and make improvements by using low power processor and sizing the power supplies to actual load to meet the full efficiency. Server power distribution also poses big threat to energy consumption. In order to efficiently manage power distribution system, data centre managers and IT developers should work closely to architect the most efficient power distribution system.

Singapore practices the Green Data Centre Standard that helps organisations to establish systems and processes necessary to improve the energy efficiency of their data centers. The most notable in the financial industry is Citibank, whose data centre won the first LEED

certification in Singapore (Citigroup, 2009; IDA, 2014).

Action: Reducing energy consumption from cooling system

Cooling system is the second largest figure in energy consumption within data centres (US DOE, 2014). Through new layouts such as hot-aisle and cold-aisle rack arrangements cooling system efficiency can be improved by more than 5% (Emerson, 2008). Variable-capacity cooling is another way to improve energy efficiency, where cooling system is operated according to actual operating load, thus reducing unnecessary energy usage from cooling system as data centres rarely operate at full capacity.

Action: Managing energy consumption through software development

Data centre managers, software developers and IT equipment manufacturers should collaborate and develop energy managing software. This energy management software needs to critically analyze and collect data on energy usage in order for managers to identify areas for intervention. Besides power management software or server management software, IT consolidation projects,

such as blade servers and server virtualization can also contribute to energy efficiency by reducing operation load and equipment usage. Citibank has eliminated 50 data centres and instead, increased virtual servers to 40,000, increasing server utilization to 45% (Citibank, 2014).

HSBC has obtained PUE (Power Usage Effectiveness) of 1.5 which represents level that exceeds current best practice. They have adopted real-time monitoring in cooling data centres, capacity planning and demand control. In 2012, they have achieved savings of USD240,000 or 4.8 GW of electricity and 2,400 tonnes of carbon, average PUE lowering from 1.92 to 1.79 (HSBC, 2012).

Action: Drawing best practices from industry

The MDCA develops green standards based on cutting edge input from its European counterparts. They organize awareness talks that financial services can participate in, helping businesses gain deeper understanding of their operating requirements and select solutions that suit them, thus maximizing energy usage.

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Energy use from data centres	Lower	Difficult
Data centre energy use assessments carried out	Higher	Easy

In this section, this guideline has provided measures to reduce energy consumption in offices and data centre. For offices, areas to target are HVAC, lighting and electrical equipment, where most of the energy is consumed. In the case of data centres, industries should focus on equipment and cooling efficiency, with continuous monitoring of energy use. These measures will reduce energy efficiency and GHG emissions from their own operations. The following section outlines how the industry can contribute in establishing a green economy.

3.5. Indirect Impact: Develop Green Financial Products and Services

While many financial services providers in IM will be branches of companies with head offices elsewhere, local

management teams should communicate the importance of green economy to their respective head offices and implement changes, at least in IM. This is because the financial services industry has an ability to make significant contribution to mitigate climate change and environmental issues. The industry can influence customers directly by providing products and services that induce sustainable consumption and the society by funding environmental related projects. With the investment capital provided by financial industry, environment related projects and businesses will be able to develop more efficient technologies or infrastructures that would mitigate climate change and pollution.

The current section will outline the role of each of the divisions, from retail, investment banking to insurance.

Role of Financial Services

Action: Adopting paperless trade platforms

Paperless trade platforms have tremendous potential for savings from paper usage and thus reduced emissions. Typically, the scale of B2B transactions is often larger than business-to-customer and a much higher success rate than B2C arena. The list of paper trails amongst others that can

be targeted can be seen in Table 3.

Area	Services
Trade Financing	Export L/C notification Letter of Guarantee Local L/C notification Import L/C opening Local L/C Nego Open Account Nego Master L/C Nego
Licensing/Certification	Purchase confirmation Certificate of Origin Insurance Policy Export/Import Certification
Customs Clearance	Export clearance Import clearance Tariff duty refunds
Logistics	Transportation declaration of bonded goods Exports/Imports declaration Manifest declaration Delivery of Order

Table 3: Services that are associated with paper

For example, work on electronic data imaging-based transactions commenced as early as the 1990s. In Asia, Korea is at the forefront through its *uTradeHub* project, a paperless trade platform bringing together the entire set of players – traders, banks, logistics firms, government

agencies – through a seamless system interface. *uTradeHub* offers various services by linking its platform with systems of approximately 30,000 trading and logistics firms, and banks. The United Nations Network of Experts for Paperless Trade in Asia and the Pacific estimates that savings from adopting this technology across the region will scale up to USD3 billion (United Nations Network of Experts for Paperless Trade in Asia and the Pacific, 2010).

Role of Retail Banking

Customers of retail banking products are mainly individuals, households, and small and medium enterprises. Through home mortgage, various commercial loans, and credit/debit cards products, financial industry can offer incentives that would encourage customers to purchase energy efficient houses or products.

1. Home mortgages

Action: Offering green mortgage

By offering lower interest rates or flexible terms than market value to customers who purchase eco-friendly houses, banks can induce their clients to buy more energy-efficient houses. Banks can also offer green mortgages through covering the cost of switching a house from typical to energy-efficient. For example, Bank of America offers energy-efficient mortgages for older buildings in an effort to reduce carbon emissions. Loans and grants are given to

Bank of Tokyo-Mitsubishi UFJ (BTMU)

New buildings in Japan can be certified eco-friendly and energy-efficient by the BTMU. Consumers of new buildings with the certificate can benefit from the *Eco Support Benefit*, which provides loans at a borrowing rate 0.1% lower than standard loans.

House owners in Japan are also eligible for other incentives to upgrade their houses with environmental-friendly features such as solar panels. They can receive *Super Renovation Loans* which is 0.5% lower than the annual interest rates of conventional loan scheme (BTMU, 2014).

buildings that have been identified for green retrofitting (Ferreras, 2011).

Action: Linking mortgage product with carbon emissions

Partnering with reputable carbon offset service firms, banks offer innovative mortgage product that contributes to reduction of carbon emissions. When customers participate in this product, banks first offer free home energy rating and then pay partnering firms to offset certain amount of the household's carbon emission throughout the mortgage participating year (UNEP FI, 2007).

Co-operative Bank, UK which has an ethical policy that excludes investments in companies operating in, say, arms manufacturing. It also makes an annual donation to Climate Care to offset around 20% of an average home's carbon dioxide production for every mortgage granted as part of its eco-mortgage initiative (Cucitti, 2010).

2. Commercial Loans (Auto and Fleet Loans)

Action: Promoting sales of fuel efficient and hybrid vehicles

Banks can look to contribute to reduction of GHG through offering specialized product for auto loans that provide incentives to customers who purchase vehicles with higher fuel efficiency. When bank sells an auto loan, they consider GHG rating and vehicle type in order to promote vehicles with high GHG ratings that would ultimately lead to low carbon emission. As customer purchase vehicles with high GHG ratings, banks provide incentives such as low interest rate and flexible terms for the loans. Banks, such as Bankmecu Australia which offers their *goGreen* auto loan, can also introduce specialized loans which can encourage their customers to purchase hybrid cars. Due to lack of variety in hybrid models in the market, loan sales were relatively weak, but with increasing introduction of new hybrid models by automakers, hybrid loans are expected to rise.

Action: Providing fleet loans to help freight companies mitigate environmental impacts

Bank of America, in partnership with the US Environment

Protection Agency and national freight sector has launched transport loan program that would provide benefits to freight companies. The program not only provides financial incentive through lower interest but also offers control devices and resources that can help companies to develop fuel efficient technologies faster. Bank of America's *Small Business Administration Express Loans* financed numerous freight companies' fuel efficient projects and helped companies save fuel costs, contributing to improvements on air quality and energy savings (UNEP FI, 2007).

3. Credit and Debit Cards

Action: Offering cards linked to environmental activities

Card companies and banks can create 'green' cards that offer discounts, extra rewards points and low interest rates when cardholders purchase eco-friendly products or services in order to encourage their customers to purchase more environmentally-friendly products and to be more aware of environmental issues related to products and services they purchase. Barclays introduced *Barclays Breathe Card* in 2007 that offered discounts and attractive rates to cardholders when purchasing "green" products and services (Guardian, 2007).

4. Online/Mobile Banking

Action: Encouraging paperless e-banking statements and online banking

Electronic statements and online banking are a staple offering by financial institutions. Maybank encourages its portfolio of users to switch to online banking and adopt e-banking statements to reduce their environmental footprint. They go the extra mile by creating awareness of how the simple act of choosing e-statements over paper statements via mail translate to savings in time and money, as well as reductions in water, paper and greenhouse gases in an interactive *Green Emissions Calculator* (Maybank, 2014).

Action: Eliminate the use of pass-books

As the world becomes more connected to technology, banks should phase out the use of pass-books. DBS has invited all its existing POSB Passbook Savings customers to convert their account to POSB eSavings without any hassle. They have made the transition smooth, where account numbers and services linked to the account are not affected. This saves material resources and helps consumers transition with DBS to go paperless.

Action: Offering mobile banking options to reduce material consumption

Banks can work with telecommunications companies to encourage the use of Mobile Point-of-Sale (MPOS) for small businesses. MPOS is a mobile retail solution that turns a smartphone or tablet into a secure point-of-sale payment terminal. Small businesses and retailers are no longer bound by cash payments or bulky, traditional point-of-sale terminals which are expensive to procure, require fixed lines to function and consume more energy, creating a win-win situation (DiGi, 2014).

Plug n Pay by CIMB Bank is Malaysia's first ever chip-based MPOS solution that offers businesses of any size an affordable yet secure option to manage electronic payments using smartphones or tablets.

Action: Collaborating with telecommunications companies for mobile payment services

Bharti Airtel and Axis Bank in India have announced a partnership to extend remittance-led mobile payment services through the Airtel mobile platform. This mobile commerce platform will enable consumers to make cashless payments and settlements through their

smartphones, and saves resources that consumers use to travel to bank branches and eliminates paper trails (Infosys, 2014).

Role of Corporate/Investment Banking

Corporate and investment banking can contribute to various environmental projects such as clean energy or infrastructure projects by funding and risk sharing through securitization.

1. Project Finance

Action: Obligating and supporting investees to become environmentally aware

Banks encourages investees who benefit from their capitals to strictly meet environmental standards and criteria by suggesting alternative energy development through accurate analysis of financial costs of energy consumption. For instance, Bank of America pledged to cut GHG emissions of its financed power sector investees by 7% (UNEP FI, 2007).

Action: Financing renewable, clean or alternative energy projects

Major investment banks created specialized service divisions that only deal with financing environmental project such as renewable, clean, and alternative energy project. Alternative fuel financing includes biofuel, geothermal, solar power and wind energy. HSBC has established a "climate business division", with the mission to invest in projects that can increase low carbon energy production, energy efficiency, mitigate impacts of climate change and to increase climate finance (HSBC, 2012). The company has undertaken various projects related to wind (Lincs Wind Farm), water (Dubai desalination plant) and sustainable transport (low-emission buses in Santiago). Moreover, Citibank has also financed various clean energy projects, with USD53.9 billion committed until 2013 (Citibank, 2014).

2. Securitization and Asset management

Action: Financing large scale and long term projects through securities

It is necessary for banks to bridge the gap between investors and investees because most large scale environmental projects are risky. Using the long-term nature of bond, banks can work to minimize the gap between stakeholders by reducing risks exposed to both

investors and projects.

Action: Managing funds specially designed towards investing on 'green'

Asset management is one of the core business units under investment banks. In order to fund eco-friendly businesses and unite environmentally aware investors who look for ways to fund "green" projects, banks manage funds that are specifically invested towards environment business. UBS's *Eco Performance* invests not only in leaders of environment business industry but also supports innovator firms that need funding (UNEP FI, 2007). HSBC runs Climate Change Fund, which offered a positive return of 19% in 2012 (HSBC, 2012).

3. Venture Capital

Action: Providing funds and Initial public offerings of environmental related firms

Investment banks can assist small firms fund required capitals through venture capital. Investment bank allows small technology-based firms to enter financial market in order to secure funding required for further growth. If such firms need more funding, investment bank can assist

firms to go public and secure more funding that will help develop new technology. In 2010, Tesla motors went on IPO, with assistance from investment banks and raised USD226 million for further development of their electric vehicles (New York Times, 2010).

4. Carbon commodity products and services

Action: Guiding firms to meet emission standards through effective trading in carbon market

Banks actively purchase carbon credits in order to assist their client firms meet the emission standards. Considering carbon as commodities like gas and gold, banks established emissions trading desks to help businesses achieve proper compliance with legal standards and laws. Banks act as an intermediary to ensure firms are conducting business under proper compliance regarding emission standards.

Role of Insurance

Insurance sector can also play pivotal role in creating a green society. Products such as auto insurance, home insurance, and carbon insurance are closely related to activities that occupy significant portion of energy

consumption in our daily life. Insurance companies are working towards providing incentives and guidelines that help customers follow environmentally friendly lifestyle.

Action: Minimizing vehicle usage through insurance policy

Insurance firms provide incentives for customers by connecting the premium to actual vehicle mileage. They induce customers to drive less by offering lower monthly payment and various discounts. *Pay as you Drive* insurance policy by insurance firms including Aviva (Aviva, 2006) and AXA (AXA, 2014), allow customers to pay premium depending upon their vehicle usage.

Insurance companies can also provide incentives to consumers to buy insurance products online compared to other methods like phone calls. Not only does it reduce energy needs to operate a call center, it also lowers the price of insurance for the consumer. The Green Insurance Company UK ran a scheme for 5 years that allows customers to offset CO_2 emissions from their vehicles through a tree-planting program. 2.5 million trees across the UK between 2007 and 2012 in order to offset motorists' carbon emissions (TGIC, 2013).

Role of Real Estate

Real estate is the backbone of the financial services industry. It houses financial institutions that run the economy. This provides opportunities for green growth in the built environment. Thus far we have provided more emphasis on the financial services sector. The green solutions identified for the real estate industry below can be applied and used interchangeably for the financial services sector as well.

Action: Identifying sustainable options in properties

Real estate investors can assess and benchmark the energy efficiency and sustainability performance of their properties to identify areas of improvement such as retrofit opportunities and adoption of green technology. This can require no or little out-of-pocket investment that reduces operating costs and generates immediate cash flow (Sustainable Real Estate Solutions, 2014).

In July 2013, a luxury condominium in IM, Molek Pine 4, became the second residential project in the country to achieve the highest GBI rating.

Action: Support tenants with green incentives

Real estate companies can encourage their tenants to monitor their environmental footprint through incentives, awareness and engagement. For instance, in 2002 City Developments Limited (CDL) Singapore launched *Project Eco-Office*, together with the Singapore Environment Council, to encourage the adoption of eco-friendly habits at their tenant's workplaces. An *Eco-Office Kit* with tips on how to implement "green" work practices were given for free. Homebuyers are also given a *Green Living Kit* which includes tips on how to "live green". CDL also organizes fairs for all of its residential projects to actively engage green living practices to their homebuyers (CDL, 2013).

Real estate companies can aid property owners to create areas that have ecological, economic and social value. As buildings are both a huge part of urban lifestyles as well as a main source of environmental impact, real estate has a positive role to play in the green building movement.

Action: Follow sustainable real estate investment guidelines

Organizations such as the Global Real Estate Sustainability Benchmark provide guidelines to survey and assess real estate sustainability performance. This engages investors

to improve the sustainability performance of their real estate portfolio, and consequently, the global property sector. This enhances and protects shareholder value by evaluating and implementing sustainability best practices in the global real estate sector (GRESB, 2014).

3.6. Indirect Impact: Adopting Responsible Investment Principles

The environmental, social and governance risks of lending and investing in manufacturing, power, energy and other major industries are high. Banks have established a risk management framework aligned to the United Nations Principles for Responsible Investment (UNPRI) or Equator Principles frameworks and designated units in order to mitigate and monitor these risks. Beyond risk management, these frameworks can be levers for firms to exploit.

UNPRI frameworks:

- Principle 1: We will incorporate ESG issues into investment analysis and decision-making processes.
- Principle 2: We will be active owners and

incorporate ESG
issues into our ownership policies and practices.

- Principle 3: We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- Principle 4: We will promote acceptance and implementation of the Principles within the investment industry.
- Principle 5: We will work together to enhance our effectiveness in implementing the Principles.
- Principle 6: We will each report on our activities and progress towards implementing the Principles.

Corston-Smith Asset Management is a pioneering independent asset management firm that has adopted the UNPRI six principles, articulated above (UNPRI, 2014).

In line with the UNPRI principles, fund managers in the firm believe that companies with transparent corporate governance practices are more likely to respond to shareholders' concerns and achieve superior long-term financial performances than those without. At the same time, strong governance resulting from strong boards can help to take the broad market up. This has been the firm's

continuous message to both the corporates and market regulators. Its founder, Ms Muhiudeen was the only Malaysian on the 2014 Forbes Asia Power Businesswomen list which honored 50 women from various industries, in recognition for her business leadership in this regard (Corston-Smith, 2014).

Action: Establish sustainability risk framework

Since the financial crisis, increasing number of companies have set up or revised their risk assessment framework to minimize potential impact their investment may have. All transactional activities must conform to standards set internally by the firm or by an outside organization. If investment is likely to pose environmental risk, these should closely be monitored and degree of that impact must be assessed. Organizing a panel of sustainability experts to assess sustainability risk and training and educating employees and investors regarding the potential impacts that their investment can bring to societies, environments and economies are essential.

Another sustainability risk framework that companies can employ other than the UNPRI is the Equator Principles, a credit risk framework assessment for financial institutions. It provides a minimum standard for due diligence to

support responsible risk decision-making.

Citibank's ESRM (Environmental and Social Risk Management) is informed by the equator principles and designed to manage the risks in projects they finance (Citibank, 2014). Transactions carried out by Citibank should go through ESRM standards set by the company which adheres to the International Finance Corporation Performance Standards and Environmental, Health and Safety guideline. Risk category is determined during the ESRM review process and if the project is considered to have significant impact, it is closely monitored throughout the project.

Both sustainable risk management frameworks are similar and financial institutions in IM can subscribe to any of them.

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Existence of environmental risk review process	Exist	Easy
Number of projects undertaken which may have significant environmental impact	Lower	Easy

The current section emphasizes the role of financial industry in establishing a green economy. Companies should aim to increase the proportion of green products and services and amount invested in green projects. Also, the guideline calls for an establishment of risk assessment framework, to manage and monitor associated project environmental risks.

3.7. Monitoring and Reporting

Action: Development/Adoption of green technologies

The Information and communications technology (ICT) enabling effect involves the introduction or improvement of ICT to reduce environmental impact and/or greenhouse gas emissions. For instance, the development of video conferencing has reduced the need for corporate air travel as meetings can be done through video conferences. An analysis by Global e-Sustainability Initiative found that ICT is crucial to mitigating climate change and could enable emissions reductions of 7.8Gt CO_2e, or 15% of GHG emissions (GeSI, 2008). Adopting and developing ICT can help with environmental initiatives and cutting costs.

Action: Create a "carbon budget" during monthly/annual strategic meetings

Companies can create a carbon budget to ensure that they meet carbon emissions targets. This sets a goal for their employees as well as discloses the company's interest in reducing emissions. A detailed carbon budget comes with a clear emissions reduction plan for the long-term which can provide direction/guidelines for staff. A carbon budget sets short-term emissions goals and allows for frequent monitoring and review compared to an emissions target over a period (Gilbert & Recce, 2006).

Action: Monitoring usage

A Building Energy Management Systems (BEMS) is a computer-controlled automation system which aims to create the safest, most comfortable environment possible at the lowest possible cost. On average, BEMS save about 10% of overall annual building energy consumption, and more than half of all buildings in the US larger than 100,000 square feet have one (Brambley, 2005). This is achieved through:

- Building system automation: This can be done according to time, type of day, or environmental

conditions. For example, the BEMS can control lighting to avoid unnecessary use of energy outside normal working hours or when ambient daylight levels are adequate (Sustainable Energy Authority of Ireland, 2014).

- Provide energy monitoring and management information. BEMS provides users with easily available data on energy flows, consumption, trends and overall building performance. Companies such as Siemens even have professionals at their operations center to evaluate the data collected and create comprehensive reports to identify ways to improve energy usage and achieve additional savings.

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Number of records of energy consumption	Higher	Moderate

3.8 Educating and Training Employees

Employees are the drivers of businesses on the ground. A well-intentioned environmental strategy from the management without the support of the employees to implement it correctly would subvert the effectiveness of the strategy. Similarly, eco-friendly equipment in the hands of an untrained employee will be ineffective. Hence, it is essential to have an educated and trained workforce that shares the management's concerns and ambitions to build a green and sustainable business.

Businesses should embark on strategic programs and initiatives to build on their capacity for improving environmental performance. Activities to educate and train the company's employees on environmental issues, such as climate change, could motivate employees to be more involved and committed to greening the company and thereby contributing to green economy in IM. For example, an understanding of the deleterious health effects of GHG enables employees to support the management's goal to reduce GHG emissions. Employees could become more dedicated and actively participate in sustainable development activities realizing that their welfare is directly affected by such emissions.

It is essential for employees to be made aware that they too have an impact on the environment. Firms could introduce a system that reveals to employees their impact on the environment. For instance, Woh Hup Pte Ltd in Singapore has implemented an environmental management system that monitors on a daily basis the energy, water and generated by the company. These figures are on display in prominently visible areas, such as lift lobbies and pantries, so that employees are reminded of their daily environmental footprint. Individual electric meters were also issued to staff to monitor personal electrical consumption per day. In this manner, employees could relate to their environmental performance, monitoring in real time the impact of their consumption or savings.

Employees could also participate in seminars and conferences as a way for sharing and learning opportunities. For instance, Universiti Utara Malaysia organized the International Conference on Management and Business Sustainability in 18-19 August 2014 that aimed to facilitate exchange of ideas to attain sustainability through business transformation (Universiti Utara Malaysia, 2014). Alternatively, business owners could conduct in-house training with the assistance of

IRDA's environment team or other experts such as the Malaysian Green Technology Corporation to customize training specifically to business operations.

Ultimately, businesses should aim to have a workforce educated and trained in sustainability topics as a matter of business strategy. With adequate awareness and training, employees would be better equipped to contribute to developing successful solutions. Finally, businesses are the beneficiaries of the cost-savings and subsequent profits generated by such an environmentally-conscious workforce.

Key Performance Index

Key Performance Index	Objective	Ease of implementation
Number of hours of sustainability training per employee	Higher	Easy
Number of training sessions organized by company	Higher	Easy

3.9 Compliance to Local Regulations

As a commercial entity present in Malaysia, businesses should as a first and essential requirement abide by the rules and regulations of the country. Compliance to regulations is a non-negotiable requirement before businesses can fully benefit from this guideline to further improve on the sustainability and green initiatives of business operations.

Malaysia has numerous prevailing national standards and also international standards that businesses are encouraged to adopt. Compliance to authorized standards acknowledged by the Malaysian government is complementary to the recommended actions proposed in this manual. Some examples of recommended standards that businesses are encouraged to comply with are the MS1525, ISO14001, ISO18001 and ISO50001. In addition, businesses can also look to have their products certified MyHijau and disclose their GHG emissions performance through MYCarbon reporting.

The MS1525 is a code of practice pertaining to energy efficiency and use of renewable energy for non-residential buildings. Developed by the Department of Standards,

Malaysia, this code primarily focuses on energy efficiency in buildings. In general, the code distinguishes between passive measures and active measures that building owners could adopt. Passive measures consist of recommendations relating to architectural and passive design strategies and the building envelope. Active measures correspond with lighting, power and distribution, air conditioning and mechanical ventilation and energy management systems. The adoption of the recommendations in MS1525 would help businesses to eventually reduce energy consumption and minimize use of non-renewable energy sources while maintaining a safe, healthy and comfortable environment for building occupants.

Businesses may also adopt the international standards from the International Standard Organization (ISO) as an alternative to the Malaysian Standards. The ISO is not only an independent non-governmental membership organization; it is also the world's largest voluntary developer of international standards, covering more than 19,500 standards across all industries. Common ISO standards that businesses adopt are the ISO 14000 (environmental management), ISO 18000 (occupational health and safety) and ISO 50001 (energy management

system). This manual encourages business to consult and consider the ISO standards in addition to the Malaysian Standards.

Moreover, businesses with green features built into their products can look to be certified under MyHijau for enhanced consumer confidence and to demonstrate their commitment to sustainable development. The MyHijau Mark is an internationally-recognized environmental and ecological label. Products labelled MyHijau can be featured in the MyHijau directory which helps businesses to promote their environmentally-friendly goods (Malaysia Green Technology Corporation, 2013).

Businesses could also seek disclose their GHG emissions performance through MYCarbon. The Ministry of Natural Resources and Environment (NRE) Malaysia has instituted the MYCarbon Programme, which acts as the National Corporate GHG Reporting Programme for Malaysia. The advantage of engaging in a reporting exercise includes creating the awareness in business owners of the importance of measuring and reporting on emissions. This could also eventually lead to efforts put into management of the measureables, such as GHG emissions or energy use, creating better products, services and operations.

3.10.1 Case Study: Deutsche Bank

Deutsche Bank (DB) is a German global banking and financial services company, whose environmental program, has set the standard for sustainability for financial services worldwide. Its climate strategy sets out to demonstrate that going green can be an environmentally responsible yet economically beneficial. Its climate goals include:

- Reaching and maintaining carbon neutrality from 2013 onwards
- Partnering and financing large scale renewable energy projects, to reduce fossil fuel reliance
- Supporting visionary enterprises for climate protection
- Organizing a responsible procurement process

Since 2013, DB has achieved carbon neutrality in all their offices and aims to maintain carbon neutrality until 2020. DB recognizes that a low-emission economy starts with the financial sector, to make operations as environmentally friendly as possible. DB reduces its

carbon footprint by improving energy efficiency, waste management, reducing energy consumption, water consumption and paper consumption. DB does so by raising awareness for its employees and following internationally recognizes Green Building standards such as LEED. With a portfolio of about 4,000 office buildings, bank branches and other real estate properties, avoiding emissions from facilities is a significant contribution to achieving carbon neutrality.

For their green leadership, DB earned a place in the Carbon Disclosure Leadership Index for the first time in 2012, as one of 33 companies worldwide. In 2012, DB also won Gold in the Best Green Intelligent Buildings Awards.

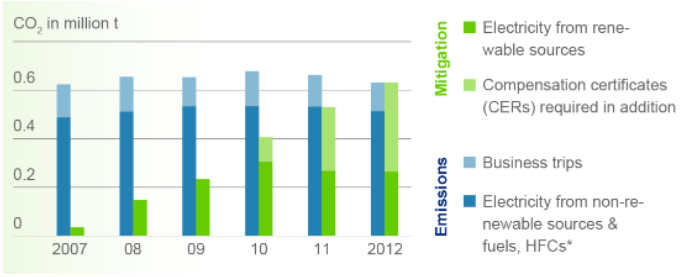


Figure 7: Pathway to carbon neutrality (DeutscheBank, 2014)

In addition, DB partners and finances visionary green initiatives, a notable mention being *Desertec*, a project that harnesses energy from the desert, which aims to supply 20% of Europe's electricity needs by 2050. By financing green initiatives, DB expedites green developments and exposes carbon- and resource-intensive industries to cleaner, more sustainable options.

DB advises clients in a responsible manner and puts sustainable financial solutions at its client's disposal, by making financial resources that promote sustainable development available to clients and sectors, as well as by giving investors the chance to invest in sustainable investment products. These services include:

- Sustainable credit products: provides financing/funding for energy-efficient buildings and renewable energy

- Sustainable investment products and strategies: competent partner for clients who wish to invest responsibly, by selecting investments with a sustainability focus

- Green Bonds: collaborated with 13 financial

institutions to create the Green Bond Principles, a set of voluntary guidelines to encourage transparency, disclosure and integrity in the development of this environmental finance market

- Sustainable real estate investment opportunities: investing in "green" buildings, energy efficiency and ESG process integration to ensure and enhance risk-adjusted returns.

- Alternative Investments: Investments that provide capital for sustainable development and climate protection such as Europe Energy Efficiency Fund (EEEF)

- Green infrastructure and business financing and advising: Investments in environmentally friendly infrastructure in order to realize environmental policy objectives

- Sustainable Shipment Letter of Credit for Sustainable Supply Chains: DB produces a letter of credit for goods that were produced according to approved sustainability standards – this is a banking innovation that can help transform

commodity supply chains to deliver more socially equitable and environmentally sustainable outcomes

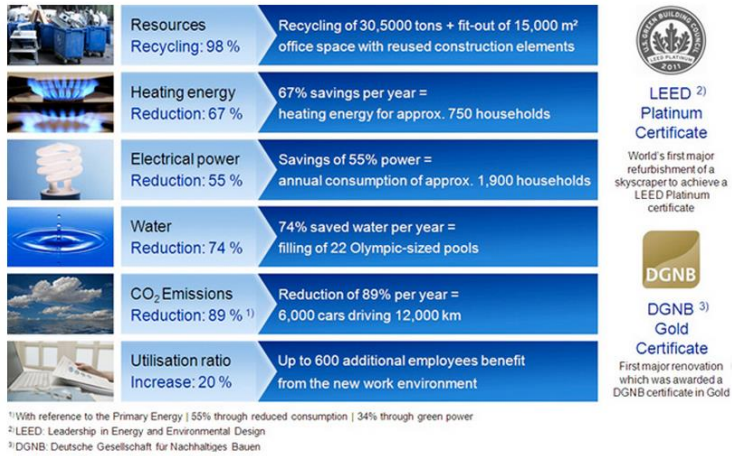


Figure 8: Deutsche Bank Towers savings (DeutscheBank, 2014)

DB's supply chain initiative applies strict environmental, social and ethical criteria to their suppliers. All suppliers are expected to adhere to principles laid down in the DB Code of Conduct. In particular, they must:

- Operate as an equal opportunity employer and recognize the right to collective bargaining as well as minimum and prevailing wages and benefits.

- Provide a healthy and safe working environment, not use any forced or child labor, and refrain from harassment or abuse of employees.
- Support sustainable development, act responsibly with regard to the environment, observe environmental criteria to conserve resources, minimize the negative environmental effects of the production, application and disposal of products, and reduce the use of hazardous products as much as possible.

Suppliers are also required to define specifications, develop a total cost model, assess evaluation criteria and draft contract clauses to facilitate supply chain reporting. Since Deutsche Bank spends over €8 billion each year on goods and services, the initiative makes substantial difference.

DB also implements an internal environmental management system based on the ISO 14001 since 1999, ensuring constant progress in sustainability performance such that DB is ranked among the top 10 companies in the financial sector in the Dow Jones Sustainability Index.

3.10.2 Case Study: City Developments Limited

City Developments Limited (CDL) is Singapore's pioneer property developer and an international hotel and property conglomerate involved in real estate development and investment, hotel ownership and management, facilities management and hospitality solutions.

CDL's environmental efforts have manifested in three key areas:

- Investing significant resources to raise environmental awareness amongst businesses and communities
- Supporting government and NGO programs
- Executing its own outreach initiatives all in line with its relentless pursuit of environmental excellence

As the threat of climate change looms, CDL has adopted a multi-faceted strategy to mitigate the negative effects of its operations on the environment. The company has instituted the following in its commitment to reducing its environmental impact:

- Environmental Health and Safety (EHS) Management System
- External EHS auditing
- A commitment to full compliance on all applicable EHS requirements enforced by local governing bodies (e.g. Building and Construction Authority, Public Utilities Board, Ministry of Manpower)
- Training, awareness and communication to cultivate a 'Green and Safe' corporate culture
- Water, energy and waste management targets enforced in all its developments
- Use of sustainable materials and systems in its developments, such as rainwater collection and LED lighting

Energy Management

In the realm of energy, CDL has strived to remain at the forefront of its industry, and has set a minimum BCA Green Mark Gold^{Plus} target for all its new developments. This is considered above legislative requirements, and showcases CDL's commitment to constantly improving its energy performance across its many business operations so as to contribute towards Singapore's national targets.

The company promotes electricity usage directly from the power supply grid through sub-stations at the construction stage whenever possible, so as to reduce usage of diesel generators. CDL is also exploring the adoption of green technologies towards its goal of energy consumption reduction. The installation and use of solar panels, Building Integrated Photovoltaic (BIPV) panels, energy efficient light fixtures as well as building materials that provide for self-cooling mechanisms in their developments are but a few of the measures CDL has implemented in order to better manage its energy resources.

Water management

CDL places a large focus on the responsible management of water in both its worksites and finished projects. Water-efficient features are present in many of CDL's new developments, ranging auto-irrigation to landscaping using recycled water and drought-resistant plants. Water recycling is also present in the company's construction operations, with its Silt Water Treatment cum Water Recycling System having been introduced across all its worksites in 2004.

Figure 9: Water usage and construction waste generated against previous year's numbers (CDL's Sustainability Report 2013)

Water usage targets are enforced in all of CDL's projects, with monitoring on a monthly basis and documentation of reasons for having exceeded water usage targets a common practice in its worksites. Water-efficient fixtures and fittings which have 'very good' or 'excellent' Water Efficiency Labelling Scheme (WELS) ratings are also utilized in CDL's developments. Alternative water sources are prevalent in CDL's projects, from the use of NEWater for cooling towers and fire protections systems to the choice of drought-tolerant plants for green roofs, thus reducing irrigation frequency.

CDL has been recognized for its efforts in responsible water management, with 11 of its buildings certified as

'Water Efficient Building' by Singapore's Public Utilities Board (PUB). CDL was also one of the first recipients of the inaugural Watermark Award by PUB in 2007, and actively enforces PUB's Active, Beautiful and Clean (ABC) Waters certification in its developments.

Materials and Waste Management

The fate of its waste and the sustainability of its construction materials are of constant concern to CDL. The company is always on the lookout for innovative and efficient construction methods, such as prefabrication and precast construction, in order to reduce the construction waste it generates. The selection of materials used in CDL's developments is guided by its Construction and Demolition Waste Policy, which mandates the use of sustainable products for its projects. Composite wood, which has over 30% recycled timber content, is an example of a commonly used material by CDL.

During any demolition process, CDL takes care to identify materials that can possibly be reused and recycled. Any publications by the company use eco-friendly paper, with a preference for Forest Stewardship Council-certified brands.

Sustainable Developments

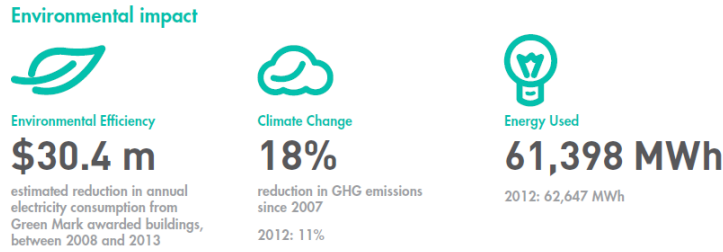


Figure 10: Measure of CDL's environmental efficiency, climate change impact and energy usage against previous years

One such example of CDL's environmental efforts put to action in its developments is D'Nest, a 912-unit nature inspired luxury condominium. Its design was based on a "Green Habitat" concept that provides seamless integration with its natural surroundings. This development currently holds the Singapore record for "Largest Solar Panels in a Condominium", with solar panels measuring a total of 1 520 m^2 set to be installed on the development's rooftops. This will potentially reduce monthly maintenance fees payable by residents.

D'Nest was also built with many eco-friendly design features, such as:

- Energy-saving features: LED light fittings, motion sensors at common staircases, carbon monoxide sensors in car parks to activate exhaust fans during peak hour usage

- Water saving features: Rainwater collection system and automatic water efficient irrigation system with rain sensors for landscape irrigation

- Recycling Features: Pneumatic recycling chutes on every level, use of recycled compost from horticulture waste for landscaping purposes

- Efficient Home Fixtures and Fittings: Provision of gas water heaters, four ticks energy efficient air-conditioning systems and 'very good' and 'excellent' rated sanitary fixtures and fittings for all units

The development also features a number of innovative installations, meant to promote eco-conscious living among its tenants, such as:

- Electric Car Charging Lots: To promote the use of electric cars

- Hyflux Water Filtration System: Installed in every kitchen for instant purified water to save energy by reducing need for boiling

- Eco Plug (Energy Monitoring Device): Provided for all units to create awareness and to educate residents in energy saving measures

Its solar panel system is expected to generate 600kWh/day, leading to a potential 219 000 kWh of energy that translates into S$ 60 000 saved in electricity bills per year. Energy savings are expected to go up to 356,431 kWh per year (equivalent to annual electricity usage in 69 households), while estimated water savings are expected to amount to 41,849 m^3 per year or the equivalent of 27 Olympic-size pools.

CDL's D'Nest was given the BCA Green Mark Gold^{Plus} Award in recognition of its many innovations and potential water and energy savings.

CDL's environmental efforts extend to educating the tenants of its developments. The company presents each tenant with a Project: Eco-Office Kit that promotes the 3Rs – reuse, reduce and recycle. Recycling corners can also be found in strategic locations in any CDL-developed building.

In celebration of CDL's 50 anniversary, the company donated Singapore's first zero energy Green Gallery in 2013 to the Singapore Botanic Gardens. The gallery's PV roof panels have an expected annual energy yield of over 31,000 kWh, more than the gallery's estimated energy consumption.

Energy conservation and efficiency improvement initiatives are also part of CDL's strategy, with a number of its investment properties having carbon dioxide sensors to monitor the level of the gas in offices and basement car parks. The use of Hempcrete, a biomaterial largely made from the hemp plant, in the Gallery's construction promotes good indoor air quality and lessens the need for additional infrastructure of the same function, thus reducing energy costs.

The company also partnered with the National Library

Board to create My Tree House – the world's first green library for kids, a green showcase led by green principles from its conceptualization to its operation. This development used sustainable products such as energy-efficient LED lighting, and plywood and fiberboard in its construction. The Tree's 'Canopy' itself was made out of over 3000 recycled plastic bottles collected from visitors to CDL's City Square Mall.

CDL has been acknowledged for its many efforts in furthering an environmental agenda in its projects. It has received 67 Green Marks from the Building Construction Authority for its property developments, currently the most for any company in its industry.

BCA Green Mark Awards (2005 – 2013)

Green Mark Platinum		
• 368 Thomson • City Square Mall (in new and existing building categories)**** • Cliveden at Grange • Cube 8 • Echelon • Fuji Xerox Towers*** • Gramercy Park • H_2O Residences	• HAUS@SERANGOON GARDEN • Hundred Trees • M Social Hotel • Quayside Isle • Republic Plaza**** • South Beach Commercial • South Beach Residential • 7 & 9 Tampines Grande (in new and existing building categories)****	• The Glyndebourne • The Oceanfront @ Sentosa Cove • The Residences at W Singapore – Sentosa Cove • The Solitaire • Tree House • Volari • W Singapore – Sentosa Cove
Green Mark Gold^{Plus}		
• 11 Tampines Concourse (in new and existing building categories)**** • Blossom Residences • Buckley 18* • Buckley Classique • CDL Office – City House, Levels 2 & 5 (Green Mark for Office Interior)**** • CDL Office – City Square Mall Management Office (Green Mark for Office Interior)	• City Square Residences • D'Nest • Jewel @ Buangkok • King's Centre • Livia • Manulife Centre*** • New Futura • Novotel Clarke Quay • NV Residences • Pasir Ris Grove (Parcel 3)	• Shelford Suites • St. Regis Hotel & Residences, Singapore • The Arte • The Palette • The Rainforest • UP@Robertson Quay • Wilkie Studio
Green Mark Gold		
• Botannia • CDL Office – City House, Levels 3, 4 and 22 (Green Mark for Office Interior) • CDL Office – Republic Plaza, Level 36 (Green Mark for Office Interior) • Central Mall (Office Tower)**	• City House** • City Square Shophouses at Jalan Besar • Exchange Tower, Bangkok**** • Millennium Residences @ Sukhumvit, Bangkok • Monterey Park Condominium • New Tech Park*	• Nouvel 18 • One Shenton • Palais Renaissance** • Parc Emily • Residences @ Evelyn • Savannah CondoPark • The Sail @ Marina Bay • Tribeca
Green Mark Certified		
• Butterworth 33	• Pantech 21*	• The Pier at Robertson

* Project managed by CDL.
* Recertified in 2009.
** Recertified in 2010.
*** Recertified in 2011.
**** Recertified in 2012.

Figure 11: CDL's projects that have garnered the BCA Green Mark Awards

Environmental Health and Safety

Environment impact

Energy used	2009	2010	2011	2012	2013
CDL Worksites (kWh/m²)	46	27	49	38	34
CDL Worksites (MWh)	8,248	4,613	5,150	5,838	5,074
CDL Commercial Buildings (kWh/month/m²)	17.70	16.73	16.39	15.16	16.43
CDL Industrial Buildings (kWh/month/m²)	9.75	9.01	8.16	7.28	8.15
CDL Commercial and Industrial Buildings (MWh)	52,640	66,568	60,567	56,213	55,743
CDL Corporate Office (kWh/m²)	91	86	84	88	86
CDL Corporate Office (MWh)	558	528	513	596	581
CDL Total Energy Used (MWh)[1]	61,496	71,708	66,230	62,647	61,398
Water used					
CDL Worksites (m³/m²)	0.8	1.1	1.2	1.3	1.0
CDL Worksites (m³)	150,176	182,859	127,426	191,160	143,880
CDL Commercial Buildings (m³/month/m²)	0.19	0.14	0.14	0.15	0.16
CDL Industrial Buildings (m³/month/m²)	0.09	0.08	0.08	0.08	0.12
CDL Commercial and Industrial Buildings (m³)[2]	453,382	581,784	555,093	567,389	573,153
CDL Corporate Office (m³)[2]	NA	NA	2,737	3,065	3,107
CDL Total Water Used (m³)	603,558	764,643	682,519	758,549	717,033
NEWater Used at CDL Commercial Buildings (m³)	101,412	123,344	136,269	125,981	121,122
Construction waste					
Generated at CDL Worksites (kg/m²)	61.70	46.50	24.50	43.92	30.24
Generated at CDL Worksites (tonnes)	11,160	8,071	2,552	6,671	4,544
Paper recycling					
CDL Commercial and Industrial Buildings (kg)	320,233	374,050	361,397	647,789	672,188
Tenants Participation Rate at CDL Commercial and Industrial Buildings (%)	>90%	>90%	>90%	>90%	>90%
Paper use					
CDL Corporate Office (number of A4 reams)	4,395	3,774	3,488	3,544	3,195
Carbon emissions (tonnes CO_2)					
CDL Worksites	4,137	2,196	2,452	3,004	2,525
CDL Commercial and Industrial Buildings	26,429	31,693	28,836	28,927	27,743
CDL Corporate Office	280	251	244	307	289
CDL Business Travel	78	81	57	65	73
Total Carbon Emissions	30,924	34,221	31,589	32,303	30,631
Complaints on construction noise					
CDL Worksites (number)	3	4	2	3	1

Figure 12: Summary of CDL's Environmental Impact for 2013

In 2003, CDL became the first Singaporean private property developer to be given ISO 140001 Environmental Management System certification; this was renewed in 2007. The company has adopted the Plan-Do-Check-Act methodology, through which it manages the environmental aspects of its operations while reducing exposure of its employees to risks. The inclusion of this methodology into CDL's business processes, it has also allowed the company to conduct annual systematic checks against whether it is fulfilling its environmental and EHS goals.

CDL was also the first Singaporean developer to be listed on both the Dow Jones Sustainability Index (since 2011) and the FST4Good Index Series (since 2002), marking CDL as an industry leader in both sustainability and care for the environment.

4. Social Responsibility

The promotion of sustainable business practices, respect for labour and human rights and transparency through disclosure are increasingly expected from responsible businesses. Democratic freedoms, ethical behaviour and good governance, the rule of law, property rights and a thriving civil society create fertile conditions for private sector led growth. The absence of such safeguards takes individuals out of markets, reduces innovation, restricts access to opportunity and drives political instability and conflict.

Human capital is an increasingly scarce resource in a global economy. It is deemed by many experts as the most important segment of a business' value chain. (Forbes, 2014) In the war for talent, companies with excellent human rights track record are consistently ranked high on Employer Branding surveys. This helps in attracting and retaining this key resource, contributing to lower rates of staff turnover and higher productivity, and increasing employee motivation.

Businesses should also note that institutional investors, pension funds and equity firms are increasingly taking

ethical factors such as human rights into account in their investment decisions. More than 1,260 signatories with USD 45 trillion Assets under Management have adopted the UN Principles for Responsible Investment (www.unpri.org), including the Harvard University Endowment. This represents an opportunity for businesses to highlight their human rights credentials in an increasingly enlightened and cautious market.

4.1 Human rights, labour standards and ethical behaviour

Respect for human rights is no longer a good to have but a prerogative of every aspiring country. Businesses that neglect human rights are also liable to boycotts, litigations and backlash by increasingly vocal and militant stakeholders. As reported by *Business Insider,* multinational corporations like Nike have been accused of exploiting low cost labour and have faced public pressure to introduce better working conditions and a minimum wage (Nisen, 2013). Businesses cannot ignore the impact that non-governmental organizations, civil society and social media can effect. Instead of being reactive, businesses should anticipate any aspects of their

operations that may infringe on human rights and proactively work towards avoidance of such violations.

In line with the principles outlined by the United Nations Global Compact (www.unglobalcompact.org) and the International Labour Organization (www.ilo.org), IRDA fully supports international standards for human rights, enshrined in the charter of Ministry of Human Resources (www.mohr.gov.my).

International labour standards are aimed at promoting opportunities for women and men to obtain decent and productive work, in conditions of freedom, equity, security and dignity. In today's globalized economy, international labour standards are essential components in the international framework for ensuring that the growth of the global economy provides benefits to all.

Malaysia too believes that everyone is entitled to their inalienable rights to invest, live, work, worship and play with dignity and respect. This is in accordance with IRDA's vision of building a "Strong and Sustainable Metropolis of International Standing".

Outlined below are the UN Global Compact principles for businesses to support and enact within their sphere of

influence, applying the following 10 core values in areas of human rights, labour standards, the environment and anti-corruption.

Human Rights

- Principle 1: Businesses should support and respect the protection of human rights (enshrined in the Malaysian constitution, please refer to http://www1.umn.edu/humanrts/research/malaysia-constitution.pdf);
- Principle 2: ensure that they are not complicit in human rights abuses across their supply chain.

Labour

- Principle 3: Businesses should uphold the freedom of association and recognise the right of employees to collective bargaining;
- Principle 4: remove all forms of forced and compulsory labour;
- Principle 5: abolish the use of child labour; and
- Principle 6: eliminate all forms of discrimination in hiring and employment practices

Environment

- Principle 7: Businesses should adopt a precautionary approach to environmental issues;
- Principle 8: undertake initiatives to incorporate greater environmental stewardship in its operations; and
- Principle 9: encourage the development and diffusion of environmentally friendly

Anti-Corruption

Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.

IRDA strongly encourages businesses to consider this important aspect and take an enlightened approach to adopt the framework in everyday business decisions and practices.

Key office holders should come together to formulate a human rights policy for the business to comply with and make it publicly accessible on mediums such as websites or on the annual report. Top management and HR professionals should take a proactive approach in educating every employee to abide by the values defined in the human rights policy.

4.2 Disclosure Requirements

Sustainability disclosure is the act of communicating organizational performance on financial, environmental, social and governance (ESG) activities. It is practiced by many leading businesses to communicate their ESG progress to stakeholders and lend credibility to their

commitments to sustainable development.

Across the globe, more enlightened stakeholders are raising concerns over businesses' non-financial performance and are demanding them to disclose their ESG performance with greater transparency and detail. In certain regions, such sustainability disclosure is a legal requirement. With effect from 31 December 2007, companies listed in Bursa Malaysia are required to include a description of the corporate social responsibility activities or a statement to that effect in their annual reporting (Listing Requirements of Bursa Malaysia Appendix 9C, Part A, Paragraph 29). Bursa Malaysia supports businesses by providing training for companies and offers guidance for sustainability reporting (Sustainable Stock Exchange Initiative, 2013).

Many businesses are accustomed to file mandatory sustainability disclosures such as annual reports and quarterly 10-Qs or in the form of non-financial reports such as pollutant and emissions reports for those in heavy industries. There are also established voluntary disclosure frameworks such as Global Reporting Initiative and the Carbon Disclosure Project which businesses adopt in their corporate social responsibility or sustainability reports.

There is also a trend of companies aligning financial and non-financial information in a single integrated report.

For businesses that are in their nascent stage of reporting their ESG impacts, they can get in touch with IRDA to learn more on disclosure requirements and report information on the basic triple bottom line performance. This ensures that the disclosed information is complete, consistent, useful and reliable.

The business expression, "If you can measure it, you can manage it" holds true. The process of developing a sustainability disclosure unlocks opportunities for a business to gain insights into its operations and supply chain, identify and mitigate risks and uncover potential cost savings and growth. Businesses that regular publish sustainability disclosures are recognised on established indices such as the Dow Jones Sustainability Index and FTSE4Good. Businesses that disclose ESG performance not only receive tangible and intangible benefits as mentioned, but also pave the way for a greener economy in Iskandar.

To achieve a more sustainable financial services and real estate sector, we have identified the following indices that

businesses should monitor:

- Initiatives and targets for environmental performance;
- Direct and indirect energy consumption
- Energy saved due to conservation and efficiency improvements;
- Initiatives to reduce indirect energy consumption and reductions achieved;
- Total direct and indirect GHG emissions;
- Initiatives to reduce GHG emissions and reductions achieved;
- Initiatives to mitigate environmental impacts of products and services, and extent of impact mitigation;
- Initiatives to improve public awareness on climate change issues

Requirements outlined above are based on the Key Performance Indices indicated in the above sections and aligned with the Global Reporting Initiative indicators.

4.3 Responsible Procurement

Responsible Procurement ensures that business commitment to good corporate responsibility is reflected in how they select and work with suppliers. Responsible businesses encourage other companies that they do business with to meet the standards of ethics, business integrity and environmental practice expected of them. This would include adherence to high standards on Health & Safety, Fair Business Practices, Environmental Protection, Human Rights, and Local Community Development.

Businesses need to develop a model to bring about meaningful change within the supply chain by way of identifying gaps in the suppliers' ethical business practices, and collaborating with them to develop tangible improvements.

Internationally, leading countries have also embarked on sustainable procurement guidelines across their ministries to ensure that labour rights and environmental concerns are respected. Recognizing the importance of Government Green Procurement (GGP), the Malaysian government has taken initial steps to boost demand for green products and

services.

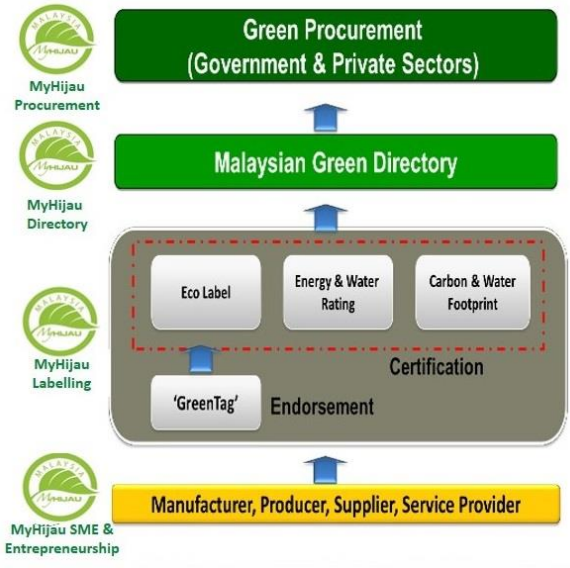


Figure 13: Malaysia Government Green Procurement (Greentech Malaysia, 2013)

As the long-term action plan laid out for Malaysia intends for GGP to be implemented at all levels of government by 2020, this sets an exemplary model for private sector companies to follow suit and enjoy potential business opportunities.

Common products which companies and organizations have adopted green procurement policies for include

recycled paper, renewable energy sources, VOC-free paints and adhesives, etc. Businesses can also cascade their procurement policy to suppliers/contractors to achieve a widespread effect of green procurement.

Leading firms are conducting life-cycle assessments to identify materials in their products that may pose significant environmental, health and safety risks. With this information, firms can re-design their products to prevent or mitigate such risks, which forms a logical part of effective supply chain management practices. Companies operating in Iskandar Malaysia could strive to have at least 10% of their purchases in the initial years, and move towards 100% green procurement in the years to come.

A series of case studies that describe how organizations from different countries have approached the verification of social criteria at various stages of the tender process is available at this link: http://www.sustainable-procurement.org/resources/tools-and-guidance/. Each study looks into how the compliance of direct suppliers is monitored and how this applies to the rest of the supply chain. Procurement professionals and other key stakeholders could learn from the experiences of their

counterparts to develop or improve their systems.

Another similar report that provides an overview of responsible procurement in the private sector globally is the *Green Purchasing: The New Growth Frontier* by the International Green Purchasing Network (http://www.igpn.org/DL/Green_Purchasing_The_New_Growth_Frontier.pdf).

The ideas generated and lessons learnt from these cases can provide additional incentives, goals, and tools for other companies to further advance their environmental purchasing policies.

5. Conclusion

This guideline highlights the important role that the financial services and real estate industry can play in creating a greener, more sustainable world.

Through the capital markets, the financial services sector has great potential to galvanize and catalyse behaviour towards greener growth across all industries. We have seen above how green financing can positively influence change and adopting responsible investing principles can be an added competitive advantage. The real estate industry houses many of these financial services, other industries as well as residences. It is crucial for the real estate industry to maximise the use of increasingly scarce resources to reduce waste and to implement the latest green designs and technologies into existing and current buildings. The built environment shapes the way we live, work and play. A thriving and sustainable city is one where all these demands are met without compromising business growth and our quality of life.

Useful Links

Bursa Malaysia regulations on sustainability disclosures
http://www.bursamalaysia.com/misc/system/assets/5949/regulation_rules_main_market_bm_mainchapter9.pdf

EY Publication on Budget 2014 Malaysia
http://www.ey.com/Publication/vwLUAssets/EY_Take_5_-_3rd_edition/$FILE/EY-take-5-msia-edition-3.pdf

Green Building Index
www.greenbuildingindex.org

Iskandar Regional Development Authority
www.irda.com.my

Low Carbon Cities Framework and Assessment
http://esci-ksp.org/wp/wp-content/uploads/2012/04/Low-Carbon-Cities-Framework-and-Assessment-System.pdf

Low Carbon Society Blueprint
http://2050.nies.go.jp/cop/cop18/SPM_LCS%20Blueprint_Iskandar%20Malaysia.pdf

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About IRDA
The Iskandar Regional Development Authority (IRDA) is a Malaysian Federal Government statutory body tasked with the objective of regulating and driving various stakeholders in both public and private sector towards realizing the vision of developing Iskandar Malaysia into a strong and sustainable metropolis of international standing

The Division provides strategic advice on environmental planning, development and management, carries out research and works in partnership with external agencies to promote a green growth economy for Iskandar Malaysia. In addition, the Division builds capacity, collaborates to integrate Climate Change programmes, statutory requirements related to the environment and supports green growth aligned to national commitments.

For further details, please contact the Head of Environment Division, IRDA.

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