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**ENERGY EFFICIENCY AND
CONSERVATION STRATEGIES AMONG
RETAILERS IN JAMAICA AND BEYOND**

ENERGY EFFICIENCY AND CONSERVATION STRATEGIES AMONG RETAILERS IN JAMAICA AND BEYOND

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SUMMARY

The actions we all need to take to reduce greenhouse gas emissions are common global concerns, although the likely impacts of climate change will vary depending on location; and the underlying benefits – for the environment and for business – are common too.

This paper presents an investigation of the energy-saving strategies adopted by the retail sector in Jamaica. It uncovers valuable lessons for both small shopkeepers and chainstore owners, and provides – possibly for the first time – indicators that could assist the Jamaican Government and retailers in the

evaluation of the retail sector's progress in contributing to the national energy cost reduction goals and with the formulation of baseline data.

In addition, this paper provides the insight that Jamaican retailers – and other retailers around the world – require in order to convince them of both the theoretical and practical connections between energy conservation strategies and operating costs.

1. INTRODUCTION

1.1 The economic and geographic context of Jamaica

Jamaica is a Caribbean island covering approximately 11,000 km², with a population of around 2.85 million (compare with, say, Wales, which is some 21,000 km² and has a population of approximately 3 million). Jamaica is tropical, hot and humid, with a generally temperate interior region.

Storms and other natural disasters are predicted to increase under the impacts of climate change and, according to the Pew Centre for Climate Change (2009), those negative impacts include mean sea level rise and north Atlantic tropical storms. Jamaica is particularly vulnerable in this respect, due to its geographical location. Even before the predicted impact of climate change there is an increased risk of hurricanes in the region from July through to November, although they can occur at any time of the year. On average, Jamaica loses 2% of gross domestic product (GDP) annually due to natural disasters. For example, the value of losses and

damage from the passage of tropical storm Gustav in 2008 resulted in \$15.5 billion or 1.7% of 2007 nominal GDP. According to the Economic and Social Survey Jamaica 2009 (Planning Institute of Jamaica 2010), Jamaica's trade balance for 2009 was a deficit of US\$ 3745.5 million.

The map of Jamaica (Figure 1) shows locations of the capital and major towns where most retail businesses are concentrated.

Energy consumption across all sectors in Jamaica has increased at a much faster pace than economic growth and, because the country is almost completely dependent on imported oil, it is at the mercy of potentially dramatic swings in energy prices. This has a considerable knock-on effect on the economy in general and also affects the demand for foreign currency. This situation is exacerbated by:

FIGURE 1: Map of Jamaica



- A foreign exchange adjustment which is added to electricity bills by the sole electricity supplier, Jamaica Public Service (JPS) Company, to compensate for fluctuations in the US dollar to Jamaican dollar exchange rate;
- A multiplier that is applied to electricity bills to enable the supplier to recover costs related to natural disasters;
- High interest rates on loans, which are a disincentive to potential investment in energy efficiency projects;
- The high cost of producing electricity (at the time of the study, US\$ 0.27 per kilowatt hour);
- A general consumption tax added to commercial electricity bills in 2010, as part of the government's efforts to reduce the national deficit, which increased the cost of energy to retailers;

Jamaica's Ministry of Energy and Mining identifies energy conservation and efficiency as the country's only short-term response to mitigate this adverse energy situation. The Jamaican Government's Energy

Conservation and Efficiency Policy (ECEP) (Ministry of Energy and Mining 2008) aims to coordinate all sectors of the economy towards significantly reducing national energy consumption, with the aim of achieving a minimum national target of a 2% cut in energy consumption per year. The ECEP has also suggested that an annual target of 1.4% (equivalent to more than 200,000 barrels of oil per year) could be achieved through proactive energy efficiency measures including upgrading plant, equipment and end-use devices.

In addition, with the establishment of the Clean Development Mechanism (CDM) under the Kyoto Protocol, energy efficiency measures could provide further benefits to the Jamaican economy by:

- Enabling the country to participate in the trading of carbon credits derived from energy efficiency projects;
- Giving the country access to the United Nations' Adaptation Fund which will enhance accessibility to financing for adaptation projects and programmes.

1.2 Energy efficiency in the retail sector

Retail is an important industry in Jamaica because of the high volume of sales. It is generally believed that high operating costs in the industry will fuel inflation and worsen the economy, and so greater effort in energy efficiency and conservation strategies is necessary for the industry to reduce prices to consumers.

Information garnered from Yudelson (2009), Esty and Winston (2009) and Hawken et al. (1999) suggests that about one fifth of the electricity consumption of Jamaica is attributable to the group of commercial users which primarily comprises retailers.

At the time of the study, most of Jamaica's energy efficiency activities had centred on the public sector – with the assumption that the public sector would lead the drive towards energy efficiency and conservation. There were plans to expand to all sectors but this had not begun at the time of the study. However, Jamaica had adopted the International Building Code (in 2008) and published several Application Documents (such as IS 308:2009 and IS 309:2009) which cover the people, planet and profit aspects of energy efficiency and conservation strategies.

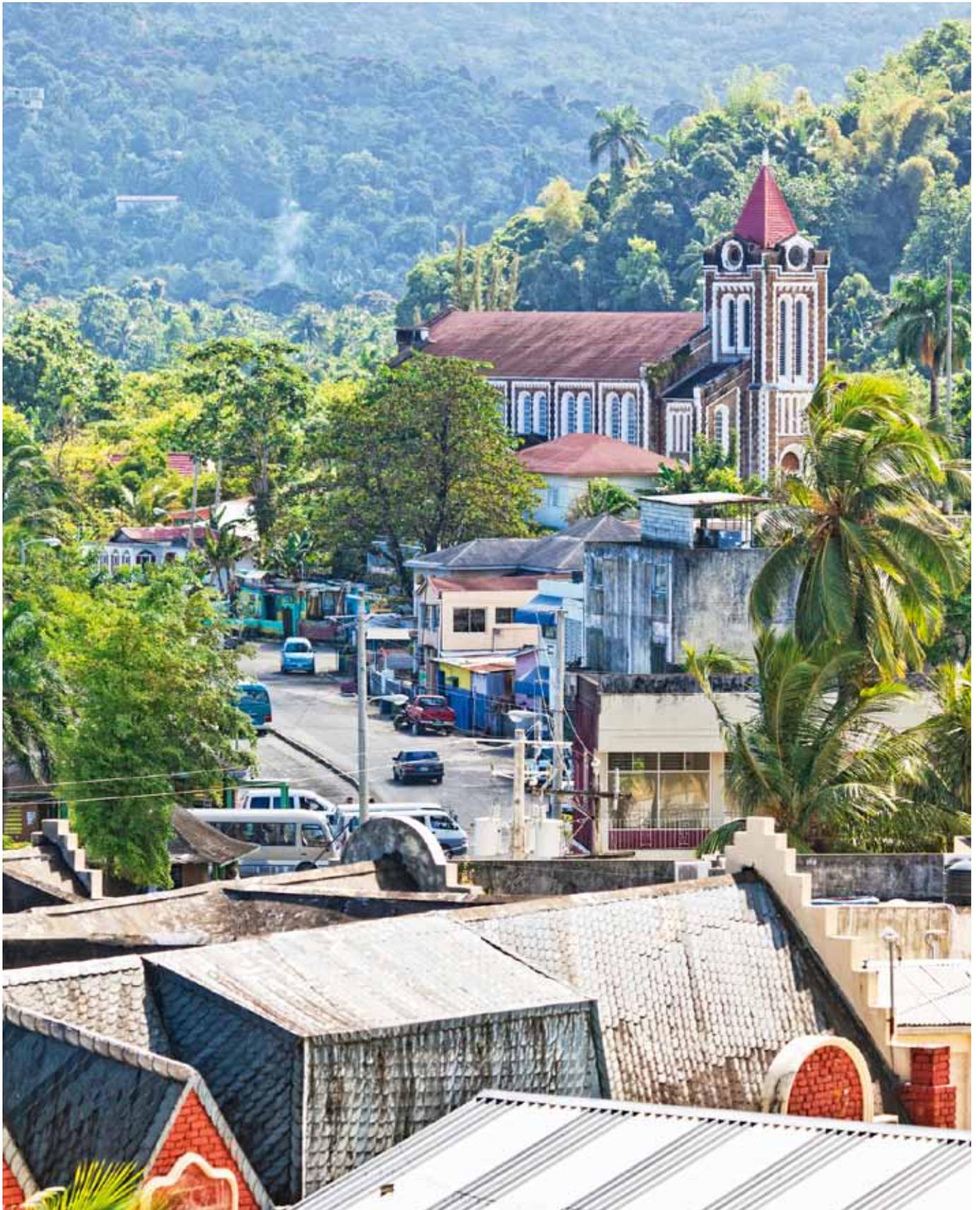
According to Hawken et al., '...no industry lacks potential for radically better energy efficiency' (Hawken et al., 1999). Furthermore, Hawken et al. (1999) suggest that energy efficiency can satisfy a number of political and environmental imperatives: there is something there for those who want improved jobs, competitiveness, quality of life, public and environmental health, individual choice and liberty.

While the general principles of energy efficiency and sustainability are widely applicable across all industry sectors, they have particularly important benefits for retailers, as described by Yudelson (2009):

- Reduced energy costs;
- Increased building value, through higher net operating income;
- Improved productivity and reduced health impacts of building operations;
- Improved sales and letting of properties;
- Increased sales from daylighting (averaging 5%);
- Marketing and public relations benefits;
- Recruitment and retention of key people;
- Access to funding from institutional sources;
- Trade benefits on the international market.

The key question, then, for Jamaica and other governments around the world, is how best to encourage the retail sector to embrace the energy efficiency and sustainability imperative.

The first step to achieving savings, whether financial or environmental, is to understand the status quo. This paper describes a single study – thought to be the first of its kind in Jamaica – of the attitudes of retailers towards energy efficiency, energy-saving measures already adopted, and an assessment of the potential for savings based on examples from other, similar countries and economies.



2. INVESTIGATION OF ENERGY EFFICIENCY IN THE RETAIL SECTOR

Definition of 'retailer'

A retailer is a business that sells goods to the end user (consumer), as opposed to wholesalers or suppliers which normally sell their goods to other businesses. Retailers range in size from smaller, independent locations such as a family-run bookstore operating from a kiosk, to large businesses such as superstores and international chainstores.

Jamaica's sole electricity supply company, JPS, places retailers in the classification of 'Small Commercial – General Service'. This group, which includes supermarkets, retail shops, gas (petrol) stations and light manufacturing, accounts for 21% of the energy consumed by JPS customers. (The categorisation is limited and does not include all retailers in Jamaica, resulting in a potential underestimation of energy consumption by the industry.

The study of energy efficiency among retailers in Jamaica was in three parts:

- Desk research – covering both the situation in Jamaica and globally;
- Qualitative study – a detailed interview with an industry expert in Jamaica;
- Quantitative research – a survey of attitudes to and actions on energy efficiency among Jamaican retailers.

2.1 Desk research

At the time of the study, very little secondary data could be found on the topic of energy efficiency per se in Jamaica, beyond government policy documents and information on public sector activities. Sources consulted included research papers, journals and corporate websites (see further reading).

Because of the lack of local information, the study was broadened to involve a brief review of overseas case studies. Such case studies benefit from having been certified by third party organisations, many of which

are publicly traded businesses with the responsibility of keeping proper records. (Local retailers are not typically traded on the Jamaican Stock Exchange and do not have the scrutiny as with larger or traded companies.) The case histories reviewed as part of this study show how energy efficiency and conservation strategies help to reduce operational costs, attract and retain talent, and pre-empt efficiency laws.

2.2 Qualitative study

An interview with Dr Earl Green, Group Chief Technical Director at the Petroleum Corporation of Jamaica (PCJ) was used to explore the wider themes of energy efficiency in the context of Jamaican retailers, and as

triangulation for the questionnaire results. Dr Green was a key player in the Jamaican Government's plans for energy efficiency and conservation as a means of meeting national targets on energy security.

2.3 Quantitative study

A questionnaire of Jamaican retailers, inspired by a survey of corporate energy efficiency strategies (Prindle and Fontaine 2009), was developed and tested. The final survey comprised seventeen questions, on:

- Demographics;
- Retailers' awareness of the benefits of energy efficiency;
- Extent of implementation of energy-saving measures;
- Extent of savings achieved;
- Incentives and barriers.

Respondents were drawn from several major Jamaican towns as well as the capital parish of Kingston. An online system was used to deliver the survey (see methodology). Potential respondents were sent the survey link by email either directly or through their business association. Twenty-seven detailed responses were received and analysed (not all respondents answered all the questions).

Most respondents were from the Kingston area (46.2%), followed by St. Andrew (26.9%). Other areas represented were: St. Catherine, Trelawny, Manchester, St. Thomas, and Clarendon. There were no participants from St. Mary, St. Ann, St. James, Westmoreland, Hanover, Portland or St. Elizabeth.

The respondents represented a range of retailers in line with the JPS classification (see Definition of 'retailer'): automotive (spares and repairs), computer stores/services, light manufacturing, plants/agricultural, eye wear, fashion, restaurants, petrol stations/convenience, art gallery, variety/general goods, furniture, jewellery store, pharmacy and one membership club.

Just under half of the respondents (45.5%) operated in stores that could be categorised as small (under 2,000 square feet; 185 m²), with 27.3% running medium-sized stores (2,000–10,000 square feet; 185–930 m²) and 13.6% being from large stores (over 10,000 square feet; >930 m²).

Methodology

There are inherent difficulties in studying attitudes to energy efficiency, as well as to gathering actual data on business performance, due to both confidentiality and lack of interest among potential subjects. For student researchers, these problems are compounded by lack of budget and lack of access to key personnel.

The use of an online questionnaire bypassed some of these problems, because it was quick, easy and cheap to implement; the problem is to garner sufficient responses. In this study, in Jamaica, retailers were approached directly by email, followed up with letters and telephone calls, and also an appeal was issued to business associations to circulate the survey link among their members. Nevertheless, the response rate was fairly low. (In the following discussion, percentage values have therefore been rounded to the nearest whole number.) Expert opinion (Dr Green) was useful, therefore, in the interpretation of the responses.



3. RESULTS IN CONTEXT

Unlike commercial office facilities and educational institutions, which tend to focus on the link between productivity and energy use, retail organisations link energy use to sales figures.

Understanding this connection between efficiency and profitability is therefore critical for retail organisations who are considering energy efficiency measures.

3.1 Awareness of the benefits of energy efficiency

Table 1 shows that a significant majority of Jamaican retailers who participated in the study are aware of the potential benefits of energy efficiency. When respondents were asked to estimate what level of

savings could be achieved, approximately 60% stated that they thought it possible to reduce energy costs by at least 6% or more, with almost fifth of respondents suggesting that savings of more than 20% are possible.

TABLE 1: In the long run, how much can retailers reduce their operational costs by implementing plans to reduce energy consumption or access more economical energy sources?

Savings on energy costs anticipated or experienced (in % of total energy costs)	No of respondents	Percentage of respondents
no reply	7	26%
0-5%	4	15%
6-10%	5	18.5%
11-20%	6	22%
over 20%	5	18.5%

Energy audits

An energy audit is the primary means of identifying potential energy savings and then measuring reductions in operating costs following the implementation of energy-saving measures. Audits may be more or less detailed, as follows:

Level 1 – a walk through the premises to identify opportunities for energy conservation;

Level 2 – as Level 1, plus identifying opportunities for investment in energy-saving measures;

Level 3 – as Level 2, plus an investment proposal plan to upgrade the facilities.

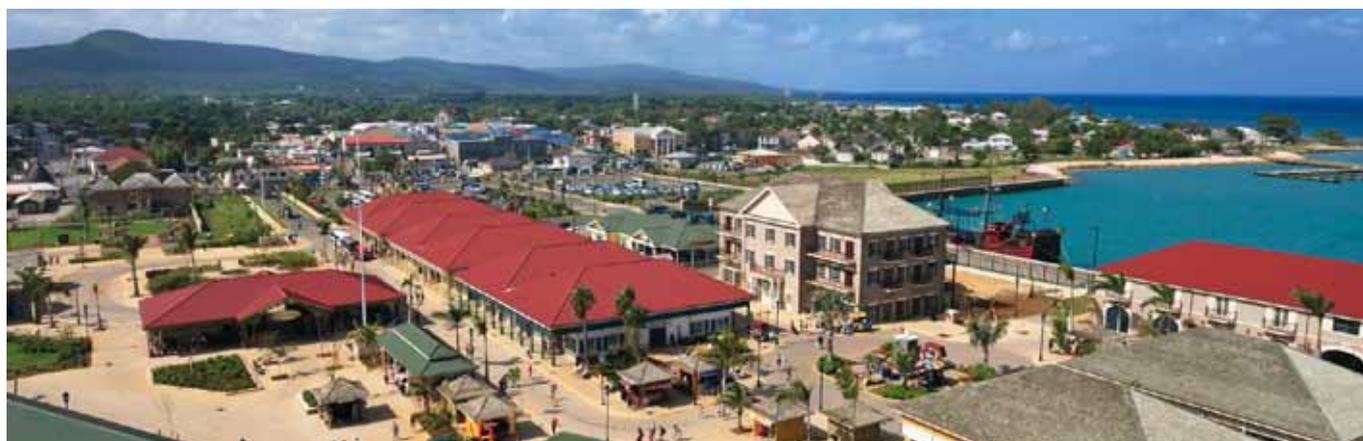
3.2 Actions on energy efficiency

In addition to the general levels of awareness identified, the retailers who participated in the study had, to a certain extent, begun to act: just under half of the respondents (44%) stated that they had carried out a Level 1 energy audit.

However, there is considerable room for improvement:

- only three companies reported carrying out Level 2 energy audits;
- only one company had conducted a Level 3 audit.

A quarter of respondents (26%) had taken no steps towards implementing an energy efficiency strategy; the remaining 15% did not answer the question.



3.3 Energy-efficiency policies in action

It is widely acknowledged that one of the key factors in successful energy-efficiency campaigns is for businesses to have a written strategy, endorsed by members of the board or company directors.

Example: Energy savings generate bottom line benefits. Estimates by the US Environmental Protection Agency's Energy Star® Program show that every dollar a grocer saves has the same effect on profits as selling \$80 of merchandise.

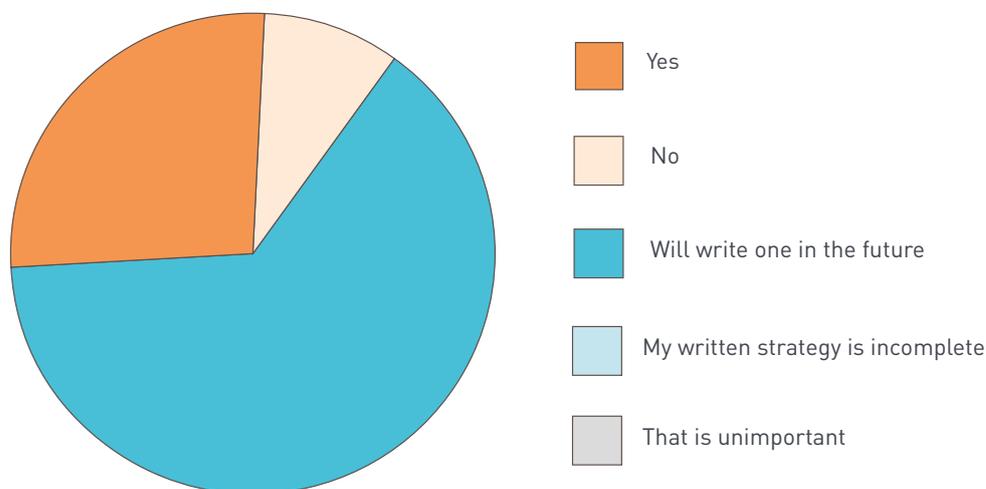
The US-based company Food Lion LLC partnered with a lighting manufacturer to find a lamp that doubled light output and decreased energy use by 40%. The energy manager at Food Lion estimated that their refrigerator case retrofits alone saved 100,000 kilowatt hours annually. (Source: Thurston 2002)

The questionnaire found that only a few respondents (12.5%) had a written strategy (Figure 2), although 35% of respondents said that all levels of staff would play a role in an energy efficiency and conservation strategy. In other words:

- around a third of respondents understand that staff involvement is crucial, but most are not aware that this involvement is best harnessed through a corporate strategy.

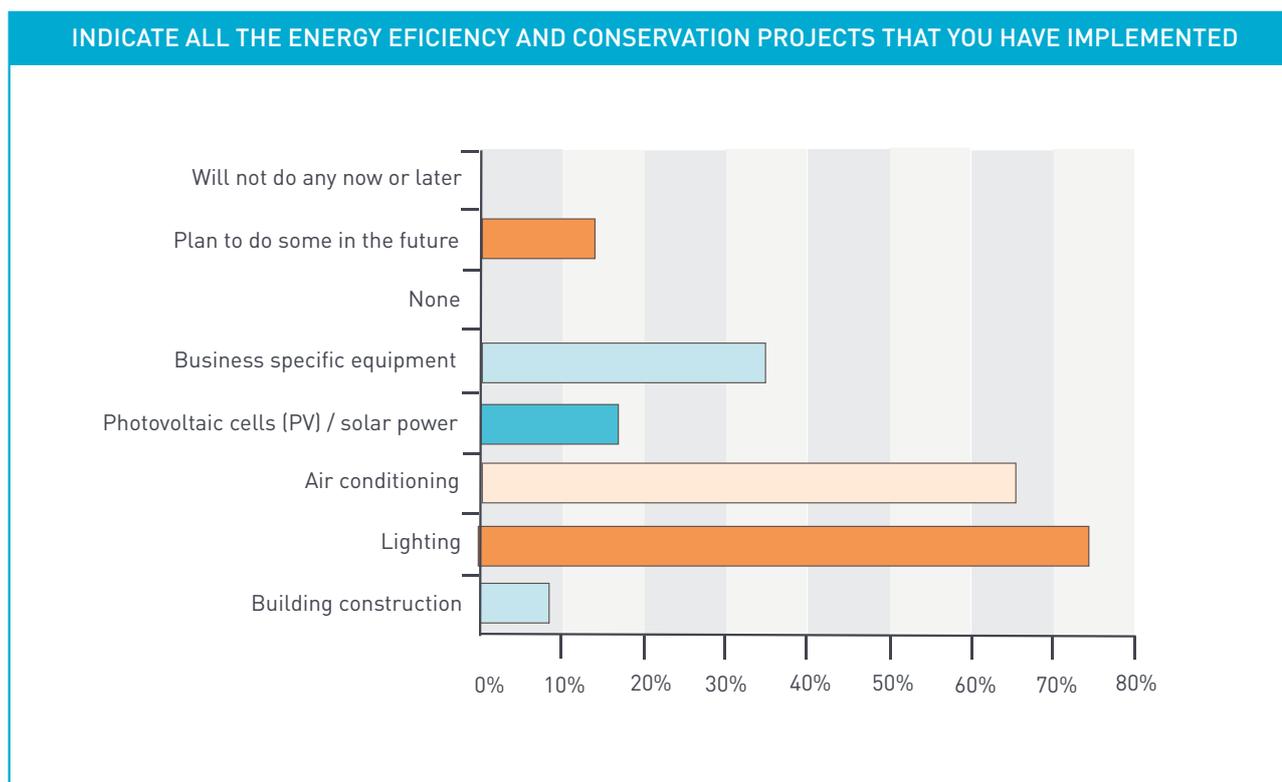
FIGURE 2: Written energy efficiency and conservation strategy

DOES YOUR BUSINESS HAVE A WRITTEN STRATEGY TO REDUCE ENERGY DEMAND AND REDUCE THE COST OF ENERGY THAT IS SUPPLIED?



Among this group of retailers, changes to lighting and air-conditioning equipment were the most popular energy-saving measures, as shown in Figure 3.

FIGURE 3: Energy efficiency and conservation projects implemented by respondent



These technologies are generally regarded as 'low-hanging fruit' – that is, easy and generally cost-effective to implement. However, unless automatic lighting controls are incorporated into the new schemes, manual controls will not deliver the anticipated benefits without the enthusiastic input of staff, and this is best achieved in the context of a written policy.

Example: The US-based BJ's Wholesale Club Inc. reported that its energy management system (EMS) which, in addition to controlling lights, regulates the heating, ventilation and air-conditioning (HVAC) system and refrigeration set points, and has contributed to its total of US\$ 4.8 million in energy costs annually. Other energy-saving initiatives include sub-metering, partnering with a green power marketing firm to help generate solar power, and a programme in its New York stores to cut lighting use in 25 stores during peak demand times, with no detriment to sales observed. (Source: Lobash 2003)

Given that so few retailers in the study had conducted Level 2 or Level 3 energy audits, it is understandable that the retailers were unable to measure the level of savings from their investment. The questionnaire showed that over 80% of respondents believed that the implementation of energy efficiency and conservation strategies reduced operating costs. However, only 14% of respondents knew the expected or actual returns on their energy-efficiency investment. The others said they did not know the return on investment for the energy projects they had implemented. Respondents varied in the metrics used for reporting their energy savings: percentages, kilowatt hours and dollar amounts.

Example: In 2005, Walmart built two experimental stores in McKinney, Texas and Aurora, Colorado. Knowledge garnered from the operation of those two stores was incorporated into Walmart's High Efficiency one (HE1) pilot stores. Three HE1 stores were opened in 2007 and they were expected to reduce energy requirements by 20% compared with a 2005 baseline. Four second-generation (HE2) pilot stores opened in 2008, and a new store opened in Las Vegas, Nevada in March 2008 (HE5) was designed to perform up to 45% more efficiently than the prototype stores built in 2005.

Energy-efficiency improvements included enhancements to the HVAC systems, using light-emitting diode (LED) technology in freezer cases and exterior signage, installing nineteen solar power systems since early 2007 (two stores in Hawaii and seventeen in California), and increasing daylighting via skylights in more than 2,200 stores. (Source: Yudelson 2009)



3.4 Barriers to improving energy efficiency

Barriers to the introduction of energy-saving measures were explored in the question: What barriers prevent Jamaican retailers from implementing an energy efficiency and conservation strategy?

The responses were (in order of importance to the retailers):

- Initial cost (cited by 94% of respondents);
- Lack of government incentives (61%);
- Lack of knowledge (56%);
- Unavailability of technology (22%);
- Low return on investment (11%).

'Other factors' (unspecified) were mentioned by 17% of respondents, and these included:

- The inaccessibility of energy-efficient equipment due to the prohibitive initial costs;
- Inefficient equipment in their specific line of business is a hindrance to the development of energy efficiency strategies.

Several respondents thought that there was a need for a strategic approach and that not enough was being done in Jamaica about energy efficiency and conservation. These results reflect the choices of energy-saving measures already discussed (Figure 3). Respondents were most concerned about their lack of knowledge of the available equipment

and technology on the market and the lack of knowledge about the topic in general.

The second most frequent response related to the lack of government support regarding the implementation of energy efficiency projects. This response highlights a gap between what the government plans for energy efficiency and conservation and the retailers' awareness of these incentives and plans.

The following conclusions can therefore be drawn:

- Because initial costs and lack of financial incentives are the most commonly cited barriers, there is considerable scope for government-funded support schemes for retailers;
- With more than half of the sample citing 'lack of knowledge', it is likely that a national awareness-raising and information campaign could have a positive impact on the uptake of energy-saving measures.

In addition, the following barriers were identified by Dr Green (2010):

- The retailers themselves do not recognise the importance of energy efficiency and conservation;
- Retailers were too risk averse to consider the benefits of working with energy services companies (ESCOs);

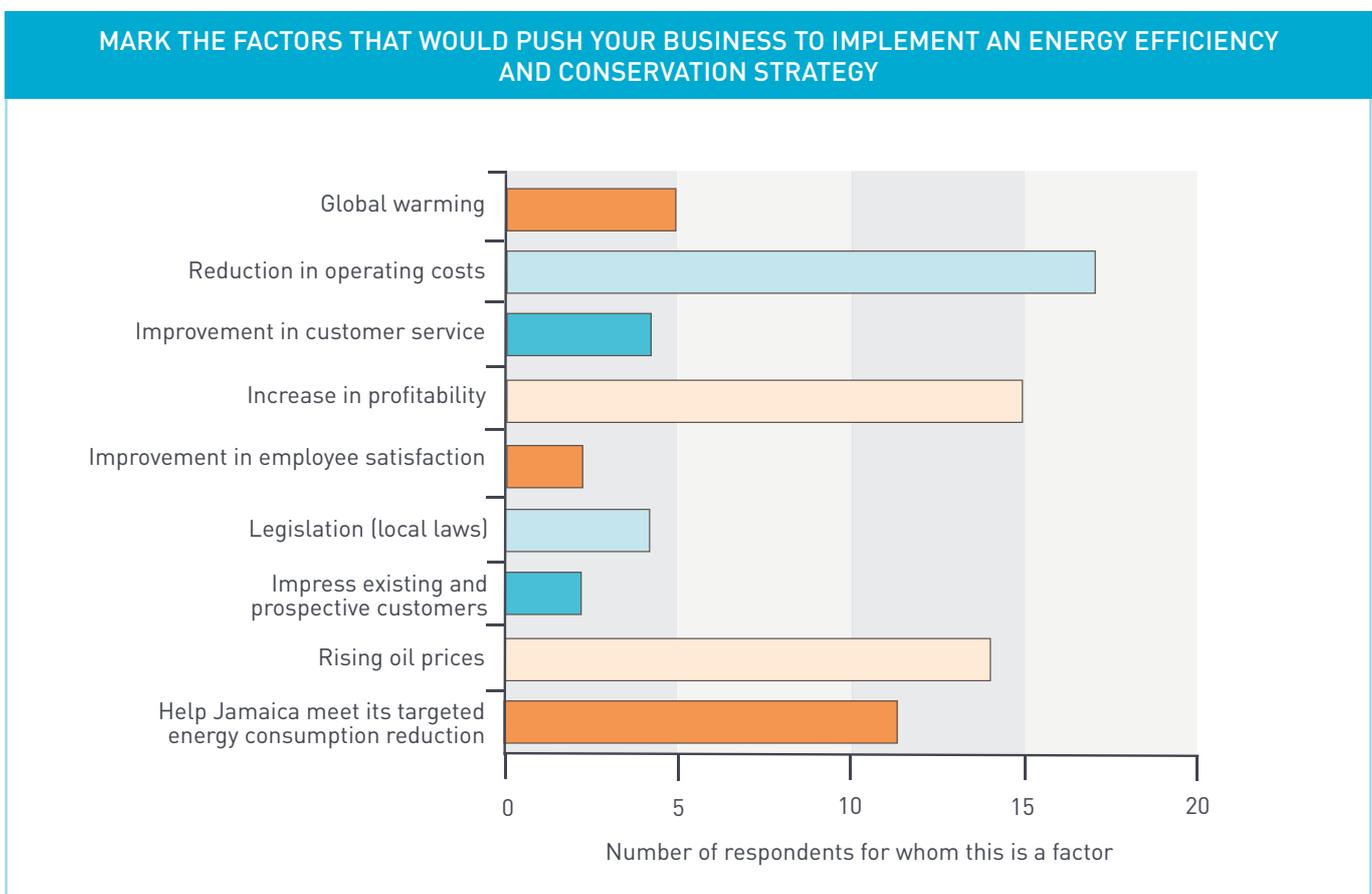
- The quality of available products from a standards perspective (e.g. no standard laboratory testing of energy-efficiency claims is provided by the Jamaica Bureau of Standards);
- Problems in the development of the energy-efficiency equipment industry and of the energy-efficiency building code (which had been in development for over 10 years at the time of the interview);
- The absence of reinforcing legislation;
- The scaling down of the energy efficiency labelling programme started by the Jamaica Bureau of Standards.



3.5 Addressing the barriers

Figure 4 shows the factors the respondents said would incentivise them to implement an energy efficiency and conservation strategy.

FIGURE 4: Incentives for implementation of energy efficiency and conservation strategy



Understandably, reducing costs and increasing profits were the most popular influencing factors. It is interesting to note that employee satisfaction and 'impressing existing and prospective customers' are the least likely factors to influence retailers –

suggesting that there is a considerable information gap among Jamaican retailers. In the UK, for instance, appearing to be 'green' is a significant driver of energy-efficiency measures.

3.6 Existing incentives

In October 2008, the Development Bank of Jamaica (DBJ) officially launched the Petrocaribe Small and Medium Enterprise Energy Fund (the Petrocaribe Fund), which provides financial support for energy audits, ESCOs and manufacturers of energy efficiency equipment and devices. One billion Jamaican dollars was made available through the Petrocaribe Fund, although, at the time of the study in 2010/11, there had been insufficient interest in the scheme.

According to Dr Green, the PCJ would like to see the emergence of ESCOs, which would provide retailers with an energy audit and then implement the opportunities identified at a percentage of the retailers' monthly energy bill over an agreed period of time.

In December 2010, the DBJ lowered the rate on loans for energy projects from 12% to 9%. During the interview stage of the study, Dr Green confirmed that retailers would qualify for those loans.



4. DISCUSSION AND RECOMMENDATIONS

Since the late 1990s, leading US and global retail businesses such as Walmart, Tesco and Kohl's (which has stores in 49 US states) have been spurred into action to reduce their impact on the climate and to influence governments' environmental policies. Such corporations are no longer primarily concerned with risk management and protecting the bottom line; they are now finding ways to lever new business opportunities. According to Yudelson (2009) a 2007 survey by a major consulting firm demonstrated that the 'best-in-class' retailers not only achieve dramatic cost savings (20% decrease in energy costs) – especially when compared to industry laggards (39% increase in energy costs) – but also dramatically improved customer loyalty.

Those companies that have already responded to the energy efficiency and sustainability imperatives have done so, at least in part, because they want a head start over their competitors in learning how to reduce their emissions, but also due to growing pressure from stakeholders such as investors and consumer groups. Stakeholders are pushing for transparency on climate-related risks and the

integration of climate concerns into companies' core business strategies. There may also be considerable risk to a company's brand and reputation if customers, partners, investors and employees do not view the firm as acting responsibly with regard to climate change. The potential physical impact of climate change on business operations is another concern among corporate leaders.

According to Lubin and Esty (2010), business leaders focus on four principal stages of value creation:

1. Reduce cost, risks and waste and deliver proof-of-value;
2. Redesign selected products, processes or business functions to optimise performance;
3. Drive revenue growth by integrating innovative approaches into core strategies;
4. Differentiate value propositions through new business models that utilise these innovations to enhance corporate culture and brand leadership to secure a long-lasting competitive advantage.



Ever increasing energy consumption will make it necessary to generate more electricity; and because electricity production is an energy-intensive process (that is, not all fuel burned converts directly to useable energy), reductions in electricity use provide greater environmental and cost benefits (Wright, 2010). This means that if energy efficiency and conservation strategies are implemented by retailers, their energy use – and, by extension, their operating costs – will reduce while also benefiting the wider environment.

The first challenge in implementing an energy efficiency and conservation strategy within the retail sector is cost. Other challenges include: the capabilities of the design and construction teams to provide green features on conventional budgets, the disparity between the building owners, as the party that incurs the costs of green features and tenants is the party that get the benefits. Other issues relate to writing green tenant guidelines.

Many of the retailers who have begun to reduce energy use in stores have done so with the guidance and assistance of LEED and BREEAM systems.

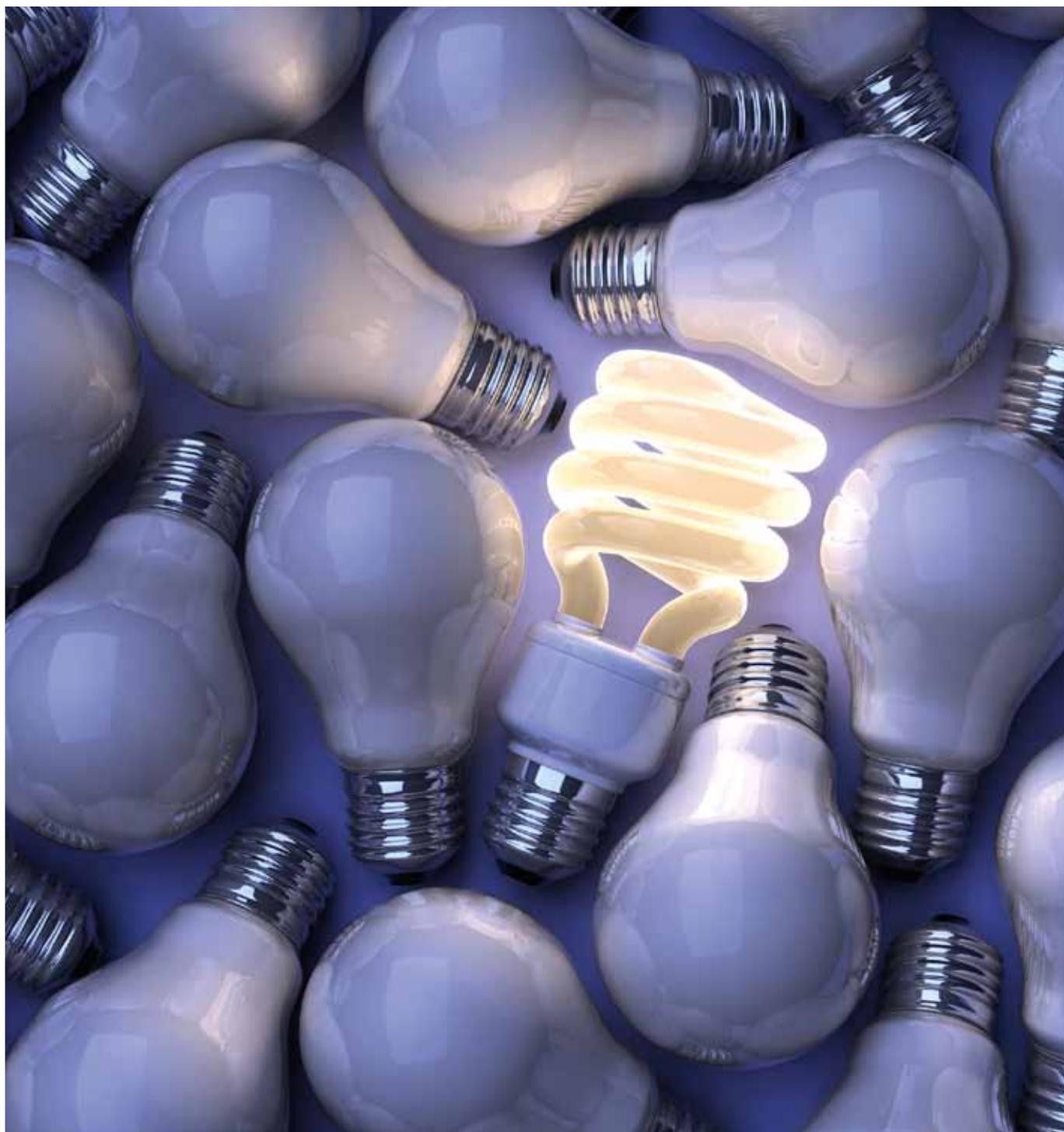
In general, Jamaican retailers have yet to pursue these international certifications. Greater awareness of these options should therefore be a priority action.

The study sheds light on the awareness, implementation, savings, barriers and incentives to energy efficiency and conservation strategies in the retail industry in Jamaica. It revealed areas where systematic changes could be made to improve the industry's contribution to the national target of reducing fossil fuel energy consumption while being financially beneficial to the retailers.

Below is a summary of recommendations based on the findings and experience during the research:

- Organise retailers and other sectors to make the most of government resources and incentives to improve energy efficiency and conservation;
- Teach retailers how to calculate their returns on investment and how to quantify their actual or estimated savings from implementing energy-efficiency measures;
- Provide a national 'community of practice' space for ideas, results and experience of failures and successes to be recorded and shared between industries;
- Improve the system of tracking retailers (which will also help many other government efforts including tax collection);
- Improve the quality and quantity of industry statistics held by the Statistical Institute of Jamaica to cover the number of retailers by parish;
- Encourage professionals in the construction industry to design for energy efficiency and with due consideration to initial and life-cycle costs; this means that the Bureau of Standards Building code needs to be promulgated and reinforced by legislation in the interest of the national consumption targets;
- Introduce and promote third party certification such as LEED which will help to increase awareness, implementation and financial benefits for retailers;

- Develop a case study locally to highlight best practices and stimulate implementation;
- Encourage retailers to publish their achievements in the implementation of energy efficiency and conservation strategies to increase knowledge within the industry.



5. CONCLUSION

Jamaican retailers are aware of energy efficiency and conservation strategies and have begun implementation to a limited extent. The removal of the barriers identified and the addition of incentives will multiply the achievable reductions in operating costs. Still, many Jamaican retailers prefer to wait and see the people, planet and profit benefits of the strategies before outlaying their capital.

The comparisons of geographically similar retail markets presented in this study serve to highlight where Jamaica may go next in terms of policies and actions to reduce fossil fuel consumption.

The economies of scale enjoyed by large overseas retail establishments might not be available for small and medium-sized retailers in Jamaica, as retail stores rarely reach sizes of over 20,000 square feet. However, the small size of the local stores should not dissuade retailers, because many smaller retailers in other countries have designed LEED and BREEAM-certified stores. Certification is also available for stand-alone stores, those placed in malls or strip centres.

In general, retailers seem interested in the strategies and the Jamaican Government should take advantage of their interest by providing the necessary assistance for wide scale implementation. Although respondents said that the Government did not show enough interest, the research uncovered Government plans to drive forward its efforts in 2011 through the Petrocaribe and Adaptation Funds.

With this in mind, two key findings of the study are particularly pertinent:

- Initial costs and lack of financial incentives are the most commonly cited barriers to introducing energy-saving strategies among Jamaican retailers – suggesting that there is considerable scope for Government-funded support schemes;
- With more than half of the sample citing 'lack of knowledge' as a barrier to energy efficiency, it is likely that a national awareness-raising and information campaign could have a positive impact on the uptake of energy-saving measures.

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ABOUT THE AUTHOR

Studies at the University of Technology, Jamaica commenced my journey into the world of Real Estate, Construction, Project and Facilities Management. Having held a Real Estate Broker licence in Jamaica and worked as Property Officer, Property Services Officer and Senior Estate Officer for approximately ten years, I enrolled at the College of Estate Management for the second time in the RICS Post Graduate Diploma in Project Management course. Later, I successfully completed the MBA in Construction and Real Estate with the University of Reading, UK.

My most significant experience with energy efficiency and conservation strategies was gained at work with the Government of Jamaica from 2007-2012 when I worked as Facilities Manager. There I designed and implemented an energy and water conservation strategy. The programme included among other projects, a simple delamping exercise to remove excess lighting fixtures throughout the premises, the installation of motion sensors in restrooms, the installation of energy efficient window films, the reallocation of base loads for chiller units and installing a water recycling plant to use the waste water from the air conditioning units for landscaping purposes.

All the efforts saw a reduction in resource consumption, which was new and exciting for a government agency that is perennially under budgetary constraints. It was very intriguing for me and I was on a self imposed mission to implement any project that could save the government money. I had discovered the link between people, planet and profit.

I have been married for eight years and have two children. We recently migrated to the United States and I am anticipating the next phase of my career. I was the recipient of a British Council of Shopping Centres (BCSC) award in 2010 and am a member of the International Facilities Management Association (IFMA).

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