# The Philippines Green Buildings Program: Developing a Market Niche for Energy Efficiency

*Noel Verdote, Terry Oliver, Peter du Pont, Lando Velasco, Chainuwat Prijyanonda,*
*International Institute for Energy Conservation, Asia Regional Office*

## ABSTRACT

The Philippines Green Buildings/Resorts Program is a completely voluntary program that relies upon the interest and commitment of building owners and managers, design engineers, non-governmental agencies, government agencies and utilities. The International Institute for Energy Conservation (IIEC) acts as program coordinator, organizing regular stakeholder meetings; providing audits of selected facilities; collecting and analyzing data from partner facilities; organizing training courses and workshops; conducting media campaigns to promote the program; and publicizing the results of the actions taken. The goal of the program is to convince building owners to invest in sustainable energy technologies in order to save money, save energy, and reduce greenhouse gas emissions.

After a pilot phase, IIEC adopted a "top-down" approach where program marketing is done through the owner and top management who then ensure "buy-in" of the project within the firm. We established Earth Day on 22 April 2000 as a target date for corporate commitments. The target date was used as a way of motivating companies to make specific commitments by a set date. We did not establish strict criteria for investment levels or return on investment, but rather left it to the companies to decide which investments would meet their internal criteria. By Earth Day 2000, 15 companies has agreed to become "Partners" in the Green Buildings/Resorts Program, and six had made pledges for specific investments in energy-efficiency upgrades in their facilities.[1] The development of this program was funded by the U.S. Agency for International Development with the goal of stimulating technology transfer and reducing greenhouse gas emissions.

## INTRODUCTION

One of the major barriers to promoting energy efficiency and renewable energy in a developing country is creating a niche market for these sustainable energy products. The challenge lies in searching for market leaders who will invest and at the same become catalysts for further introductions of the technologies and practices. It is in this context that the International Institute for Energy Conservation (IIEC) developed the Green Buildings/Resorts Program in the Philippines. It is a completely voluntary program that relies upon the interest and commitment of building owners and managers, design engineers,

[1] The term "partners" refers to companies that commit to invest in energy-efficiency upgrades as well as to trade associations and trade allies (e.g., manufacturers, suppliers, energy service companies) that agree to cooperate with the program.

non-governmental agencies, government agencies and utilities. The program is partially modeled on the U.S. EPA's Green Lights Program, in which corporations were asked to commit to improve the lighting efficiency of their facilities in exchange for marketing support and the imprimatur of the U.S. EPA's logo. In the Philippines Green Buildings/Resorts Program, IIEC acts as program coordinator, organizing regular stakeholder meetings; providing audits of selected facilities; collecting and analyzing data from partner facilities; organizing training courses and workshops; conducting media campaigns to promote the program; and publicizing the results of the actions taken. The goal of the program is to convince building owners to invest in sustainable energy technologies in order to save money, save energy, and reduce greenhouse gas emissions. Although the program focuses on energy efficiency in buildings, it also has a component aimed at convincing resort owners in Philippines vibrant tourist industry to invest in renewable energy and energy-efficiency measures in their facilities.

The paper begins by discussing the opportunities for introducing sustainable energy technologies into the Philippines building and resort sectors. It includes an in-depth analysis of how IIEC used its position as an "honest broker" to rally interest for the program among the many private sector trade associations involved in the design, construction, maintenance, and operation of buildings, as well as among the hotel and resort operators. It will also describe the collaborative process that evolved with the private sector, investors, non-governmental organizations (NGOs), electric utilities, local and national government agencies, and donor agencies. The paper concludes with a discussion of lessons learned and recommendations on how the project can be improved in the future and perhaps replicated in other countries.

## Background

In the first phase of the project, the International Institute for Energy Conservation (IIEC) developed a demonstration project called the Green Malls Program, in collaboration with the Demand-Side Management (DSM) unit at MERALCO, the electric utility serving Greater Manila. The Green Malls effort focused on local and international energy service companies (ESCOs) and mall owners to perform building energy audits of several facilities. IIEC conducted audit training for Meralco and local ESCO staff; met with a number of local mall owners to promote the Green Malls concept; conducted energy audits of three large shopping malls; and generated a high level of interest from one mall owner to pursue further energy efficiency improvements.

However, one year into the program, MERALCO, faced with uncertainty over the restructuring of the utility sector, reconsidered its corporate commitment to DSM and backed out of the Green Malls Program. IIEC was forced to reconsider the approach and move away from reliance on a single utility/DSM partner and focus on enlisting private sector commitments. IIEC thus decided to reconfigure the program as a Green Buildings/Green Resorts Program, position itself as the program operator, focus on soliciting corporate commitments from private sector partners (an approach similar to that used in the US Environmental Protection Agency's successful Green Lights Program), and enlist support from government, utility, and non-governmental organizations (NGOs) as appropriate.

A key lesson learned in the Green Malls pilot program was that selling the energy efficiency idea to someone in the bottom or middle of the company hierarchy was ineffective: progress on projects stalled or projects were shelved because the original contact could not effectively justify the project to upper management. For the Green Buildings Project, IIEC decided to change its strategy to a "top-down" approach where "selling" is done through the owner and top management who then ensure "buy-in" of the project within the firm.

**Current Status of Buildings in the Philippines**

Commercial buildings in the Philippines are one of the most electricity-intensive sectors in the Philippines. In a study conducted by the International Institute for Energy Conservation (IIEC) and the Preferred Energy, Incorporated (PEI) in 1998, the total monthly average consumption of the top 30 commercial buildings and shopping malls in the Metro Manila and the suburban areas alone amounted to 18.4 million kWh. It was further argued in the same report that a mere 10% reduction in electricity consumption by these commercial buildings could translate to equivalent savings of $0.71 million per year. Likewise, efficiency improvements in commercial buildings will help the utility company avoid, or at least delay, the construction of new generating plants in as much as the operating hours of these commercial buildings already coincides with the system peak of the local utility, Meralco.

In a related survey by the Energy Specialist Company, Inc. (ESCO), more than 500 commercial buildings in the central business district of Makati more than 10 years old. Retrofit of these buildings posses a greater potential for energy savings. Of these commercial buildings 30% to 40% have a CFC based central plant and these pose more compelling reasons to have these plants replaced with non-CFC chiller plants. Table 1 shows the potential for efficiency improvements in lighting systems in commercial buildings in Metro Manila. Observed best practice buildings have a lighting density one-third to one-quarter the lighting density of best practice buildings. Significant, although slightly smaller (in percentage terms) savings potential were seen for

**Table 1. Energy Performance of Lighting Systems in Metro Manila Buildings Compared to Best Practice**

| Building Location | Lighted Area (sq. m) | Installed Lighting (kW) | Watts/sq. m. |
|---|---|---|---|
| Ortigas | 54,682 | 1,004 | 18.4 |
| Makati | 19,500 | 306 | 15.7 |
| Quezon City | 26,935 | 413 | 15.4 |
| Best Practice | | | 4.2 |

This table represents results of more than 20 audits conducted by Energy Specialist Co., Inc. in Metro Manila. "Best Practice" represents the best performance observed in terms of W/sq. m. in this sample of building audits. The sample was controlled to account for lighting levels, and only buildings with a lighting level in the range of 350 to 500 lux were included.

Energy efficiency improvements are no longer a new concept to most building and facility managers, but the practices vary, and implementation is in most cases sporadic. Some

building owners for instance, institute no-cost interventions by altering the operating hours of the major equipment. Others resort to minimal cost measures like replacing existing lamps with energy efficient ones. Still others implement sophisticated efficiency improvements that are capital intensive but have very attractive returns. For most existing buildings, and even new building constructions, however, even a modest part of the energy efficiency improvement savings potential or renewable energy opportunities are not realized. This is because owners of existing buildings invest minimally and opportunistically and new construction design services are provided by equipment suppliers resulting in a piecemeal approach to energy efficiency instead of the total energy solution through integrative approach.

**Barriers to Energy Efficiency**

Barriers to greater energy efficiency improvements in the building sector are numerous. These include the following:

- Filipino cultural reluctance to try new technology. This highly risk averse mentality is prevalent, i.e., that unless the technology is proven to function effectively in a local setting no one else would dare adopt it.
- Face saving efforts by facility engineers, project consultants and building managers for failing to identify a more reliable, efficient, better and more economical equipment and devices at the onset.
- Resistance from reputable consultants, design professionals, project managers, suppliers and contractors whose fees are sometimes tied up with project cost. The same thing is true to some developers whose compensation package does not offer incentives for efficiency improvements.
- Lack access to project financing to undertake extensive energy efficiency work on performance base contracts.
- Top management belief that budget for core business is unnecessarily channeled to facility improvement (considered a "wish list" rather than an investment opportunity, if not directly affecting/compromising life and safety).
- Low credibility of facilities personnel to the higher management (including the inability to "sell" project proposals to top management).
- Top management low regard for facilities personnel (looked down as housecleaning crew with pliers and screwdrivers, instead of partners for improving workplace quality).
- Lack of energy professionals who could offer packaged energy solution instead of piecemeal advice.
- In most new building constructions, first-cost criterion prevails over life-cycle cost of the building (because of misaligned incentive schemes and equipment seller provided design services).
- Lack of effective government policy on commercial buildings end-use efficiency.

### Latent Private Sector Interest

Despite the above deficiencies resulting in treating energy efficiency as a "one-off", "sporadic", "crisis-driven" reaction, there is now an increasing social consciousness among most big businesses in response to public outcry for greater social responsibility – to protect the environment, in general. This, along with the fact that efficiency investments in the buildings presents an opportunity for financial gain to their owners and to the Philippines in general, gave IIEC the impetus to push for the Green Buildings initiative. Aligning the Project with the Earth Day 2000 celebrations gave additional credence to the Project, which now enjoys an environment identity. This provides additional motivation beyond the financial benefits of energy efficiency investments and most conveniently, a deadline for investment decisions.

## Program Organization and Structure

### Program Goals and Organization

The goal of the Green Buildings/Green Resorts program is to convince building owners to invest in sustainable energy technologies in order to save money, save energy, and reduce greenhouse gas emissions. IIEC acts as program coordinator, organizing regular stakeholder meetings; providing audits of selected facilities; collecting and analyzing data from partner facilities; organizing training courses and workshops; conducting media campaigns to promote the program; and publicizing the results of the actions taken. During its first 18 months, the program had two broad phases:

**Initiation and Earth Day Campaign.** During this phase, which began in June 1999, IIEC marketed the program to building and resort owners and managers, as well as stakeholders (industry associations, manufacturers and distributors of energy-efficient equipment and services, and environmental NGOs). IIEC established Earth Day on 22 April 2000 as a target date for corporate commitments. The target date was used as a way of motivating companies to make specific commitments by a set date. IIEC did not establish strict criteria for investment levels or return on investment, but rather left it to the companies to decide which investments would meet their internal criteria. By Earth Day 2000, 15 companies has agreed to become "Partners" in the Green Buildings/Resorts Program, and six had made pledges for specific investments in energy-efficiency upgrades in their facilities.[2] The program focused primarily on energy-efficiency retrofits in existing commercial buildings because of the large potential savings and because of the need to achieve quantifiable greenhouse gas reductions by December 2000.

[2] The term "partners" refers to companies that commit to invest in energy-efficiency upgrades as well as to trade associations and trade allies (e.g., manufacturers, suppliers, energy service companies) that agree to cooperate with the program.

**Consolidation and Network Development.** This phase will last from May through December 2000, and will culminate with announcement of program achievements during the Philippines Energy Week celebrations in December 2000. During this phase, IIEC will focus on three areas. Working with partners, we will provide technical assistance on the potential for savings, collect data on building energy use and savings potential, and coordinate a monthly forum for exchange of information and program progress. In order to build capacity, IIEC will organize a series of workshops to provide ongoing training and media exposure to the program. The training workshops will include project development and finance; overview of energy-efficiency potential in commercial buildings; DOE-2 simulation as a tool for modeling energy savings potential; and potential for environmental technologies to be deployed in combination with energy-efficiency technologies to develop a truly "Green Building." Finally, IIEC is developing a media strategy for the Green Buildings/Resorts Program. The campaign includes television interviews, a documentary video, and feature newspaper articles. To leverage its limited resources, IIEC is working with the partners' media departments to develop media strategies to raise local awareness of the program. In addition, we are using each workshop as an opportunity to keep the program in the local media.

## IIEC's Role

The International Institute for Energy Conservation (IIEC), an affiliate of the Civil Engineering Research Foundation (CERF), is an international non-profit non-government organization founded in 1984 to accelerate the global adoption of energy efficiency policies, technologies, and practices in order to enable an economically and ecologically sustainable development. Its strategic focus is on end-use efficiency, renewable energy and climate change. IIEC began working in the Philippines in 1992 and has a permanent office in Manila, with a Regional Office in Bangkok established in 1989 (other regional offices are in Washington, London and Johannesburg).

For the Earth Day 2000 – focused on important environmental challenges facing the entire planet: energy use and climate change – IIEC, through its Green Buildings Program, asked building owners to identify and commit to energy efficiency or renewable energy investments that meets their businesses' own return on investment requirement. The goal is to show by example and experience that those investments in sustainable energy or efficiency technologies save money, save energy, and help save the earth. It is also the commercial building owners' contribution to the sustainability of the Philippine environment and for showing the way for other Philippine companies. The Green Buildings Program is sponsored by USAID as part of the U.S. commitment to help the Philippines find local solutions that contribute to the global fight against climate change and global warming.

IIEC's role is that of a catalyst, working to generate interest in the program among the key players in the industry and, most importantly, to convince commercial building owners and managers to join the project and invest in energy-efficiency improvements. IIEC also acts as the information and technology broker, helping commercial building owners and managers to locate practical information about what products and services are commercially available from trade allies (i.e., suppliers, manufacturers, designers, etc.). In this role, it is important that IIEC be perceived as completely independent and does not represent any

specific product or engineering services firm.

## Program Strategy

In carrying out the tasks required to achieve its goals, IIEC followed a four-pronged approach, (1) recruitment, (2) motivation, (3) training, and (4) technical support. The subsequent sections illustrate how the various components of the strategy adopted reinforce each other in order to persuade top management to say "yes" and support the Project.

**Recruitment.** IIEC recruits building owners and managers, and sponsors and trade allies. Sponsors are those companies, professional organizations or non-government organizations which IIEC taps as partners since they have the capabilities to influence or carry out the work which IIEC might be inhibited to do. Trade allies are the supplier or manufacturers of energy efficiency technologies or service providers. They are mostly Philippine-based firms that can cater to the Green Buildings Program participants' efficiency improvement needs.

The most difficult task is to recruit the participants to the program, i.e., building owners who can commit to make the necessary energy efficiency investments and make sure that they are realized. In most cases, commitment is easier said than done. However, the "real" commitment -implementation combined is hard to push especially if energy efficiency is not one of the priority areas for investment.

**Motivation.** As in any other selling activity, a major hurdle for IIEC was to figure out how to generate a level of excitement and urgency in order to convince building owners and managers to invest in energy efficiency. We did some "social selling," tapping the building owners' social responsibility sense. IIEC highlighted known climate related environmental problems (for instance, the "El Niño", locally perceived to be associated with drought and the "La Niña", locally associated with record flooding) and suggested that as good corporate citizens, the building owners must do their share in helping preserve the environment. We created a "sense of urgency" by leveraging the global celebration of Earth Day 2000 in April, using it as the deadline for investment commitments. Businesses that joined the Project earned additional marketing mileage as industry leaders. On April 23, 2000, during the Earth Day 2000 program for the Green Buildings Project, building participants made public announcements of their energy efficiency project investment commitments and how they planned to achieve them.[3] Other "deadlines" will be created to maintain the urgency illusion culminating in National Energy Week during December, when achievements will be announced.

To complete the selling formula, IIEC stresses monetary benefits indeed accompany investments in energy efficiency improvements. We do this by insisting that all financial calculations be stated as Internal Rate of Return. This reinforces the investment image we are seeking. We leave it to others to calculate pay-back. IIEC asks the building owners to invest

---

[3] Earth Day is really celebrated on April 22. However this falls on a religious event, Black Saturday, which is somber, not celebratory so the Philippines, as a strongly Catholic country, has moved local Earth Day events to April 23. This actually places the real time of the event coincident with April 22 in the US because of the International Dateline.

in efficiency improvements that make economic sense to them, i.e., those projects that satisfy their internal investment criteria.

A similar pitch is used to win support from sponsors and trade allies. For instance, during the Earth Day month of April, IIEC in partnership with Ayala Foundation, the ABS-CBN, and some other NGOs organized a weeklong sales event and exhibit of energy efficiency equipment, mostly home appliances, to generate greater energy efficiency awareness and patronage of the general public. Similar activity will be conducted by a sponsor in the southern part of the Philippines (care of the Cagayan Electric Power and Light Company, Inc. or CEPALCO) in collaboration with trade allies in their region. For the trade allies, this would mean revenue from sales of their products; for the mall owner, revenue from leased space for use during the sales event/exhibit. At the same time, the sponsors and the trade allies will enhance their reputation as environment-friendly enterprises and as good corporate citizens.

**Training.** The training component is one of the services that IIEC provides aimed at capacity building for the participating institutions. One such training held this year, specifically for commercial buildings, was the Workshop on Energy Efficiency Project Development, held on February 3 to 4, 2000. Meralco provided the venue and co-hosted the workshop under its Customer Services Program.

The workshop equipped participants to "package" energy efficiency project investments for their respective companies in time for Earth Day 2000. Representatives from potential building partners participated. Participants included senior finance officials in charge of reviewing and approving project proposals and senior technical officials in charge of identifying and preparing project investments.

Another workshop planned for this year is targeted at developers and design professionals. The training objective is to build capacity for an integrated design approach through the use of simulation tools (such as the DOE-2 building software) that will help determine energy-use implication of design stage options. This need was identified during the course of meeting with various firms involved in the building industry. Additional workshops will include an overview of the potential for energy efficiency in commercial buildings (in cooperation with the Philippines Department of Energy) and the scope for employing environmental technologies in combination with energy-efficiency technologies to develop a truly "Green Building."

**Technical Support.** Because we wanted to focus on companies committed to implementing efficiency projects, and because it is our experience that there is an insatiable demand in the Philippines for free advisory services but no evidence that these services result in any action, IIEC offered technical assistance only to the building owners that made a firm commitment to investing in energy efficiency improvements. One gauge we used was willingness of the firm to sign a memorandum of understanding with IIEC.

IIEC offered technical assistance in several different forms. For instance, IIEC reviewed the architectural plans for the new national headquarters building of the United Architects of the Philippines (UAP) using DOE-2 energy simulations. The simulation indicated that as much as 40% of the base case electricity consumption could be reduced by modifying the original design to incorporate an all water-cooled chilled water plant (instead

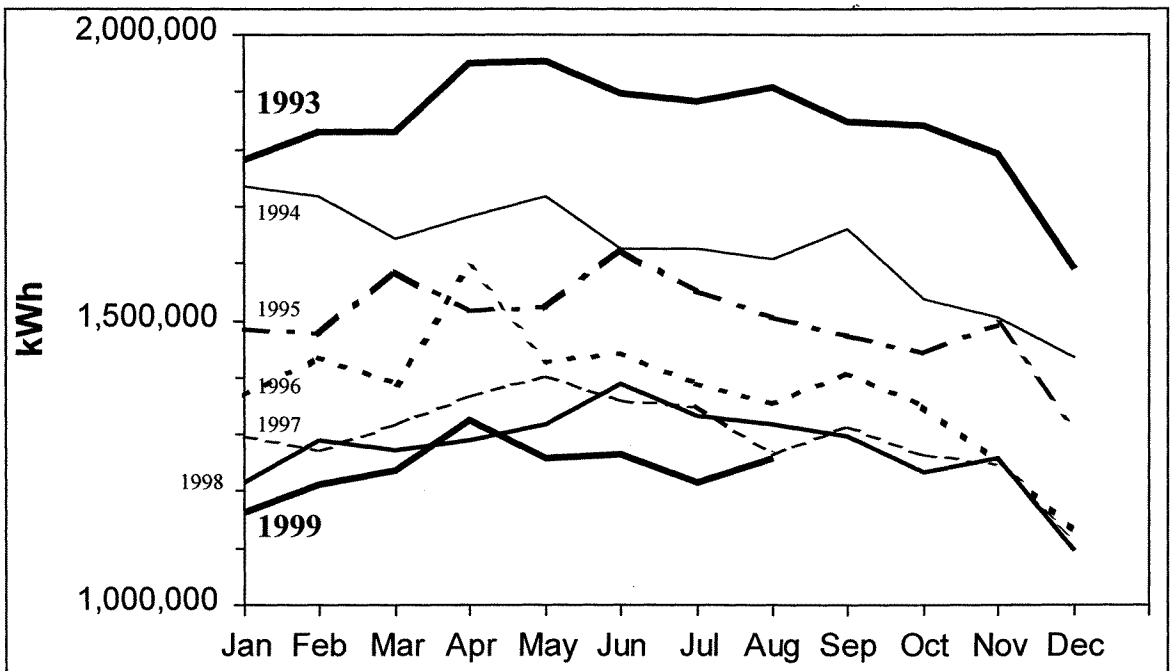
of a hybrid air conditioning system) and spectrally selective low-E double glazing (instead of tinted single pane glass).

Another form of service was working with the in-house building operations staff to identify and define the projects that make the most economic sense for their businesses. This included site surveys, analysis of utility bills and electrical end-uses, and identification and prioritization of energy conservation opportunities. The key for this service was working with in-house staff. If we could not get in-house staff to lead, no service was provided. In cases where building partners required more extended, on-site assistance, IIEC recommended local consulting or engineering firms to assist the client.

IIEC also provided partners with access to published information on energy conservation options, case studies from its 3,000-volume library in the Bangkok office, through its extended network of international experts, and through Internet searches for useful information. In particular, we found the Green Building partners were persuaded and motivated by well-documented case studies of successful retrofits that provided first-hand proof their project could succeed. One particularly effective and well-documented case study was one of our own - the retrofit of the Asian Development Bank (ADB) Headquarters. This success of this retrofit in Manila proved a crucial marketing tool in convincing building owners that the energy-efficiency retrofits could provide substantial and verifiable cost reductions. During the course of Program, ADB cooperated to allow a site visit so that local partners could see the energy-efficiency retrofits first-hand. Even though the ADB retrofit occurred before the Green Buildings program and the building thus was not a program participant, we highlight the case study in Figure 1 and Table 2 because of its significant demonstration impact on the program and its high visibility in the energy-efficiency community in Asia.

**Table 2. Costs Savings from Asian Development Bank Retrofit**

| **Energy Efficiency Measure** | **Annual Savings, US$** |
|---|---|
| Chiller retrofit (replaced with smaller units) | $ 219,000 |
| Controls automation | $ 237,474 |
| Chilled water pump replacement (down-sized) | $ 22,095 |
| Condenser water pump replacement (down-sized) | $ 51,239 |
| Cooling tower improvement (cooling blade pitch adjustment) | $ 8,168 |
| Lighting improvement (mostly, T8 32-W lamps + electronic ballast) | $ 296,842 |
| Reconfigure transformers | $ 14,842 |
| Modify UPS (mostly operational intervention) | $ 12,863 |
| Load balance and power factor improvement | $ 46,000 |
| Total Annual Dollar Savings | $ 908,523 |
| Energy Savings 7,868 MWH/year | 30,108 MWH Total |
| Total Investment | $ 3.28 Million |
| Simple Payback | 3.6 years |
| Internal Rate of Return | 25.6% |




In 1993 IIEC conducted an energy audit of the Asian Development Bank Headquarters as a follow-on to training on Demand-Side Management we had provided to Bank staff. The audit, conducted under contract to the Bank and using the services of IIEC and Supersymmetry Services, resulted in a $3million retrofit. The measures recommended and implemented included a number of lighting and hvac efficiency improvements. The retrofit took over 4 years to complete thanks to the need to reconfigure every 2x4 fixture to accept standard-length lamps. Changes in energy use over time were tracked by the ADB and displayed in the graph below. The results for each measure were also calculated by ADB and are displayed in Table 2.

**Figure 1. Retrofit of Asian Development Bank Headquarters**

## Lessons Learned

### Recruitment Process: Top-Down Approach

The Green Lights Program of the Environmental Protection Agency (Kwartin 1992) demonstrated the effectiveness and importance of selling the project from the top. Once top management supports and approves the company's participation in a project, the energy efficiency projects identified are given the desired priority status. Budget approval for the project will be accelerated and the traditional bureaucratic practices and turf war will be minimized, if not eliminated. We found this to be the case with the partners we recruited for the Green Buildings project. In almost all cases, our initial meetings were with top management, and this facilitated project commitments. In one case, however, we started

using a bottom-up approach through a contact in the company's engineering division. Without a top-down directive to participate in the Green Buildings Program, the collaboration failed when company lawyers insisted on an overly restrictive and unacceptable liability clause in the partner's MoU. We also learned that top management sponsorship should be coupled with middle management (i.e., senior technical official in charge of project implementation) buy-in since middle management will be the ones who will be the "enablers" of the project.

**Early Start for the Green Buildings Project to Take Advantage of Budget Cycle**

Most businesses allocate budget for project investments during the preceding year. This is why it is often hard to obtain approval for capital intensive projects not previously allocated. It would have been better if the Green Buildings Project were started early on last year so that projects for investment this year could have been budgeted by participating firms. More often than not, companies do not want to go through the hassles of having one portfolio of energy efficiency project be financed separately by a third party. This is because these big corporations have established good credit ratings with friendly banks and can obtain funds at times without collateral.

**Internal Selling of the Project**

Energy efficiency projects often end up shelved because the in-house technical manager (the enabler and project proponent) fails to identify project stakeholders. Further, they have difficulty selling the full benefits of the project in a way that matches the needs of the various audiences. First, one has to identify which groups to sell the project to and have them involved from the onset in order for these same groups to have a sense of "ownership". These groups include the financial officers who will approve the budget and must be convinced that the project will be profitable. Then the end-users the buy-in of whom is very crucial to the success of the project implementation must also be identified. Another group is the top management (e.g., Chairman, CEO, COO), since they have the authority to reject or demand support for the project). Next, identify their needs and sell the benefits of the projects that match those needs. Following the dual concern model, it has to be a "win-win plus synergy" situation among the various groups within the organization. This was the rationale behind bringing participants from the technical as well as the finance departments for the Project Development Workshop.

**Leveraging on an External Global Fanfare**

Scanning the environment for opportunities to capitalize on, IIEC was able to identify the parallel objectives between Earth Day 2000 and the Philippines Green Buildings Program. One of the primary themes of Earth Day 2000 was to promote "...clean and renewable energy." The Green Buildings Program was positioned as part of the Earth Day 2000 celebration, which, for the past few years were celebrated in the Philippines only by NGOs and Foundations, as a relatively small-scale and marginal event. In August 1999, IIEC began working with the local NGO network that was coordinating the Philippines Earth Day

celebrations. Our efforts were linked to our own objectives. In order to convince building owners that there was something at stake in Earth Day, it had to be a larger event. To make it larger it had to branch out from its NGO roots to include the business community. To attract the general business community, there needed to be a retail event. These three ideas formed the basis for turning Earth Day into as we told businesses, "a three ring circus." This in turn fed back to potential participants. As they saw Earth Day looming larger, their interest in creating the efficiency projects that were their ticket to entry grew stronger. At the same time it was a very strong motivating factor for building owners/ managers to join the Project: it touched their social responsibility as citizens of the earth.

### Collaborative Processes: Win-Win plus Synergy

The Philippines Green Buildings Program was designed to draw on the combined strengths of the sponsors[4], trade allies[5], NGOs[6] and the building participants[7] themselves.

IIEC was able to use its role as a NGO and "honest broker" to bring together various groups under one unifying goal of helping saving money and saving the environment. The strength of this arrangement is that when needed, IIEC can tap the help/services of any or a combination of the industry players. For instance, the NGO network was requested to promote the Green Buildings Project and Earth Day celebrations through its outreach arm. The sponsors hosted activities (e.g., Ayala Foundation sponsored the week-long exhibit and sale prior to Earth Day) and provided technical assistance to building participants (e.g., CEPALCO conducted energy audits and made recommendations as part of its customer service operations). Professional organizations provided Task Force volunteers who can be tapped for independent opinion. Lastly, suppliers and/or manufacturers contributed by putting up exhibits for the Earth Day events. All told, these various groups, not to mention the building participants themselves, gained publicity mileage and recognition as front-runners in the industry.

## Project Status Highlights

### Activities leading to Earth Day 2000 celebration

Beginning in the 4th quarter of 1999, IIEC held a series of meetings, round-table discussions, and workshops with building and resort owners, trade allies (e.g., suppliers and manufacturers), sponsors (e.g., utilities and private sector firms), NGOs, and government officials to disseminate information and recruit participants to the Green Buildings Program.

**Workshop on "Energy Efficiency Project Development".** On February 3 to 4, 2000, IIEC held a workshop in and co-sponsored by MERALCO and participated by potential building

[4] Foundations, professional organizations, utility companies, and government agencies.
[5] Suppliers and manufacturers of energy efficiency and renewable energy products, design and consulting firms.
[6] Non-governmental organizations (NGOs) working on energy and environmental issues.
[7] Mostly corporations that can be persuaded to invest their own funds in energy-efficiency improvements.

participants. The workshop was aimed at helping equip participants in "packaging" energy efficiency project investment/s for their respective companies in time for Earth Day 2000.

**Energy Efficiency and Renewable Energy Exhibit.** The exhibit and sale focused on energy-efficient home appliances (lighting, air-conditioning, refrigerators, etc.), selected building materials/technologies (insulation), and renewable energy equipment (e.g., solar water heaters). The exhibit highlighted the importance of reducing fossil fuel use and aimed to create greater awareness among consumers about the benefits of energy efficiency. The event also included an exhibit with photographs taken by Philippine NGOs that depicted environmental problems and the state of the earth.

**Earth Day 2000 Celebration.** IIEC joined with the Ayala Foundation to host an Earth Day 2000 celebration for the Green Buildings Project in the Glorietta Mall. The theme of the program was *"Living in Harmony with the Environment."* The program had two components: participants in the Green Buildings Program made announcements of their specific investments in energy efficiency and signed MoU with IIEC. At the same ceremony, a number of merchants in the Ayala Center Mall were given environmental awards for consistently practicing proper solid waste management.

**Program Consolidation.** Following the Earth Day event in April 2000, IIEC worked to provide technical assistance to partners, develop a database of energy use and savings potential in partner buildings, overcome corporate barriers to investment in energy efficiency, provide technical assistance through a series of workshops, and develop a campaign to keep the program in the local media. The seed grant for the Green Buildings/Resorts Program runs through December 2000. Recognition of participants on the results of actions that their buildings and businesses have undertaken to save energy or to use renewable resources will be made during the National Energy Week in December 2000. IIEC is also working with local organizations to try to ensure the long-term viability of the program beyond the end of 2000.

## Conclusions

After a pilot phase, IIEC adopted a "top-down" approach where program marketing is done through the owner and top management who then ensure "buy-in" of the project within the firm. Scanning the environment for opportunities to capitalize on, IIEC was able to identify the parallel objectives between Earth Day 2000 and the Philippines Green Buildings Program. One of the primary themes of Earth Day 2000 was to promote "...clean and renewable energy." IIEC established Earth Day as a target date for corporate commitments. The target date was used as a way of motivating companies to make specific commitments by a set date. IIEC did not establish strict criteria for investment levels or return on investment, but rather left it to the companies to decide which investments would meet their internal criteria.

We found the Green Building partners were persuaded and motivated by well-documented case studies of successful retrofits that provided first-hand proof their project

could succeed. One particularly effective and well-documented case study was one of our own - the retrofit of the Asian Development Bank (ADB) Headquarters. This success of this retrofit in Manila proved a crucial marketing tool in convincing building owners that the energy-efficiency retrofits could provide substantial and verifiable cost reductions.

IIEC was able to use its role as a NGO and "honest broker" to bring together a variety of groups under one unifying goal of helping saving money and saving the environment. The strength of this arrangement is that when needed, IIEC was able to tap the help/services of different combinations of stakeholders. For instance, IIEC worked with the Philippines NGO network to promote the Green Buildings Project and Earth Day celebrations through its outreach arm. Corporate partners hosted activities and provided technical assistance to building participants. Professional organizations provided Task Force volunteers who can be tapped for independent opinion. Lastly, suppliers and/or manufacturers contributed by putting up exhibits for the Earth Day events. All told, these various groups, not to mention the building participants themselves, gained publicity mileage and recognition as front-runners in the industry.

## References


Energy Specialist Co., Inc. 2000. *Prospects of an Energy Service Company in the Philippines.* Presentation at the Energy Efficiency Project Development Workshop, Manila, February.

Gonzaga, F. 2000. *Prospects of an Energy Service Company in the Philippines.* Paper presented at the Energy Efficiency Project Development Workshop, Manila, Philippines, February 3-4.

IIEC ( International Institute for Energy Conservation) and Preferred Energy Inc. 1998. *The Market for Energy Efficiency Technologies and Services in the Philippines.* Washington, DC: IIEC, prepared for the U.S. Export Counsel for Energy Efficiency. September

Kwartin, Robert. 1992. The Green Lights Program: Progress to Date and Lessons Learned. In *Proceedings of the ACEEE 1992 Summer Study on Energy Efficiency in Buildings.* Vol. 6: 6.135-6.146. August.


### Acknowledgments


The authors would like to acknowledge the support of the U.S. Agency for International Development, which funded this work as part of its global effort to stimulate technology transfer and reduce greenhouse gas emissions.