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# INFORMATION AND EDUCATION

## ENERGY EFFICIENCY TOOLKIT – TECHNICAL GUIDE

**JULY 2015**

This document was prepared for the United States Agency for International Development (USAID) by ICF International under Cooperative Agreement AID-OAA-L-11-00003. The contents are not the responsibility of USAID and do not necessarily reflect the views of the United States Government.

# INFORMATION AND EDUCATION

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### **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

# ACKNOWLEDGEMENTS



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## LIST OF ACRONYMS

APPLES	Alleviation of Poverty through the Provision of Local Energy Services
EnMS	Energy Management System Standards
GHG	Greenhouse Gas
DSM	Demand Side Management
kW	Kilowatt
NGO	Non-governmental Organization
PIEPP	Philippine Industrial Energy Efficiency Project
UNEP	United Nations Environment Programme

## VISUAL REPRESENTATION OF SECTORS

Examples of information and education projects and programs from around the world have been included throughout this guide. Links to full descriptions of these projects are listed in the [Project Examples Resources](#) section of the guide. The icons below are used to indicate which sector these projects target.



**Industrial**



**Commercial and  
Institutional**



**Residential**



**Agricultural**



**Transportation**

## OVERVIEW

One of the challenges in deploying energy efficiency as a clean development resource in developing countries, even when it is cost-effective, is the lack of awareness surrounding both energy-related issues and the benefits of implementing energy efficiency measures. Raising general public awareness and providing specialized technical information on energy efficiency is critically important to creating market value for energy-efficient goods and services. For example, providing training on the installation and benefits of energy-efficient boilers can create a new market for this type of technology while reducing energy costs, improving energy reliability, generating economic activity, improving comfort, and increasing productivity and property values for building owners and occupants.

Multiple surveys demonstrate that energy end-users routinely underestimate the benefits of energy saving technologies while overestimating their costs. Many jurisdictions around the world have sought to reduce this 'information gap' through educational measures ranging from general public awareness campaigns to more targeted technical trainings, pilot projects, and by leveraging professional and industry networks within key sectors (also called "sector networks"). The most effective applications of such measures work in tandem with other energy efficiency implementation approaches to achieve quantifiable results. For example, efficient products must be available in the market, along with the underlying infrastructure such as testing and labeling methods, so that information and education efforts can have actionable outcomes.

Encouraging energy efficiency through information and education helps expand the availability of energy services to domestic, commercial, and industrial customers and ensures that these services are delivered efficiently by managing energy demand growth and reducing the amount of new generation required to meet future needs. Funds invested in energy efficiency also create new employment opportunities, and support overall economic growth through direct investment as well as reinvestment of energy bills savings.

Providing information on energy-efficiency encourages changes in purchasing decisions and reduces the consumption of energy, which is often generated through resource intensive and polluting processes. This shift can help mitigate greenhouse gas (GHG) emissions and can help manage risks related to climate change, such as drought negatively impacting the ability of hydropower plants to generate electricity.

Through the approaches described in this technical guide, energy users can become better informed about the negative health impact of pollutants associated with traditional forms of energy and the positive impact energy efficiency can have on improving indoor air quality, nutrition and food safety (due to improved refrigeration), and the reliability of health infrastructure.

## TARGET AUDIENCES

Some implementation approaches for energy efficiency information and education are better suited for specific audiences. Who would you like to help inform and educate about energy efficiency?

### General Public

- See [General Awareness Campaigns](#)
- See [Demonstration Programs and Pilot Projects](#)

### Management and/or Employees at Companies

- See [Targeted Awareness Campaigns](#)
- See [Organizational Energy Management Systems](#)

### Local Community

- See [Local Energy Efficiency Information Centers](#)
- See [Demonstration Programs and Pilot Projects](#)

### Existing Energy Users

- See [Information through Demand Side Management \(DSM\) Programs](#)
- See [Demonstration Programs and Pilot Projects](#)

### Trade Workers

- See [Education and Training](#)
- See [Sector Networks](#)

### Government Contacts

- See [Demonstration Programs and Pilot Projects](#)
- See [Sector Networks](#)

### Students

- See [Education and Training](#)
- See [Demonstration Programs and Pilot Projects](#)

## IMPLEMENTATION APPROACHES

### GENERAL AWARENESS CAMPAIGNS

General awareness campaigns encourage the adoption of energy efficiency by helping consumers understand issues related to energy production, conversion, consumption and the associated climate change impacts of each. Effective communication programs recommend energy-saving actions and provide information to consumers about benefits related to cost savings and resource conservation. Promotional campaigns are integral to the implementation of energy efficiency because they build public support through understanding and should be a first step in any energy efficiency policy or program scheme.

Such campaigns can take a number of forms including events such as workshops, seminars, energy bill inserts, informal channels such as word of mouth, and mass media campaigns through television, radio and internet.

The target for general awareness campaigns is the general public. However, successful implementation can also involve leveraging the help of energy-efficient product and service companies, government organizations, retailers, trade associations, advertising agencies and communications companies.

### TARGETED AWARENESS CAMPAIGNS

This type of campaign targets energy users and managers in particular sectors, such as industrial plant operators and commercial building managers. It functions in much the same way a general awareness campaign does with the exception that promotional and educational materials are tailored towards specific market audiences, with solutions and benefits specific to their concerns.

As with general awareness campaigns, targeted campaigns can take a number of forms ranging from seminars to work of mouth. However, the more targeted the campaign, the more targeted the delivery media should be; this approach reduces costs and improves the efficacy of the campaign.

#### Project Example 1: Initiative EnergieEffizienz (Germany)

##### TARGETED SECTOR:



##### SUMMARY

The Initiative EnergieEffizienz is a nationwide platform in Germany that provides consumers in private households, trade and industry, and service sector with comprehensive information and advice about the efficient use of electricity. One example of this information and advice is internet-based help in selecting energy-efficient office equipment.

In 2007, the Initiative worked with thousands of retail traders, electricians, and customer advice centers nationwide. These partners received a wide range in informational material to help their customers at the point of sale. Other sales activities included highly effective media and advertising campaigns.



In order to implement a successful awareness campaign, it is important to target several audiences:

- Management and technical personnel within targeted sectors and firms
- Trade associations and professional societies
- Educational and research institutions such as universities
- Manufacturers and service providers of energy-efficient products and services

For an example of a targeted awareness campaign tailored to a Green Freight program in Asia, see Project Example 7 in the [Additional Project Examples](#).

## LOCAL ENERGY EFFICIENCY INFORMATION CENTERS

Local energy efficiency information centers provide focal points for specific information to energy consumers looking to implement energy efficiency measures. They are a central point of contact for the public to access technical advice and resources on projects as well as useful contacts such as installers, manufacturers, relevant authorities, and funding sources. In some countries, these centers also provide policy advice to governments and implement pilot projects.

In those jurisdictions where the cost of establishing centers may be prohibitive, minimal practical information such as lists of retailers, installers, average costs, and technical guides can be provided through centralized websites.

Note that it is not necessary to create a physical center, even when it is an affordable option. A local energy efficiency information center can be integrated as part of a university, research institution or government agency office, and be focused entirely on distributing information and advice online.

The target audience for information centers is consumers, but centers can also provide specialized advice for businesses. As a central point of contact, the centers also maintain relationships with government contacts, energy efficiency measure installers, manufacturers, and funding sources.

### Project Example 2: Alleviation of Poverty through the Provision of Local Energy Services (APPLES) (South Africa)

#### TARGETED SECTOR:



#### SUMMARY

In the province of KwaZulu Natal, The Energy Centre at Highflats is owned and run as a co-operative by local men and women that have been successful in identifying the challenges and opportunities in improving the energy situation in their communities. The Energy Centre includes a manager's office, a retail outlet, an information center, and a storage site for the stock of energy products, as well as TV and video facilities used for workshops and other awareness and capacity building events.

Local NGOs and research institutions provided the Centre with a significant amount of information material on safe and efficient energy use for households and small businesses. As a result of having a better selection of modern and affordable energy products and services available, several opportunities for small businesses have arisen, which have been presented to the community at a workshop for entrepreneurs.

## EDUCATION AND TRAINING

The work practices of professionals across a range of sectors, from architects and engineers to construction workers and equipment installation contractors, can have a significant impact on energy efficiency behavior in the market. In developing countries, a challenge to implementing energy efficiency measures is the often low level of education of manual laborers in the construction and contracting trades.

Education and training activities contribute to the development of energy efficiency projects in multiple ways. First, they increase the awareness of energy-efficient products for energy managers such as industrial operators and commercial building managers. Second, these activities help develop the business case for retailers to sell energy-efficient products and services – salespersons are able to better inform their customers as to why they should make more expensive energy-efficient purchases through knowledge gained on how these purchases will save energy. Third, the proper installation of energy-efficient equipment is often as important as the energy efficiency of the equipment itself – installers and contractors are able to leverage the best energy savings for their customers when they are fully aware of proper technical procedures.

These activities can be implemented both within educational curricula of trade schools and universities to update practices on a long-term basis and with professional development networks to leverage short-term energy efficiency gains.

Activities can be national or local, led by governments or by private initiatives, and can consist of seminars, workshops, courses, and certification programs. Trainings can focus on technical aspects of designing and installing energy efficiency measures but may also emphasize financial management and other business skills to support implementation enterprises.

Since education and training can address a wide range of needs and can span educational curricula as well as specialized personnel, target audiences must be defined on the basis of

### **Project Example 3: Astarta Sugar Mill Energy Audit as DSM (Ukraine)**

#### **TARGETED SECTOR:**



#### **SUMMARY**

The consulting firm MWH performed an energy audit at Astarta sugar mills in Ukraine in 2007. The audit included a site visit to three of Astarta's sugar mills to evaluate their energy use.

MWH determined that the main energy consumption was concentrated in the boiler house, which generated steam to both produce electricity for process equipment and to provide process heat to the entire factory. MWH provided Astarta with information and advice about how to reduce their energy use, with the projected payback occurring in about two years.

As a result of the success of the energy audit, Astarta contracted MWH again to provide Energy Management Training to senior company management.

country-specific needs. It is necessary to leverage public or private organizations that can provide training with technical experts.

For an application where training was used to help develop a Green Freight transportation program, see Project Example 7 in [Additional Project Examples](#).

## DEMONSTRATION PROGRAMS AND PILOT PROJECTS

Demonstration programs and pilot projects are used to provide documented information on the technical and economic feasibility of energy efficiency technologies through field projects; the success of such projects can then support the scaling up of successful technologies. Key metrics of success in demonstration programs include both measured energy performance and replicability. In some cases, a few successful demonstrations can shift entire markets toward efficiency technologies and practices.

The results of pilot projects can be distributed in multiple ways to help spread information about energy efficiency opportunities. This includes sharing information through workshops on lessons learned through projects, through online or paper documentation kept as reference material or promoted through communication channels like radio, TV, and internet advertising by government agencies or non-governmental associations (NGOs), and through sector network communications, as detailed further in this guide.

Demonstration programs can be carried out by government agencies, NGOs, private companies demonstrating new technologies, and local energy efficiency information centers or their equivalent. The target audience is contingent on the project itself and can be specifically tailored to any stakeholder ranging from companies or sectors with specific needs to the public at large.

For another example of the implementation of pilot projects, see Project Example 7 in [Additional Project Examples](#).

### Project Example 4: Groundwater-based irrigation pilot project (India)

#### TARGETED SECTOR:



#### SUMMARY

A pilot project on energy conservation practices for sustainable agriculture was undertaken in Bangalore using a sample of 50 farms. The goal of the project was to improve crop yields for farmers, to reduce groundwater extraction, and to reduce the need for electricity and chemical fertilizers. At the start of the project, 34 farms had some existing irrigation facility while 16 were rain-fed.

The first step of the project was a baseline resource use assessment, through measuring energy and water use for the 34 farms with existing facilities. The 16 other farms were provided well access and irrigation capabilities in exchange for a token contribution. The second step was to provide each farm with an efficient pump for 1-2 acres each. The third stage was to monitor, quantify, and document changes compared to the baseline.

Farmers were given the results by the NGO that had initiated the project through village presentations. The aggregate reduction in metered electricity usage was 31.4%, even after accounting for the additional electricity to extend irrigation to the 16 previously rain-fed farms.

## **INFORMATION THROUGH DEMAND SIDE MANAGEMENT PROGRAMS**

Larger energy efficiency programs often integrate Demand Side Management programs, which may include energy audits, time-of-use rates, cash incentives, and other features to reduce energy demand.

For example, governments may provide free energy audits to demonstrate the potential for energy savings in order to lower the overall energy consumption and expenditures of a company or home. Potential energy savings documented in energy audit reports can convince energy users to invest in energy efficiency projects.

DSM programs also offer the opportunity to provide feedback to customers and consumers through energy usage (i.e. consumption) metrics. Such metrics can include comparing current-period usage against previous periods, comparing the user's usage against benchmarks based on similar users, disaggregating consumption into end-uses, and comparing energy usage to technical standards.

These metrics can become effective educational tools, especially when provided through utility bills. These bills allow for customers to learn about and modify their usage behavior to achieve energy and cost savings.

The provision of information and education through DSM programs can help motivate energy users to change their behavior or make appropriate improvements to their home or workplace. To learn more about how to implement DSM programs, please see the Incentives and Pricing Technical Guide.

The key players involved in providing information through incentives are entities that deliver the incentive program, which can come from both the public and the private sector, and utilities that can deliver usage-based information to help energy users change their behavior.

## **ORGANIZATIONAL ENERGY MANAGEMENT SYSTEMS**

Energy Management Systems (EnMS) at the organizational level are programs that typically include data collection and reporting, staffing, and other technical and management tools required to implement energy saving practices. Effective programs typically include: setting energy savings goals, gathering energy usage data, installing sub-metering, analyzing consumption data through trend and benchmark calculations, conducting energy audits, developing improvement projects, tracking results, and monitoring progress toward goals. These systems can be implemented by organizations in both the public and private sectors.

The implementation of EnMS requires professionals who can help guide and direct organizations towards the adoption of energy management systems. Senior management personnel, who have the capabilities to incorporate energy efficiency aspects into their decision making processes through information provided by the systems, also play a key role.

## **SECTOR NETWORKS**

Educational and training information on energy efficiency can be delivered effectively in developing countries through professional and industry networks within key sectors. This approach leverages existing organizations and channels and uses firms, sector experts,

government entities, academic entities, trade associations, and other relevant groups as delivery agents for information tailored to their needs.

Important items to be determined at the inception of a sector network energy efficiency information initiative include clearly defining the network's mission, audiences, structure, messaging strategy, technical content, and delivery channels.

When energy efficiency is promoted through the use of sector networks, a wide range of contacts must be developed. As one of the more neutral parties in the network, it is suggested that the government be the entity that starts and manages the network.

## ADDITIONAL PROJECT EXAMPLES

### Project Example 5:

### Philippine Industrial Energy Efficiency Project (PIEPP) Energy Management System (Philippines)

#### TARGETED SECTOR:



#### INTEGRATED PROGRAMS

- Demonstration Programs and Pilot Projects
- Training

#### SUMMARY

PIEPP, started in 2011, aims to promote sustainable energy management systems and achieve best practices in energy efficiency in four of the most energy-intensive industries on a global scale: metal and steel, pulp and paper, chemical, and food and beverages in the interest of saving energy and supporting climate change mitigation efforts.

The goals of the project will be met through, among other measures, the introduction of Energy Management System (EnMS) standards compliant with ISO 50001. Since the start of PIEPP, more than 100 factories have been trained on how to implement an energy management system. As of March 2015, 18 factories have already implemented EnMS using the ISO 50001 framework. This was achieved with the help of 40 national experts on energy management systems. The enhanced capacity of local experts and factory personnel trained under the project will serve as multipliers facilitating the nationwide uptake of EnMS beyond the project period.

**Project Example 6:  
District Energy Accelerator Sector Network (International)**

**TARGETED SECTOR:**



**INTEGRATED PROGRAMS**

- Demonstration Programs and Pilot Projects
- Training
- Targeted Awareness Campaigns
- Sector Networks

**SUMMARY**

The District Energy Accelerator, created at the New York Climate Summit in September 2014, consists of a network to support cities and sub-national and national governments to develop, retrofit, and scale up district energy systems. District energy systems produce steam, hot water, or chilled water, used by individual buildings for space heating, domestic hot water heating, and air conditioning. The accelerated deployment of efficient district energy systems will result in significant fuel savings and reduced energy costs and greenhouse gas emissions.

Members of the network include:

- National and sub-national governments, such as Anshan (Liaoning Province, China) Betim (Brazil), Bogotá (Colombia), and Focsani (Romania)
- Private sector organizations: Danfoss, Grundfos, Siemens, Veolia, Vattenfall, Climespace, Empower
- International partners, including UNEP (United Nations Environment Programme), the International Energy Agency, the U.S. Department of Energy

## **Project Example 7: Promoting Green Freight (Asia)**

### **TARGETED SECTOR:**



### **INTEGRATED PROGRAMS**

- Demonstration Programs and Pilot Projects
- Training
- Targeted Awareness Campaigns
- Sector Networks

### **SUMMARY**

The Green Freight Asia program was created to help lower fuel consumption for road freight movements across Asia-Pacific, to reduce greenhouse gas emissions from these movements, and to lower shipping costs throughout the freight supply chain.

The program has been implemented by working with government agencies, the private sector, research institutes, and civil society to develop national and regional green freight programs.

Each of these national and regional programs was developed through a methodical approach, which includes:

- Establishing and maintaining a clear governance structure and working mechanism, convened by a neutral body
- Developing and adopting consistent tools and methodologies for carbon measurement and reporting to receive quantitative feedback as to their success
- Producing publications, websites, and events on green freight in order to raise awareness, share experiences and technical knowledge, and engage stakeholders
- Conducting seminars and pilot projects to determine the feasibility of green freight programs in Asian national and regional jurisdictions



## **KEY PLAYERS**

### **Energy-efficient Product and Service Companies**

Energy-efficient product and service companies are instrumental in propagating information on energy efficiency because their businesses depend on selling energy efficiency as an asset and therefore informing potential customers about the benefits of implementing energy efficiency technologies and practices. They can be involved in almost any information or educational program ranging from general awareness campaigns promoting new efficient technology to training activities where they may hold sessions on installing or maintaining energy-efficient equipment.

### **Government Agencies**

Government agencies are ideally suited to promote energy efficiency because they can act as a central point of contact for energy users looking to implement efficient technologies and practices. They may have better access than other key players to communications facilities to promote measures and can be helpful in setting up local energy efficiency information centers (particularly sector networks, which often cross regional and international borders and thus may require government input). They also have influence over what energy efficiency information is included in the educational curriculum.

### **Advertising Agencies and Communications Companies**

Advertising agencies and communications companies are likely to work in tandem with other key players to help spread information through radio, TV, newspapers, internet advertisements, billboards, telemarketing, and other advertising means. The placements promoted by these key players are likely to be created by energy-efficient technology suppliers, government agencies, and non-governmental organizations.

### **Non-governmental Organizations (NGOs)**

NGOs are likely to engage government agencies, energy-efficient product and service companies, and advertising agencies to promote energy efficiency as a means to save energy and improve the overall quality of life of citizens. They may promote lesser known technologies through pilot programs and demonstration programs and can be critical contributors of information to local energy efficiency information centers.

### **Trade Associations and Professional Societies**

Trade associations and professional societies with technical experts are likely to lead professional trainings and help in the promotion of organizational level energy efficiency information and educational programs (such as organizational energy management systems and sector networks). These key players may cross borders and may be international organizations. With their specialized expertise, trade associations and professional societies are ideally placed to help implement targeted awareness campaigns.

## **Education and Research Institutions**

Education and research institutions are critical to adopting energy-efficient practices over the long term, as they may adapt educational curricula to include information on energy efficiency. In the shorter term, key players with strong academic credentials can help deliver trainings, targeted awareness campaigns, and provide a wealth of information to local energy efficiency information centers. These institutions are well-placed to conduct pilot programs because they are rooted in research and can easily refine programs and technologies based on successive iterations.

## **Demand Side Management (DSM) Players**

DSM players include utilities, commercial banks and private investors, governments, and regulators. Utilities may implement DSM programs as part of government initiatives and would be responsible for providing information through government channels. For more information on DSM key players, see the Incentives and Pricing Technical Guide.

## **Management and Technical Personnel within Sectors**

Management and technical personnel are able to make decisions that will propagate energy efficiency information and technologies throughout their companies. They are able to create demonstration programs for technologies within their companies or spearhead the implementation of energy management systems throughout their organizations. They are also critical in the implementation of targeted awareness campaigns in their respective sectors and may help contribute to Sector Networks through potential regional and international reach.

## PROJECT EXAMPLE RESOURCES

### Project Example 1: Initiative EnergieEffizienz (Germany)

“Market Potential in Energy Efficiency in Southeast Asia,” Eurocham Singapore and Roland Berger Strategy Consultants (2011):

[https://www.rolandberger.com/media/pdf/Roland\\_Berger\\_Market\\_Potential\\_in\\_Energy\\_Efficiency\\_in\\_Southeast\\_Asia\\_20111104.pdf](https://www.rolandberger.com/media/pdf/Roland_Berger_Market_Potential_in_Energy_Efficiency_in_Southeast_Asia_20111104.pdf)

### Project Example 2: Alleviation of Poverty through the Provision of Local Energy Services (APPLES) (South Africa)

“Alleviation of Poverty Through the Provision of Local Energy Services (APPLES),” Intelligent Energy Europe (2008): [http://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/apples\\_project\\_case\\_study.pdf](http://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/apples_project_case_study.pdf)

[http://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/apples\\_project\\_case\\_study.pdf](http://ec.europa.eu/energy/intelligent/projects/sites/iee-projects/files/projects/documents/apples_project_case_study.pdf)

### Project Example 3: Groundwater-based irrigation pilot project (India)

“Efficient groundwater-based irrigation in India: Compilation of experiences with implementing irrigation efficiency,” Regional Energy Initiative – Asia International Energy Initiative (2010):

<http://www.iei-asia.org/IEI-Bangalore-EfficientGWIrrigation-Compilation-Report.pdf>

### Project Example 4: Astarta Sugar Mill Energy Audit as DSM (Ukraine)

“Impact Assessment of Energy Audits Programme,” Secretariat for CEI Projects, D’Appolonia, MWH, and the European Bank for Reconstruction and Development (2009):

[http://www.ebrd.com/downloads/sector/eecc/Energy\\_Audits\\_Programme\\_Impact\\_Assessment.pdf](http://www.ebrd.com/downloads/sector/eecc/Energy_Audits_Programme_Impact_Assessment.pdf)

### Project Example 5: Philippine Industrial Energy Efficiency Project (PIEPP) (Philippines)

“Philippine Industrial Energy Efficiency Project (PIEPP),” ASSIST Asia Newsroom (2015):

<http://assistasia.org/index.php/media-center/newsroom/241-philippine-industrial-energy-efficiency-project-piepp>

### Project Example 6: District Energy Accelerator (International)

“Sustainable Energy for All, Global Energy Efficiency Accelerator Platform Action Statement and Action Plan [Provisional Copy],” United Nations Climate Summit (2014):

<http://www.un.org/climatechange/summit/wp-content/uploads/sites/2/2014/07/ENERGY-SE4ALL-Platform.pdf>

### Project Example 7: Promoting Green Freight (Asia)

“Creating Universal Access to Safe, Clean and Affordable Transport, Partnership on Sustainable Low Carbon Transport,” Partnership on Sustainable Low Carbon Transit (2013):

<https://sustainabledevelopment.un.org/content/documents/1158SLoCaT.pdf>

“What is GFA?” Green Freight Asia (2013): <http://www.greenfreightasia.org/>

## ADDITIONAL RESOURCES

**“Creating an Energy Awareness Program,” U.S. Department of Energy (2007):**  
[http://www1.eere.energy.gov/femp/pdfs/yhttp\\_ceap\\_hndbk.pdf](http://www1.eere.energy.gov/femp/pdfs/yhttp_ceap_hndbk.pdf)

A detailed guide on how to create energy awareness programs.

**“Getting Started with ISO 50001,” U.S. Department of Energy Office of Energy Efficiency & Renewable Energy:** <http://www.energy.gov/eere/amo/getting-started-iso-50001>

Provides a detailed, step-by-step approach through which organizations can implement energy management systems.

**“Implementing an Energy Efficiency Awareness Program,” Natural Resources Canada (2012):**

[http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeefiles/pdf/publications/commercial/Awareness\\_Program\\_e.pdf](http://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/oeefiles/pdf/publications/commercial/Awareness_Program_e.pdf)

A buildings sector-focused guide on creating an energy efficiency awareness program.

**“Policy options to overcome barriers to industrial energy efficiency in developing countries (working paper),” United Nations Industrial Development Organization (2011):**  
[http://www.unido.org/fileadmin/user\\_media/Publications/Research\\_and\\_statistics/Branch\\_publications/Research\\_and\\_Policy/Files/Working\\_Papers/2011/WP132011%20Policy%20Options%20to%20Overcome%20Barriers%20to%20Industrial%20Energy%20Efficiency%20in%20Developing%20Countries.pdf](http://www.unido.org/fileadmin/user_media/Publications/Research_and_statistics/Branch_publications/Research_and_Policy/Files/Working_Papers/2011/WP132011%20Policy%20Options%20to%20Overcome%20Barriers%20to%20Industrial%20Energy%20Efficiency%20in%20Developing%20Countries.pdf)

Includes a section on industrial sector information-focused policies, including awareness and education campaigns, training for firm personnel, energy management systems, creating government agencies for energy efficiency, providing technical assistance, and building networks.

**“Promoting Energy Efficiency,” International Development Finance Club Energy Efficiency Working Group, (2013):**

[https://www.idfc.org/Downloads/Publications/02\\_other\\_idfc-expert\\_documents/IDFC\\_Energy\\_Efficiency\\_Paper\\_01-12-14.pdf](https://www.idfc.org/Downloads/Publications/02_other_idfc-expert_documents/IDFC_Energy_Efficiency_Paper_01-12-14.pdf)

Provides a brief overview on strategies to promote energy efficiency through policy and regulatory measures, financial support and incentives mechanisms, and information, education, and technology.

**“Promoting Energy Efficiency in Buildings: Lessons Learned from International Experience,” United Nations Development Programme (2010):**

[https://www.thegef.org/gef/sites/thegef.org/files/publication/EEBuilding\\_WEB.pdf](https://www.thegef.org/gef/sites/thegef.org/files/publication/EEBuilding_WEB.pdf)

Includes information on setting up general awareness and information campaigns, energy audits, local energy efficiency information centers, training, and demonstration programs.