

Overview

Smart Energy Consumer Education project

July 2014

Introduction

The Environmental and Energy Management Program of the School of Engineering and Applied Science at the George Washington University developed materials for a consumer education program targeted to PEPCO electricity customers. It is expected that this program will enable PEPCO to undertake an effective social marketing campaign with customers in its service area to raise their awareness of smart metering and related new technologies and to provide them with necessary information to facilitate the realization of the potential benefits they can obtain from using such meters and technologies.

The material developed is intended to reinforce current PEPCO education initiatives in order to maintain consistent messaging and leverage existing customer engagement tools and programs. It is anticipated that this material will enable PEPCO to conduct an effective outreach to its residential and small business customers through face-to-face engagement.

The theme of the program was “Save Energy. Save Money.” The proposed Phase I program will include the following six key components, which was undertaken in the indicated order:

1. Course content development
2. Development of information packets/handouts
3. Design of feedback survey instruments
4. Course testing and evaluation
5. Training of course instructors
6. Preparation of online education course development plan

Each of these key components is addressed individually below.

1. Course Content Development

This component of the proposed program focused on initial efforts on the development of the structure and content of a 60 minute adult education course.

The initial course began by providing a basic overview of electricity concepts followed by a discussion on the environmental and financial impacts of high energy usage. Next, the course material focused on the potential monetary savings available from energy efficiency and conservation strategies and educate the customer on how to save money on their electricity bill through specific, tangible solutions. The course content was structured for delivery by one or more individuals.

The structure and specific content of the course allowed customization to suit specific events and venues. Generally, the course included an oral presentation, handouts/booklets for the audience, PowerPoint slides and audience interaction techniques. Most importantly, the course was designed to be fun and informative for customers as well as an opportunity for PEPCO to learn about gaps in customer understanding of energy saving programs.

Course materials also were developed in Spanish language for use in conjunction with delivery of the course to Spanish-speaking audiences.

More detailed information about the development of the initial course module is provided in Appendix A.

2. Development of Information Packets/Handouts

Program Component #2 involved the development of material for course attendees, such as booklets, brochures and course handouts. These items utilized content compiled from existing PEPCO literature such as that at http://www.pepco.com/_res/documents/Pepco_Helpful_Ways.pdf, as well as new original content developed under this proposal.

We also developed a toolbox of educational materials to provide to customers at the end of the course a resource that will reflect the course content, provide detailed information on topics that are not covered in-depth during the course presentation, and offer information for further resources, such as descriptions of current PEPCO programs and links to sign-up/register.

Information packets/handouts also were developed in Spanish language for use in conjunction with delivery of the course to Spanish-speaking audiences.

The educational materials also included a “gift,” such as a souvenir magnet similar to those available in the Kenilworth Gardens. Such an item likely was more permanent in the homes of the participants, perhaps residing on the refrigerator door, as a continuing reminder about key points of the course. Cup holders or other small items also could be used as media to provide more permanent information conveyance.

3. Design of Feedback Survey Instruments

Survey instruments were designed to facilitate effective and efficient feedback mechanisms from the course to dispense. It is envisioned that, at the end of each course delivery, customer participants were asked to fill out a brief survey in which they were asked to respond to questions designed to elicit information useful to improvement of the instant course, as well as to inform the design of follow-on courses. In addition, the end-of-course surveys were used to gather feedback on the quality of the course material and delivery, and acquire data for continuous consumer education course improvement.

Consideration also were given to starting the course with a short survey (asking about general understanding of the subject, objectives and expectations from attending the course), which might be useful in evaluating “immediate learning” from the course.

In addition, a follow-up survey was designed to be administered six months after the course. The survey was designed to evaluate the degree to which participants applied the new knowledge in their everyday lives and measure the benefits derived from the course.

Additional detail regarding the design of feedback surveys is contained in Appendix B of this document.

4. Course Testing and Evaluation

This component included "beta testing" of curriculum modules, rehearsal training exercises using actual course materials and GW students as customer stand-ins, and, when fully prepared, conducting 1-2 demonstration pilots involving delivery of the courses to PEPCO customers.

5. Training of Course Instructors

This component included training for course presenters, as well as preparation for consulting on course delivery as the program moves forward as described in Phase II below.

6. Preparation of Online Education Course Development Plan

Component #6 involved the preparation of a plan to develop an online version of the smart energy customer education course. The plan included the results of an analysis of alternative approaches, such as utilization of a stand-alone PEPCO Smart Energy Education Program web site, use of GW’s Blackboard online education system and other alternatives.

Output from Component #6 included conceptual design options for the online education course as well as a projected timeline and budget for full development and testing of the online version.

Project Team

Key members of the project team, their anticipated roles and projected levels of effort, are set forth in the table below. Resumes for each team member are provided in Appendix E.

Team Member	Project Role	Level of Effort
Prof. Jonathan Deason	Principal Investigator	5%
Prof. Joe Cascio	Project Oversight	10%
Priya Swamy	Project Manager and Curriculum Development	50%
Iryna Payosova	Curriculum Development Assistance, Survey Design and Project Administration Assistance	25%
Soala Whyte	Course Brochure and Handout Design and Educational Toolbox Development	25%
Junchao Gu	Preparation of Online Education Course Development Plan	25%
Vanessa Trejos	Spanish Language Material Development	10%
Benjamin Heras	Spanish Language Material Development	10%
Other Graduate Students	Module Beta Testing and Rehearsal Assistance	25%

Appendix A - Phase I Course: 60-Minute Adult Education Orientation Course

The content of the course module, anticipated to be a 60 minute Adult Education orientation course, was designed to be informative, fun and actionable. The goal of the course was to educate, but also provide customers with solutions they can use to save energy and money.

Provided below is a conceptual vision of the content of the Phase I course:

Highlight of Electricity Concepts

How is it made?

- Generation

How is it transported?

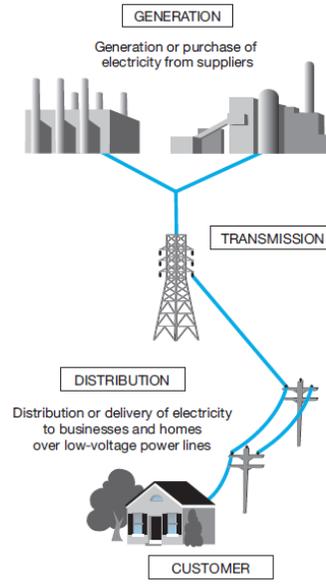
- Transmission
- Distribution

What is a Kwh?

- What's the typical consumption in DC?
- How does your usage change throughout the year?

What are smart meters and net metering?

- Why are smart meters being used in DC?
- Benefits of smart meters



Understanding My Own Energy Use

- Tutorial on My Account
- Understanding and interacting with graphs and usage information
- Understanding my bill
- Peak Energy Savings Credit (PESC) and Energy Wise Rewards(EWR) programs
- Where to go for more information and options

Easy and Affordable Ways to Save Electricity

Top Ways to Save

- Lighting
- Energy-efficient Appliances
- Minimize Phantom Loads
- Heating, Cooling and HVAC
- Programmable Thermostat
 - PEPCO's Energy Wise Program
 - Enroll to receive a programmable thermostat (or outdoor switch) installed at no charge and receive up to a \$120 bill reduction.
- Seal Air Leaks
- Improve Insulation
- PEPCO's "85 Ways to Save"
 - Included in handout material

- PEPCO's DC EnergyGram Program

Interactive Home

- Audience members can obtain specific details on what to do to save electricity in specific rooms.

Home Energy Audit

- Free energy audits for single-family or townhouses in DC through the District Department of the Environment (no income guidelines required).
- PEPCO's On-line Energy Audit Tool



Appendix B - Surveys

It is anticipated that two surveys were conducted in conjunction with the Phase I course. Provided below is a conceptual vision of the content of the surveys that are anticipated to be developed.

Survey Immediately Following Course Completion

A survey was conducted immediately following completion of the Phase I course, utilizing a survey instrument containing questions such as the following:

1. Was the course useful?
1. How likely are they to implement some of the suggestions from the course?
2. Did you learn something that you did not know before?
3. Do you feel empowered with the available resources?
4. Do you think the solutions to save electricity presented in the course are practical?
5. How likely are you to enroll in the electivity savings programs discussed in the course?
6. Do you feel like you have control over your energy bills?
7. Is saving money important to you?
8. Is saving electricity important to you?
9. On a scale of 1-10, rate the effectiveness of the course instructor(s).

Six-Month Follow-up Survey

A second survey was administered to course participants approximately six months after the completion of the Phase I course. This survey was designed to capture the thoughts of course participants after a sufficiently long period of time to enable them to determine how useful the information gained in the course has proven to be, along with other information helpful in facilitating improvements to the course as well as to the design of follow-on courses.