

HOME ENERGY RATING SYSTEMS AND ENERGY EFFICIENCY FINANCING: GUIDELINES FOR DESIGNING AND IMPLEMENTING A PROGRAM

Roberta W. Walsh, The University of Vermont, Burlington, VT
Nancy E. Collins, Q⁴ Associates, Oakland, CA
Barbara C. Farhar, National Renewable Energy Laboratory, Golden, CO

Background and Introduction

Process evaluations of state-level energy efficiency financing (EEF) programs linked with home energy rating systems (HERS) were conducted in the pilot states of Alaska, Arkansas, California, Vermont, and Virginia, covering primarily 1993-1995, with updates of 1996 activities (Farhar *et al.*, 1997). Process data collected were specified in an evaluation plan developed in 1994 (Collins, *et al.*, 1994). This plan also addresses impact evaluation data necessary to demonstrate success at both state and national levels. However, impact data were not the focus of these case studies since organizations in the pilot states had not completely established systems for maintaining such data. One purpose of the case studies was to visit these organizations and advise them on what data to collect, the value of such data, and how to interpret it.

Our analysis of the process data, drawn from the 1997 collective case studies, has resulted in guidelines that could be used to develop a new program, described in this paper. Such guidelines are useful not only to the federal agencies involved in program administration and states already operating programs, but also to decision makers who are considering instituting similar programs in other parts of the country and the program implementers who are in the early stages of program development. To a certain extent, application of these guidelines might be considered as resulting in a "model" program, where "model" refers to a program that incorporates all the positive and most successful aspects of the programs we studied, as well as features that may have been absent in the pilot states but which we deem to be important. Although many organizations are involved in the EEM/EEF process, in this paper we focus on the organization that is responsible for the rating system.

We have employed a framework for developing these guidelines, using ten applicable evaluation criteria drawn from the fields of marketing (Kotler, 1982) and program implementation (Sabatier and Mazmanian, 1979; Scheirer, 1981). We believe this approach is appropriate for the type of product embodied in HERS/EEF activity, inasmuch as the activity is at the intersection of both the public and private sectors, involving federal and state agencies, financial institutions, the real estate industry, and utilities. Our

paraphrased statements of the criteria that HERS/EEF organizations must address and deal with are as follows:

1. The mission statement is clear and realistic
2. The program objectives are appropriate to the mission, resources, threats, and opportunities of the organization
3. The program implementers recognize the economic, social, and political conditions as they affect program objectives and the ability to adapt to changes in these conditions.
4. The program is designed, defined, and well-grounded as it relates to target group behavior
5. Actions are based on clear and unambiguous policy directives
6. The organization is operated by people with critical leadership skills, both managerial and political
7. The organization and its staff have developed supportive and cooperative relationships with constituency groups
8. The organization has adequate human and capital resources with quality control measures in place.
9. The flow of communication is clear and effective, both internal to the organization and externally, among constituencies and the target audience
10. Any technical requirements are current and incorporated into operations.

Why Are Guidelines for HERS/EEF Programs Important?

HERS/EEF programs are relatively new phenomena in the energy/housing services scene. Their emergence came in response to the void that had existed in the housing market for a voluntary mechanism that would gauge the energy efficiency level of a dwelling unit and recommend appropriate measures for energy improvements that could then be financed through the mortgage process. This void was recognized by energy and housing finance agencies at the

state level, and by the U.S. Departments of Energy (DOE) and Housing and Urban Development (HUD) at the federal level. State agencies lent support and where necessary, legislatures enacted statutes to facilitate the formation of organizations that would serve as the focal point for linking energy ratings with financing. The ability of a HERS/EEF program to meet this expectation is at the foundation of a model program.

To be successful, the organization must be capable of achieving objectives that were unattainable before the program was put into place, setting into motion the activities appropriate to and necessary for addressing the void it is intended to fulfill. HERS/EEF programs and the organizations that implement them aim to transform the housing market by focusing on energy efficiency in all phases of the marketing process. The pilot states, and the many other states that have instituted programs since 1993, are testing a variety of approaches, which are designed in many cases to address the characteristics of the housing market and lending processes peculiar to the state or to specific regions of the state. In all cases, however, the market transformation process is one in which every person involved in buying and selling a home—i.e., target groups (or stakeholders)—must be informed about an entirely new procedure, how and when it should be used, and be convinced that it is worth spending the time to learn about it. Target groups are sellers, buyers, real estate professionals, builders/contractors, lenders or brokers, lending institutions, and appraisers. We do not include raters because many are already convinced of the importance of this new approach to developing energy efficient housing. Other entities such as utilities may be included among target groups if ongoing relationships do not already exist.

Guidelines for HERS/EEF Programs

Each of the criteria listed above is discussed in this section, using examples where appropriate. The criteria are not mutually exclusive; rather, they are integrated, interconnected, and complementary.

1. The mission statement is clear and realistic

Like any organization, a HERS/EEF program requires a mission statement at the heart of its operations. If the mission is indeed broader than conducting ratings—and as we have stated earlier, the mission is to link energy efficiency in housing with housing finance—then it should be so stated as the mission of the organization. If the organization is bogged down in conducting ratings only because that is what its name implies it does, then either its mission should be re-stated to that effect, or the name of the organization should be changed to reflect its broader mission. At the same time, however, a mission statement that is too broad and suggests to the public (including target groups) that its *raison*

d’etre is beyond what reasonably can be fulfilled, may be self-defeating in the long run.

We offer two examples of mission statements that might be appropriate for a HERS provider organization:

- *To create an infrastructure that will support HERS/EEF activities and meet the needs of target groups, with the ultimate goal of demonstrating the value of financing energy efficiency.*
- *Transform the housing market by providing accurate, reliable information to compare energy efficiency among dwelling units at a period in time and over time.*

2. The program objectives are appropriate to the mission, resources, threats, and opportunities of the organization

Once articulated, the mission statement becomes the foundation for formulating program objectives and the strategic planning process. A reasonable way to lay out objectives is to prepare a multi-year business plan. This method allows the organization to track its progress over time as well as clearly define where it wants to be and when. Despite the obvious nature of the preceding statement, the lack of such planning is all too common. A newly-formed organization frequently finds itself too busy trying to perform day-to-day tasks with too small a staff, which prevents attention to its longer-term goals.

Opportunities can be identified that exploit the uniqueness of the HERS/EEF organization. As an entity that interfaces with both the public/private and profit/non-profit sectors, it can participate in socially responsible marketing practices that are now being adopted among firms desiring to “give back to the community” where they operate (e.g., Energy Rated Homes of Vermont staffs and solicits volunteers for “Make a Difference Day” to perform energy audits of low-income households.)

HERS/EEF programs, dispersed as they are, can also convey to the public that they are nonetheless part of a larger, common effort by adopting a descriptive logo. Development of their own financing products, without relying on initiation by partners, as has been the track record to date, can demonstrate that HERS providers are attuned to local market needs and conditions.

3. The program implementers recognize the economic, social, and operating environment conditions as they affect program objectives and the ability to adapt to changes in these conditions

The need for knowledge about how external influences impact the organization’s effectiveness goes beyond strategic planning to the actual “intelligence” gathering that must be conducted in order to maintain a pulse on the dynamic environment in which HERS/EEF programs function.

Quantitative data on housing starts, new and existing home sales, trends in residential mobility, and household and mortgage characteristics are among the reservoir of information that HERS/EEF programs can have at their disposal for the purpose of accurately assessing economic (market) conditions affecting their mission. Sources of data and issues of data quality have been addressed at length in prior reports produced by NREL during the last three years (see References). Qualitative information can be gathered through interaction with target groups—informally as trade allies or formally in focus groups or periodic interviews—to gain insights into social and political conditions as well as non-quantifiable market information (e.g., information concerning anticipated economic development activity that might affect the volume of new home sales).

Market positioning based on this information may blur the boundaries of state lines, properly identifying the “market” for HERS/EEF as serving several states. With the deregulation of financial institutions and their ability to do business in any state, it makes little sense for HERS/EEF programs to be confined to specific geographic areas. Deregulation of electric utilities resulting in retail competition has the same implications. State agency partnerships linked to traditional alliances that helped form HERS/EEF programs in their early beginnings may be at risk here. The free market environment may require distancing from these agencies—a delicate balancing act, inasmuch as they may have to be relied upon at a future time, should government re-enter the energy market in a major way (even though this is unlikely in the foreseeable future unless another “energy crisis” occurs). At the moment, however, it appears that no “market failure” is being acknowledged with respect to EEF.

4. The program is designed, defined, and well-grounded as it relates to target group behavior

In order to effectively design and implement a HERS/EEF program, the target group must be identified and its behavior understood. Some programs identify homebuyers as the target group, while others identify those who act as intermediaries in reaching homebuyers (professionals in the housing and financing markets) as the target group. When HERS/EEF programs view their target group as including all of these myriad players, they run the risk of losing focus in their program activity and becoming less effective with any one group.

Programs administered with an understanding of the motivation that underlies target groups to become involved in HERS/EEF activity are better positioned to be proactive in their dealings with the target groups rather than reactive in a given situation. Because energy rating and financing occurs in the context of dynamic markets, motivations are subject to change, posing a challenge to the organizations to keep pace with these conditions.

5. Actions are based on clear and unambiguous policy directives

Policy directives in HERS/EEF programs emanate from a variety of sources, both internal and external to the organization. Often, internal directives originate from external sources, as in the case of pilot programs and partnerships formed with utilities or housing finance agencies. To date, most HERS providers have been established and oriented toward serving a single state, but an appropriate alternative is for organizations to be established based on market territory, which could cross state boundaries (e.g., Upstate New York/Northern New England area) or serve limited areas within a state. Both the Virginia Home Energy Rating Organization (V-HERO) and Energy-Rated Homes of Arkansas (ERH-AR) have made inroads outside their home states.

We have identified at least three “models” by which HERS providers are created and, ideally, move toward self-sufficiency:

- (1) State government agency(ies), sometimes augmented by federal funding and, if it is a housing finance agency providing EEF products, seed(s) the creation of a non-profit HERS provider, which is intended to develop into a self-sufficient non-profit organization, but often with continued oversight on the part of the state agency.
- (2) Utility-developed initiatives (singly or as part of a consortium) create the HERS provider, often staffing it in the beginning and providing EEF products, with the expectation that the market will develop to the extent that the funding can be withdrawn and the organization will become a self-sustaining non-profit or for-profit organization.
- (3) An individual or group forms a for-profit (or non-profit) HERS provider organization, relying on networking to obtain clients and match them with appropriate EEF products as a means of achieving self-sufficiency.
- (4) The HERS provider organization links with energy-efficiency industries (e.g., insulation manufacturers) to provide rating services and guarantees of energy savings when retrofits are done.

The first two types of organizations usually are connected with national support organizations such as the HERS Council, Energy Rated Homes of America, and the Residential Energy Services Network (RESNET), while the third and fourth are not as dependent on national-level networking. With numerous ongoing strategies in place, each with

different (but not necessarily conflicting) directives, it is important for the HERS/EEF program to maintain an identity through clear and specific directives of its own. An example exists in Alaska, where many organizations play roles in marketing ratings and promoting EEF, with many internal changes occurring among individuals involved and roles played by each organization. Yet, throughout the many years of the program and internal distinctions among programs, the public is aware of only two terms: "Energy Rated Homes of Alaska" and "Alaska Craftsman Home Program."

6. The organization is operated by people with critical leadership skills, both managerial and technical

We propose that a minimal staff size and set of skills are required to gain the momentum needed by a HERS provider in order to be effective and meet the challenges associated with market transformation. In setting forth this proposal, we assume that the organization has in place the elements associated with the preceding guidelines.

The staff needs to be headed by an individual who is highly committed to the stated mission, is "plugged in" to the housing/lending/realty community, is skilled in networking, and has a facilitative manner in working with others. The leader may have marketing or other related background, but should also have specific expertise in housing finance.

Equally important is a staff member with strong technical skills in energy efficiency, although this individual probably would not be the organization's executive director. Among the technical director's responsibilities are developing/validating the rating system,¹ training raters, and maintaining quality control over the ratings. This staffer would also be the locus for establishing and maintaining a relational database that contains both rating information and EEF actions associated with the ratings.

The third key staff member would handle public relations, publicity, and interaction with the media. This person should have responsibility for developing a written marketing plan, preferably with very specific sets of quarterly targets. The reason for the written plan is to ensure that (1) marketing via the media consists of repetitive messages from diverse, credible and respected sources, (2) the information needs of all those involved in the EEF chain are being met, and (3) the connections among raters, consumers, and lenders are being made. This person would also work with the executive director in establishing alliances and partnerships with organizations (e.g., utilities) and individuals (e.g., builders) for high-profile joint activities.

¹As improvements are made in user-friendly computerized rating tools and as national guidelines are instituted to ensure comparability, developing a rating system will no longer be required, although some modifications may be necessary to reflect the housing market and climate particular areas.

Fourth, the training director designs and coordinates all educational activities provided for raters, lenders, real estate professionals, appraisers, and underwriters.² This person may not always be a trainer, but will arrange for the best possible workshop leaders to provide the most effective specific training needs. For rater training, both the technical and marketing directors should be involved.

An added bonus on the staff is a knowledgeable administrative assistant who is competent in handling calls for information, rater referrals, and data entry. Raters, although trained by the organization, should not become employees or staff members. (Raters are addressed in criterion #8.)

7. The organization and its staff have developed supportive and cooperative relationships with constituency groups

This criterion concerns relationships between the HERS provider organization and its board of directors, a cadre of raters, and target/stakeholder groups, as well as local offices of agencies implementing EEF programs such as Housing and Urban Development (HUD), Department of Veterans Affairs (DVA), and U.S. Department of Agriculture's Rural Housing Service (formerly Farmers Home Administration).

The HERS provider board of directors, we have learned, is essential to the success of the organization. Board members are the "champions" for HERS/EEF within the key stakeholder groups. They can often be the best publicity the program can have. They validate the concept and encourage their peers to accept it. In situations where considerable interaction prevails among organizations, each of which has different responsibilities with respect to HERS/EEF, it is not unusual for executive directors to serve on each others' boards. This can be a positive practice to the extent that enthusiasm is maintained because it ensures that the activities of all organizations and the view of solidarity described in Criterion #5 are well-coordinated.

The cadre of qualified/certified raters must reach a critical mass so that the consumer always receives a rating promptly. The double-edged sword, however, is that it may take a long time for so a large group to reach the point where each rater can make a living conducting ratings. This means the cadre will probably be continually changing in composition and service territory. Two difficulties identified in the pilot states are (1) serving rural areas because distances between rating customers are far apart, demand is low, with few or no raters able to serve some of the areas; and (2) having to train raters in marketing as well as technical issues. The latter is important because the rater may be the only person available to convince the home owner/buyer to use the rating for EEF. The rater may also be the best source for learning whether EEF action is taken after a rating.

²Education for consumers is typically done by other organizations at home shows and seminars for first-time homebuyers.

Stakeholders must be identified and involved as “cheerleaders” and supporters beyond serving as board members. Examples include real estate professionals both as individuals and the firms they work for; bank and non-bank mortgage lenders; and trade and professional associations for these groups as well as those representing appraisers, and the home construction industry.³

The need for strong working relationships with the implementing EEF agencies cannot be overstated. It is important that key personnel in these agencies view the HERS/EER organization as a partner in facilitating the processing of loans.

8. The organization has adequate human and capital resources with quality control measures in place

Applying this criterion regarding human resources interacts with other criteria that relate to training and certifying raters. Overemphasis on training, however, can lead to artificial designations of competence that may increase costs but add little to quality control.

Capital resources, of course, refer to revenue streams and the ultimate goal of self-sufficiency. The length of time required for self-sufficiency can be considerable (perhaps 10-15 years), which should not be surprising considering that the function of the HERS provider is to transform the housing marketplace. Concomitantly, the cost is high for the HERS provider organization as well as for other stakeholders. Annual cost of the five-person staff described in Criterion #8 is likely to be substantial. Additional operating costs include buying publicity, space, printing large quantities of materials, hiring consultants as needed, and communications costs.

As the organization grows and becomes more successful, additional staff will be required. From the beginning, then, as has been said repeatedly up to this point, the organization needs to focus on how to generate sufficient income so that subsidies are no longer needed. Among the many ways we observed across the pilot states of doing this are: subscriptions for newsletters; significant (not token) registration fees for workshops and training; annual fee for raters to remain on referral list; bi-annual recertification fee for raters; sales of workshop materials (manuals and videos); charge for processing each completed rating; charge for processing post-rating; consulting advice to other start-up HERS providers; training raters for other organizations; and sales of rating software. It is important, though, to remember that ratings are “only” an activity and the organization should not be over-dependent on them for revenues—that would make ratings the end, when they are, in fact, a means toward the end.

To date, we cannot say with certainty how long the road is to self-sufficiency nor how much money it must be paved

with nor the sources of that money. This is an area which deserves considerable attention at local, state, and national levels during the coming years.

9. The flow of communication is clear and effective, both internal to the organization and externally—among constituencies and the target audience

This criterion addresses the question, “What picture does the ‘outside world’ have of energy efficiency ratings and financing?” The less encumbered the communication within the organization, the greater the likelihood of effective communication (getting the message across) to external audiences. Consistent messages from many credible sources—such as members of boards of directors and advisory groups to their constituencies—serve to reinforce the mission of the organization in the public eye.

10. Any technical requirements are current and incorporated into operations

New HERS/EEF organizations have the benefit of advances in the state-of-the-art, technologically speaking. They can focus attention on organizational and marketplace issues, whereas early programs did not have this luxury.

Assessment of Criteria

Periodic assessment (“how are we doing?”) is essential to the model HERS/EEF organization so that priorities can be set and emphasis appropriately placed on specific activities. As we have noted, the success of these organizations is largely dependent on phenomena such as economic activity often beyond their control. Tools such as annual reports, and formal and informal feedback mechanisms from target groups—all channeled directly to the leadership—are essential for the regular review and revision of objectives and procedures. The database, because it contains quantitative information about energy efficiency, retrofit costs, mortgages and EEF, serves as the link for understanding how the process information is related to HERS/EEF activity. Careful examination of these relationships, combined with details of training and rating activities and a year-end balance sheet, should be the basis of an annual report that is distributed to stakeholders and, in itself, is a powerful marketing tool.

References

Babiuch, W.M. and B.C. Farhar. 1994 (March). *Stakeholder Analysis Methodologies Resource Book*, NREL/TP-461-5857. Golden, CO: National Renewable Energy Laboratory.

Collins, N.E., B.C. Farhar, W.M. Babiuch, and J. Eckert. 1994 (August). *A Plan for Evaluating Alternative Approaches to Financing Energy Improvements in Housing*,

³For a detailed discussion of working with stakeholder groups, see Babiuch and Farhar (1994).

NREL/TP-461-6688 (Final Draft). Golden, CO: National Renewable Energy Laboratory.

Farhar, B.C. and J. Eckert. 1993 (September). *Energy-Efficient Mortgages and Home Energy Ratings Systems: A Report on the Nation's Progress*, NREL/TP-461-5478. Golden, CO: National Renewable Energy Laboratory.

Farhar, B.C., N.E. Collins, and R.W. Walsh. 1997 (May). *Case Studies of Energy Efficiency Financing in the Original Five Pilot States, 1993-1996*.

Kotler, P. 1982. *Marketing for Nonprofit Organizations*. 2nd ed. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Sabatier P. and J. Mazmanian, "The Conditions of Effective Implementation: A Guide to Accomplishing Policy Objectives," *Policy Analysis*, Vol. 5, pp. 481-504.

Scheirer, M.A. 1981. *Program Implementation: The Organizational Context*. Beverly Hills: Sage Publications.