EVALUATION OF SEVEN HOME ENERGY RATING PROGRAMS
FOR EXISTING SINGLE-FAMILY HOMES

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INTRODUCTION

In 1984, the Montgomery County Maryland Council adopted a five-year energy plan which authorized the county to undertake a wide variety of activities that would assist it in reaching its stated goal of becoming the most energy-efficient county in the country. Among the many programs outlined to be undertaken by the County's Department of Environmental Protection was a "building energy efficiency rating system" which would provide a means of identifying the relative energy efficiency of residences in the county. As a first step, Montgomery County initiated a study to examine the factors that should be addressed in establishing a program to accomplish this goal. The County would then use this information to select an existing program to implement, or to design a program of its own.

EVALUATION APPROACH AND RESULTS

This discussion will provide a synthesis of the similarities and differences between the programs evaluated as part of this study and how this impacted the effectiveness of their program design and penetration.

Programs Reviewed

o   **Energy V.I.P. Program of Ann Arbor, Michigan**--this simple program allows homes to compare their current usage with that of similar buildings in their category based on current energy bills. If homes are in the 40th percentile of their category or lower, they receive the V.I.P. award.

o   **Home Energy Rating System, Denver, Colorado**--this is also a simple program comparing a home's usage with a data base of similar buildings. Buildings which are above average in savings receive a certificate. Buildings which are below average are urged to get an energy audit and complete a list of recommended measures.

o   **ViSAVia Program of Visalia, California**--awards standard points for each covered energy conservation feature based on the amount each would save if it had been installed in a 1965 base case house. The

points are then translated into a scale that describes the energy efficiency of the home.

o   **Home Energy Cost Estimator, Pennsylvania**--this is a detailed pamphlet which allows a homeowner to calculate the energy efficiency of his home as it currently stands and to estimate what it would cost to make a wide variety of improvements.

o   **CONN SAVE, Connecticut**--after an RCS audit is conducted, a series of four ratings are calculated using the same information. The four ratings show a homeowner how the home rates as it currently stands, how it would rate if it contained no conservation features, and how it would rate if two different packages of improvements are made.

o   **Modified Good Cents Program, Oklahoma**--establishes prescriptive standards for all types of housing and commercial buildings. To receive recognition, a building must contain enough of the prescribed items to reduce consumption by 30% in existing buildings and 50% in new ones. The aggressive marketing program pursued by the utility has made this program more successful than some other Good Cents programs.

o   **Energy Rated Homes of America, Western Resources Institute**--attempts to appraise the value of added energy features and have this value taken into account in the lending process. Standard points are awarded to conservation features, and a home can fall into 10 different categories depending on the features it contains.

Evaluation Approach

The principal operator of each program was contacted and requested to provide information about the adminstration, marketing, technical approach and results of the program. Information on all aspects of the program was gathered during a one to two hour phone interview and review of program materials.

Evaluation Results

The evaluation concentrated on: common/different characteristics of each program; key design factors that must be included for a complete program; key success factors; and key failure factors. This paper will cover only the similar/different characteristics of the programs.

Similarities between programs. The main similarity between the programs was that address energy use in existing homes as well as new homes and they were all voluntary in nature. Other similarities were:

o   Most of the ratings are free to the homeowner/buyer. A couple charge $10 and another between $140-180.

o   All programs were designed to match local needs and resources except two which use a national system modified to local needs.

o   Most of the programs were established based on the interest of an advisory committee of local citizens/professional organizations.

o   Development costs are not well documented.

o   Only one of the system operators had done any projections or goal setting to indicate the number of units they planned/hoped to rate each year.

o   None of the system operators had any idea of the incremental costs required to achieve each level of rating if there was more than one.

o   The majority of programs were developed by technical experts who didn't consider marketing issues or budgeting needs until after the systems were developed.

o   Liability is addressed by including a disclaimer on the rating form.

o   None of the local programs have attracted major participation by Realtors or lenders. Three have received approval from secondary mortgage market institutions.

o   Little has been done to track the number of homes that have been rated or determine the savings achieved.

o   All but one program operator felt that their marketing budgets were very inadequate.

o   Almost all of the systems are transferable, although costs would vary considerably. None could be transferred without a fair amount of modification for local building and administrative needs.

Differences between programs. The major difference between the programs was that each system takes a different view of what energy efficiency is. Some base it on a Btu/sq.ft. basis, some base it on having certain measures in the home, others base it on improvements having a specific payback period. In addition, each system looks at somewhat different sets of conservation measures to determine the efficiency of a house. Other differences are:

o   The reported cost of developing the programs ranges from less than $10,000 to nearly $1,000,000 not including in-kind costs.

o   Some programs rely on the cooperation of a large group of organizations to implement the program, and others are handled by a single agency.

o   Two programs have ended, one is stalled due to lack of funding, one program had been in development for over 4 years and was just being implemented, and two are reasonably successful and have reached a fair percentage of their intended audience.

o   Although most of the systems use a scale of some kind, there is no consistency among the scales. Points can range from 0-15 or more than 200. If points are grouped into rating categories, there can be

as few as two and as many as 10. Also the meaning of the scales vary
so that 0 can indicate either a very efficient or a very inefficient
home.

o   Retrofit guidance is provided by most systems, but the level of
     detail varies from lists of generic measures to specific
     recommendations for a structure including installation cost and
     payback calculations.

o   Marketing budgets range from the minuscule--$1000/yr. to over
     $100,000/yr.

o   Those who conduct the ratings vary from program to program. Two
     require some involvement from the homeowner, one is done entirely by
     the homeowner, three use utility personnel (though in very different
     ways), and one uses real estate appraisers or specially trained
     raters.

CONCLUSIONS

    Based on the information gathered on all of these programs and the
author's experience in implementing other programs, the main conclusions of
this evaluation show that program goals such. as community education,
conservation promotion, demand-side management, home mortgage financing,
equipment substitution, or public relations are the key factor in determining
the type of technical rating that is selected. Most programs pursue several
goals, but the goal that predominates has a major impact on technical
development and marketing.

Despite their benefits, home energy rating systems are complex activities to
implement. Those that have been most successful are free or low-cost to the
user; provide visible, effective marketing programs both to potential
homebuyers/homeowners and the building/remodeling community; simplify
technical information so that it is useful to builders, lenders, Realtors and
homeowners/buyers; obtain broad support throughout the building and
collateral industries; simplify requirements for participation in the
program; and, maintain on-going administrative and budgetary support for the
systems.

Technical accuracy seems to have less impact on the market acceptance of a
program than creative sustained marketing efforts but more effort has been
put into developing the technical accuracy than developing the marketing
aspects of the programs.

Based on this evaluation, Montgomery County selected the CONNSAVE model with
its relatively inexpensive add-on to a computerized RCS audit as the one
that would be the mostly likely to meet the needs of the utility companies
who, hopefully, would field the rating. A final decision and implementation
approach has yet to be reached.