

States unlikely to meet energy efficiency goals, says industry leader

Private sector 'pay from savings' needed

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*In the interview below, **Eileen McGinnis, president of CMC Energy**, explains why the US needs to alter its approach to energy efficiency, if it is to meet its current energy savings goals. McGinnis describes a strategy that is popular with homeowners because it allows them to pay for energy retrofits through monthly savings on utility bills. Based in Maryland, CMC Energy has been in business since 1977 and has served over 325,000 residential and commercial customers. The company has trained 2,000 auditors nationwide.*

Why do you think states are unlikely to reach their energy savings targets?

About half of the states have set goals to cut back substantially on their energy use. Their ambitions are laudable. But the programs depend on a significant public cash outlay. With states in financial trouble, lawmakers are beginning to raid funds meant for efficiency.

Even if funding is maintained, however, it will be difficult for states to reach their targets. The Maryland Energy Administration, for example, in its 2010 energy outlook admitted it won't be easy to reduce energy consumption 15% by 2015. The state is not even halfway to its target, and it will become more difficult to achieve these goals when the economy recovers and energy use rises.

What's the downside if states don't achieve their efficiency goals?

There are financial and environmental ramifications. We'll need to build more power plants to serve growing demand for electricity. It costs more to build power plants than to reduce consumption. If we build more generation, electric rates rise. In addition, some states charge utilities penalties if they do not meet energy savings targets. On the environmental front, more power plants mean more harmful air emissions. Keep in mind that the fuel source used the most in new power plants is natural gas, not renewable energy.

How do traditional government-backed energy efficiency programs fail?

There is something described by RESNET (Residential Energy Services Network) as the valley of death. This is the gap that exists between the audit recommendations and their actual implementation. Unfortunately, many homeowners never make it beyond the audit, even though government programs spend a great deal of money on marketing and education trying to encourage them.

Why don't homeowners follow through with audit recommendations?

Today's government-sponsored energy audit reports inadvertently discourage customers from investing by focusing on how many years it takes to recoup the money paid for each improvement (the payback). Homeowners tend to balk if payback exceeds five years. Thus, homeowners avoid the more expensive and sometimes deeper and more effective retrofits.

You say there is a private sector solution? What is this?

We've found it is far more effective to use an approach we call 'Pay from the Savings Group,' or PSG. With this approach you show each homeowner which group of energy efficiency improvements in their home can be paid out of the money they save on their energy bills each year.

When homeowners realize that their net savings (monthly energy savings minus monthly payments for improvements) will be positive, and that there is no down-payment, the vast majority decide to move forward with energy efficiency improvements. This compares to only 20 to 30 percent for government-sponsored programs. That's a huge difference in success rates.

Equally important, using PSG homeowners pursue not only the less expensive improvements, such as seal-up, programmable thermostats, and efficient light bulbs, but also more costly insulation, new windows, refrigerators, air conditioning and similar measures. Since the measures are grouped together to determine affordability, the lower cost measurements offset those that are higher cost.

Are there any pitfalls consumers should be aware of when undertaking a PSG project?

It's crucial that energy savings are calculated correctly. That is not always a simple matter. Too often measurements are exaggerated, or they do not take into account that energy savings will vary by house, depending on the structure's age, the efficiency of its heating/cooling system, the type of fuel it uses and the fuel price. You also need to take into account location, upkeep and the number of occupants. The analysis software needs to weigh these factors and shows customers which group of improvements lower their monthly energy bills enough to more than cover the cost of buying the energy efficiency improvements – with no down-payment.

It's not a straightforward calculation. The software must take into account the interrelationships between the improvements in the group. Most software calculates savings assuming all things remain the same. But of course, they do not.

For example, if you decide a house needs insulation and a new heat pump, it's important to consider how these two improvements will affect each other. Once you insulate, the heating load becomes smaller, and therefore the heat pump savings will be smaller. Likewise, the new, efficient heat pump will diminish the level of savings from the insulation. Finally, you can install a smaller heat pump which may lower the cost of the heat pump since you are lowering the heating/cooling load. Thus other software inflates the savings and sometimes the cost by basing them on the figures from the pre-insulated structure with the inefficient heat-pump. That's not accurate.

The following is a numerical example of how the savings are reduced when more than one improvement is installed.

1. The attic insulation is increased from R 10 to R 38.

2. The heating system, a gas furnace with an efficiency (AFUE) of 63, is replaced with one with an efficiency of 90.

Assuming that all other features remain the same, the dollar savings/year would be \$178 for the insulation and \$326 for the furnace replacement, if each were done in isolation.

But since they are not installed in isolation, the savings changes. Each measure impacts the other, so the insulation savings becomes \$125 and the furnace replacement savings \$216

Many software programs do not take this change in savings into account and therefore overinflate savings.

We've found that you have to record about 100 characteristics about the property and use software that performs about 1,000 calculations to determine the best combination of improvements. The PSG software does these calculations and generates and prints a detailed 15-20 page report in less than 20 minutes. This makes it possible to have a one-stop sale.

You described PSG as a private sector solution? Is there a government role in PSG?

Conventional government-based efficiency programs have become increasingly complicated, slow, expensive, and ineffective. They are not achieving the results of the private sector programs. With state funding in trouble, governments and utilities need to achieve more bang for their buck. They can do this by partnering with the private sector to take advantage of strategies like PSG, which we already know works.

More information is available at www.cmcenergy.com or by emailing:

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