

A Market-Driven National Weatherization Proposal

An innovative system for selling and financing building weatherization with reduced paperwork, no cost to the consumer, and improved value to the taxpayer compared with existing tax subsidies.



Mountain top removal at the Hobet 21 site in W Va.

We've taken the tops off of almost five hundred mountains to harvest coal at an efficiency of 1000 BTU coal to 300 BTU electricity to heat and cool the air leaking from poorly insulated homes.

There are a lot of houses that could save three to six hundred dollars a year by sealing leaky ductwork, air-tightening crawlspaces, basement ceilings and attic floors and by upgrading attic insulation. You could do this work for three to six thousand dollars and save enough money to pay for it if it could be financed on a six percent, fifteen year note.

By comparison a \$6,500 solar water heater saves \$300 per year, about half the rate of return of a basic weatherization package for a typical American house. Basic weatherization is our best, fastest investment for energy independence and climate stabilization. But it's not happening

because the low-income give-away programs, subsidized loan programs and tax credits are hampered by paperwork and our credit issues.

So, instead of treating this as a loan, we could treat it as a contract add-on to the utility service agreement. That credit application is already done; if you don't pay you get your power shut off, so no new credit check, no impact on home equity, no piles of paperwork. The property owner signs a contract specifying the work to be done, estimated total energy savings, additional cost and number of payments to be added to the bill and granting specific permission for the power to be shut

off to the home in the case of late payment. So long as the savings are equivalent to the additional cost on the bill the net cost to the occupant is zero and they also get better indoor air quality and improved comfort in addition to using less power and helping stop global warming.

The State Energy Offices could manage the sale of weatherization bonds, Community colleges train energy auditors and weatherization managers and crews who would be hired by insulation companies to sell and perform the work in neighborhood weatherization drives paid for by the State Energy Offices. The power companies would collect the money and pass it

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along to the bond holders.

Tax payers would not pay for the weatherization (or paperwork) and could save the subsidies for job training at the community colleges, strengthening the energy offices, and those solar water heaters.

We create more jobs, more energy independence, and less budget deficit and global warming...

Our government and non-profit organizations have tried a number of ways to encourage and finance weatherization, but Americans have proven to be relatively unmotivated as a group when it comes to improving the energy performance of our homes. We'll go along with it if the government will give it to us for free, and we're happy to receive tax credits for solar and window upgrades or other "Charismatic Megafauna" of the green building world. But the un-glamorous, yet more effective, work of sealing ducts, caulking windows, ceilings and floors and adding insulation to attics has proven resistant to widespread adoption.

There is an elegant solution, and it's not really that complicated, so please hear me out.

To sell weatherization on the mass scale necessary to repair the 75 million homes that need help here in America we need to

bring the interest rate down on the financing and use real building science to assess the work to be done and the resulting benefit that can realistically be expected. The reality is that America can see much more energy and green jobs benefit per dollar invested by supporting weatherization than we are currently receiving from government subsidized solar PV, small wind, solar hot water, replacement windows, or cash for clunkers. But we cannot go part way, we need a concentrated effort to assure that all ten points are addressed equally.

1: Bring the cost down.

We can do this at zero cost to the consumer. A typical weatherization project in New York is \$4,000 to \$6,000. It can save \$200 - \$600 per year depending on the state of the existing building. Such an investment can break even right away if financed at a rate and term that makes the monthly payment less than the energy savings. In the New York example above a 6% 15-year note would do it.

2: Separate the cost from the equity.

We can also eliminate a huge barrier to such investments: the consumer credit check and qualification for a home improvement loan.

In fact we can do this without lending the consumer a dime. The way to make this work is to 'use a machete to cut through red

tape.' We would write a contract rider on the building's electrical service agreement. The \$6,000 weatherization contract would add \$50 per month to the electrical bill while reducing average monthly energy costs by a similar amount and increasing the savings as energy costs rise. The property owner signs a contract specifying the work to be done, estimated total energy savings, additional cost and number of payments to be added to the power bill and granting specific permission for the power to be shut off to the home in the case of late payment. The contract will provide for transfers in ownership, actually adding to the property value for the next owner/occupant.

3: Don't ask utilities to support reduced demand for their product.

The utility companies would not sell or perform the work. Licensed and insured weatherization contractors would do that. The power companies would only administer the invoicing and loan servicing, capabilities that already exist in their current billing systems. They would be compensated for the administration, and could be permitted to participate in the lending as well, providing incentive and low risk financial return commensurate with their regulated profit margins. This minimizes resistance that happens when they are required to support demand reduction, which has traditionally hampered grid-tie acceptance.

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The state energy offices would contract with licensed and insured insulation contractors in bulk, a single sum to contact, survey, qualify, sell, weatherize and test-out a large number of homes within a certain time frame with a specific payment schedule. Participants would be required to employ licensed Building Performance Inspectors and maintain performance bonding and liability insurance.

4: Support the weatherization companies as they adopt this new business model.

The state energy offices would also supply the contract language to be used with the home-owners and negotiate a liability insurance package for all these programs that would cover incidental damage specifically related to this line of work such as filling closets with cellulose, breaking furniture, fire damage etc. I've been in construction for 33 years, I'm not sending a crew on a \$6,000 remodel without solid risk management consisting of good contract language backed up by insurance and good employee training.

The money would come from weatherization bonds, not the tax payers, and would be administered under supervision of the State Energy Offices. The financed improvement reflected on the monthly invoices would enhance the home equity. If the payment was not made the power would be turned off, if the home were sold or

rented the contract would transfer to the new customer.

5: Focus on projects that actually conserve energy commensurate with their cost.

The weatherization approval would be linked to the opportunity to save money rather than the creditworthiness of the customer or the value of the property.

Tax incentives for solar, window replacement and wood stoves would still have a place but they would likely not fit in this program unless they would result in a payment that would be less than 120% of the savings. Most Solar PV, solar hot water, demand water heaters and window replacements would not pass this test. My house would not qualify because it is too efficient already. But the 5,000 sq ft McMansion at the top of the hill probably would because fixing its leaky ductwork, upgrading the attic insulation and sealing the crawlspace would save enough to more than pay for the work.

By separating the cost of weatherization from owner's equity the program also would be attractive to landlords and renters who would improve comfort and indoor air quality and protect themselves from increasing energy prices at no out-of-pocket cost. A similar program would work for light commercial properties many of which have R-19 or less in their roofs and horrendous HVAC systems.

6: Marketing and selling are critical to success.

We cannot wait for the customers to come to us. We need to bring the weatherization sales to their neighborhood with a marketing campaign that includes direct mail and internet as well as local events at community centers. Working one neighborhood at a time can improve scheduling and logistics and also benefit from the tendency of similar homes to have similar problems.

The weatherization contractors would employ licensed home performance specialists to do the qualification and sales. The projects would be limited to buildings where the payment would be not exceed the savings by more than 20% (to anticipate increasing energy prices) but the contract would clearly disclose the scope of work and projected energy savings and inform the consumers in writing when a strategy would yield less savings than the additional cost. The work would have an immediate indoor air quality and comfort benefit and which would be an important part of the marketing as well. No-risk cost savings, comfort, and social responsibility benefits will combine to provide a strong incentive to get consumers to embrace the plan.

7: Keep costs down by organizing neighborhoods rather than random houses.

We need to create urgency with a limited time offer approach, sign

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people up in a neighborhood for a two weeks, do energy audits for a week, send in weatherization crews for a two weeks and then don't come back for six months. "We really want to help you save energy and have a less drafty home with improved indoor air and humidity but we'll be back in six months if you don't want to make an appointment now."

8: Put people back to work with a massive training program to educate building performance specialists, weatherization contractors and their crews.

The licensed building performance specialists would be trained by our community colleges in programs patterned after the Building Performance Institute training which incorporates indoor air quality and combustion safety with energy training. Carbon monoxide can be concentrated by air tightening strategies. Existing overloaded wiring can be insulated to the point that it becomes a fire hazard. Blown-in wall insulation can result in moisture accumulation, paint failure, mold and rot. The performance contractor's work would be licensed and reviewed by spot checking in the same way that pest control applicators work is subject to review and spot checking. Their licensing fees would help support this oversight.

The home energy savings qualification report would be itemized and prioritized to educate

the occupants about the most cost effective repair priorities and point out energy efficient habits and practices that would result in additional savings. A quality inspection performed at the completion of work would yield a report that could be used to certify the improved efficiency of the house when it is sold similar to the HERS reports Energy Star builders use to document the quality of our work. The cost of the energy audit work would be billed through the power company the same as the cost of the weatherization contract so the home owners would have "skin in the game" without needing to come up with cash to initiate the process. People who don't sign up for the weatherization package will be able to use the audit to inform future energy decisions.

9: We need a training program for weatherization managers as well

We will need to have a mechanism for handling over-promised jobs and dissatisfied customers and oversight for the inspectors. Oversight will be critical to keep motivated inspectors from over-promising to rack up sales and then skipping town. This is admittedly one of the more challenging aspects, but licensing, liability limiting language and bonding of the companies will mitigate the risk here. If a company had too many claims they would lose their bonding ability and fall out of the program. An energy guarantee component would be valuable once

we fine-tune the savings projection analysis.

10: Get Congress on board; make smart conservation incentives rather than lobbyist-based ones.

There have been energy efficient mortgages and weatherization programs before, but they failed to gain momentum because they required too much initiative from the consumer. In this proposal the weatherization contractors are motivated to go out and sign up whole neighborhoods. In Florida, Progress Energy had success with sending ice cream trucks into neighborhoods and giving away free ice cream while salespeople at card tables signed up prospects for energy audits and explained the program. The Pays America program had a great start but limited its program to customers who lived in really bad housing and failed to gain momentum by being too exclusive. The PACE program requires county by county adoption and is too paperwork intensive for a mass market approach.

Even if State or Federal subsidies were needed to buy down the interest rate to spur private investment we would get more work done for less impact on the budget deficit than we currently are with solar tax incentives and no-cost weatherization programs. I'm not calling for an end to these programs just asking that we focus expansion on a program that yields a better return. Solar water heaters cost \$6,500 and save less than

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\$300 per year. That industry is very dependent on tax subsidies. We can create many more jobs and save more energy if we focus our efforts on weatherization. And once we change the law to allow weatherization to be billed through the Power Company and set the structure in place for worker training and for selling the weatherization bonds the industry could be self-supporting without subsidies. We “teach a man to fish” as the saying goes.

This proposal would benefit all Americans who live or work in under-performing buildings.

My state, NC, has 100 counties but only one State Energy Office, one Utilities Rate Commission and a handful of electric companies. A program like this could get up and running quickly and put many people to work fixing our homes and improving indoor air quality and comfort for millions of citizens while reducing America’s dependence on coal and foreign oil, slowing global warming, and the expansion of our national debt. ■

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