

SEIZING THE PROMISE OF BUILDING ENERGY EFFICIENCY

CENTER FOR STATE INNOVATION

The federal government should encourage the comprehensive application of cost-effective efficiency measures to America's building stock ("retrofitting"). This effort can pay for itself, save consumers hundreds of billions of dollars (they're now spending \$400B annually on building energy bills), generate hundreds of thousands of good jobs, improve building occupant health and productivity, and substantially reduce national GHG/CO₂e emissions.

Short-term, federal government can do this by approving a supplemental to appropriations for the Energy Efficiency and Conservation Block Grant Program included in the pending stimulus package. This should focus on scaled urban building retrofits and allow an option of on-bill savings recovery. Longer-term, the government should provide: (1) a FERC guidance to investor-utilities that requires their offer of an on-bill savings recovery option for financing appropriate retrofit projects; and (2) credit guarantees and favored tax treatment for a \$50B revolving loan fund to support this work, which could be repaid through that same mechanism.

Here are 10 pertinent facts about American buildings, their energy use, and energy utilities that motivate these suggestions. (1) U.S. buildings account for 10 percent of global GHG/CO₂e emissions and two-fifths (39 percent) of domestic energy consumption, greater than the respective shares of transportation (33 percent) and industry (28 percent). This consumption share rises to 60+ percent in cities and reaches 80+ percent in especially dense cities like NYC. (2) U.S. buildings are grossly energy inefficient, wasting hundreds of billions of dollars annually in consumer energy expenditures and imposing significant health and productivity losses on building occupants. (3) Building efficiency can be substantially improved in cost-effective ways. Gains of 50 percent or more are available through application of known efficiency measures (e.g., more energy efficient lighting, insulation, HVAC systems, programmable thermostats, and common appliances). These are cost-effective on "simple terms," i.e., the energy savings they achieve over their lifetimes exceed their installation and maintenance costs. (4) Even with market costs of capital (e.g., return on 10-year T-bills), efficiency gains of at least 25 percent are cost-effective. (5) Most efficiency measures have 3-5 year paybacks, implying returns of 20-33 percent. These ROIs should increase with higher energy costs, better building technology, a smarter grid, the pricing of CO₂e emissions, and further development of markets in demand response, forward capacity, and carbon trading. (6) The savings from building efficiency measures are predictable enough to be used as collateral for borrowed capital sometimes needed to achieve them. Building retrofits thus not only pay for themselves; they can be privately financed. (7) Such collateralization requires investor confidence in the recovery and aggregation of achieved savings at low transactions costs, most effectively done through "on bill recovery" of savings on ordinary utility bills, with the same penalties for non-payment applied to ordinary utility service. (8) Most utilities don't offer such on-bill recovery, however (though some state legislatures [HI] and public service commissions [KS, NH] have either ordered or approved the practice). (9) If this option were available nationally, we could realize tremendous economies in offering all energy customers installation of cost-effective energy-efficiency measures with no up-front payment, no new debt obligation, immediate savings, and a payment obligation that ended when they quit the property and moved to the next tenant or owner. (10) The loan of additional public dollars at low to negative rates of interest is still recommended on policy grounds, however, to make efficiency investments with lower positive ROIs than market rates.