

Summary of the American Recovery and Reinvestment Act of 2009 from the Perspective of Propane-Related Building Technologies

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SUMMARY

This report summarizes the “Stimulus Package” (signed 2/17/09) from the perspective of PERC, and specifically with building technologies in mind. The information presented here is based on review of the legislation itself, the Conference Report, and multiple industry sources including US DOE, ACEEE, and the DOE-supported Database of State Incentives for Efficiency and Renewables.

The highlights of the Stimulus Package from PERC’s perspective include:

- Extension of federal tax credits for energy efficient technologies in existing homes. This includes extending the timeframe for these credits through the end of 2010, increasing the credit cap to 30% of the cost of energy efficient equipment (“cost” also includes labor included for heating, cooling, and water-heating systems), and changing the qualifying requirements.
- \$300 million into the states’ energy efficient appliances programs, which allows states to offer rebates/incentive for ENERGY STAR rated residential products. The availability of state-level rebates for specific products can be reviewed at the Database of State Incentives for Efficiency and Renewables (www.dsireusa.org).
- Federal \$ into general construction efforts: weatherization, low-income projects, and military housing.

Details on these issues are shown in the following pages, with particular emphasis on the federal tax credits.

As far as promoting these developments for the benefit of the propane industry, potential messages include:

- States should use Stimulus Package funds to provide significant incentives for EE propane technologies including heating systems and water heaters. These systems will save consumers money and help making the cost of housing more affordable - even as energy prices fluctuate in the future. High efficiency propane systems will also result in carbon emissions savings relative to the systems they replace.
- Consumers should take advantage of the federal tax credits available for efficient propane space- and water-heating systems. Benefits include: federal tax CREDIT on equipment change-outs, plus other applicable state-, propane organization, and utility-based incentives (see www.dsireusa.org), significant energy savings, greater comfort, and reduced emissions. The new Stimulus Package raises the cap available on the credit to \$1500, and the 30% federal tax credit can be applied to labor and material costs for new high efficiency propane heating and water heating equipment.
- First-time home buyers using the \$8000 tax credit will be able to afford more house. When the purchase is for a new home, buyers should use this extra buying power to choose high efficiency propane heating and water heating systems to make these homes efficient and affordable over the long run.
- When evaluating improvements to existing homes – states, weatherization organizations, and home owners should carefully weigh their options. Changing out HVAC equipment will often save much more energy than other more costly upgrades like new windows. Plus the 30% tax credit for efficient propane heating systems can also be applied to labor and material costs, which isn’t the case for building envelope improvements like windows.

BACKGROUND

This is a summary of The American Recover and Reinvestment Act of 2009, better known as the Stimulus Bill. The bill has two main parts: spending and taxes. This summary begins by discussing the spending side broken down by departments. Then, tax credits are discussed.

SPENDING

The spending portion of this bill was designed to get monies to projects quickly. Most infrastructure projects have a stipulation that the state or authorizing body obligates the money in 30, 45 or 90 days, depending on the project. Money not obligated is sent back to the federal agency and redistributed to states or offices with projects ready to be started. However, this doesn't mean money will be spent in the required time, but that the project is signed for. Bigger projects (bridges, airports) are required to be completed within three years. The pressure to spend money has been largely pushed to the states and it will be interesting to see which states can get procurement moving.

Department of Energy:

U.S. DOE will get \$16.8 billion for the Energy Efficiency and Renewable Energy program, of which most is for renewable energy production and grid improvements.

\$5 billion will be given to the Weatherization Assistance Program. Of which, \$4 billion will be given to states through existing formula, with \$1 billion distributed through competition. New language to weatherization program includes:

“the Secretary may encourage States to give priority to using such funds for the most cost-effective efficiency activities, which may include insulation of attics if in the Secretary's view, such use of funds would increase the effectiveness of the program”

Also, the eligibility of low income households was raised and the funding assistance level per dwelling unit was increased from \$2,500 to \$6,500.

\$300 million will be put into the Energy Efficient Appliance Rebate program and the ENERGY STAR Program. This money is dispersed through state-level programs, typically through a state's energy office. States have some latitude in which types of residential equipment that they choose to incentivize, and not all states have such programs. The availability of state-level rebates can be reviewed at the Database of State Incentives for Efficiency and Renewables (www.dsireusa.org).

\$3.2 billion for DOE's Energy Efficiency and Conservation Block Grant, most of the monies will be distributed through the existing formula and \$400,000,000 to be awarded competitively. These funds are intended for states, Indian Tribes, and units of local government to develop and implement energy efficiency and savings strategies for different sectors including buildings. Funds can be used for initiatives such as loan programs or rebates for efficient equipment. For more information see this DOE website www.eere.energy.gov/wip.

This \$3.1 billion for State Energy Program has an interesting caveat regarding building codes. States that receive funding from the Dept of Energy under this program will have to have:

- Residential energy code equal to or higher than the most recently published in ICC
- Commercial energy codes that meet or exceed ASHRAE 90.1-2007

Or plan to enact such codes within the next 8 years. Information on the code status of states is available on the International Code Council's website at www.iccsafe.org/government/adoption.html.

It will be interesting to watch states adopt ASHRAE 90.1 and ICC codes. This money can be used to expand current state energy efficiency programs.

Department of Housing and Urban Development:

- \$4 billion to the public housing capital fund, of which \$3 billion to be distributed to state public housing agencies under the existing formula. Money will not be obligated to projects by HUD/DC but by HUD local offices.
 - \$1 billion (of the \$4 billion) will be distributed by competition to priority investments, including investments that leverage private sector funding or financing for renovations and energy conservation retrofit investments.
 - Money must go to improvements – not into assistance programs (vouchers).

This money will be used by public housing agencies to improve publicly owned buildings. Of this \$4 billion, the CBO projects \$80 million to be spent in 2009, and \$1.2 billion in 2010 and 2011, \$800 million in 2012, and \$40 million in 2013 and 2014.

Other HUD money:

- \$510 million to Native American housing block grants for similar capital improvement rehabilitation projects.
- \$250 million will support a program to upgrade HUD-sponsored low-income housing to increase energy efficiency, including new insulation, windows, and furnaces.

It is expected the public housing agencies will also purchase homes, probably foreclosed, and incorporate into their portfolio. The distribution will depend on the efficiency of each public housing office to get moving quickly.

Note: Money is prohibited from going to troubled agencies.

Depart of Defense:

It appears that the previous language for energy efficiency improvements for military housing was stripped in conference. Although each armed forces branch will receive money to improve facilities, with at least \$153,500,000 for enhancing the energy efficiency of barracks. This money is predominately given to each branch to clear up the backlog of capital improvement projects that may or may not involve energy efficiency.

However, the Army will receive \$34,507,000 for family housing construction and \$3,932,000 for family housing operation and maintenance. Air Force will get \$80,100,000 and \$16,461,000 for the same categories.

Army, Navy/Marines & Air force each have additional military construction of \$100,000,000 for energy conservation and alternative energy projects. But have 30 days to submit project to Appropriations Committees. Again, it is not known how much of this will be industrial, commercial, or residential projects.

\$120,000,000 shall be given to the military wide Energy Conservation Investment Program.

There are multiple mentions of energy upgrades for military hospitals, including VA's.

General Services Administration:

GSA section states that "not less than \$4.5 billion shall be available for measures necessary to convert GSA facilities to High Performance Green Buildings, as defined in section 401 of Public Law 110-140." And \$4,000,000 shall be transferred to and merged with "Government-Wide Policy", for the Office of Federal High-Performance Green Buildings.

TAXES

There is now an \$8,000 tax credit for first time home buyers; this includes buyers of both new and existing homes.

Removal of Dollar Limitations on Certain Energy Credits. Under prior law, businesses were allowed to claim a thirty percent (30%) tax credit for qualified small wind energy property (capped at \$4,000). Individuals were allowed to claim a thirty percent (30%) tax credit for qualified solar water heating property (capped at \$2,000), qualified small wind energy property (capped at \$500 per kilowatt of capacity, up to \$4,000), and qualified geothermal heat pumps (capped at \$2,000). **The Stimulus Package repeals these individual dollar caps.**

As a result, each of these properties would be eligible for an uncapped thirty percent (30%) credit. In the case of geothermal systems, expenditures which qualify for the 30% credit include labor costs for onsite preparation, assembly, or original system installation and for piping or wiring to interconnect a system to the home. Further, if the federal tax credit exceeds tax liability, the excess amount may be carried forward to the succeeding taxable year.

Tax Credits for Energy-Efficient Improvements to Existing Homes. The Stimulus Package legislation extended the tax credits for improvements to energy-efficient existing homes through 2010. Under prior law, individuals were allowed a tax credit equal to ten percent (10%) of the amount paid or incurred by the taxpayer for qualified energy efficiency improvements installed during the taxable year, **now it is 30%.**

Previously, this tax credit had been capped at \$50 for any advanced main air circulating fan, \$150 for any qualified natural gas, propane, oil furnace or hot water boiler, and \$300 for any item of energy-efficient building property. For 2009 and 2010, the Stimulus Package increases the amount of the tax credit to thirty percent (30%) of the amount paid or incurred by the taxpayer for qualified energy efficiency improvements, up to a \$1500 cap.

Notably, expenditures which qualify for the 30% tax credit include **labor and material costs** for assembly and original installation of this property – in the case of heating, cooling, and hot water equipment. However in the case of building envelope improvements (windows, doors, skylights, roofing, insulation), qualifying expenditures only include the cost of the material (no labor).

"Double-Dipping" on Credits: The previous regulations restricted the use of the federal personal tax credit for efficient equipment if a homeowner received another type of subsidy or rebate (e.g., state or utility program) for a technology. This restriction has been eliminated, so if certain technology qualifies for a state-level rebate as well as a federal personal tax credit – both would apply.

The Stimulus Package also updated the energy-efficiency standards of the equipment qualifying for the credit, as shown in the table below.

The table below reviews Federal Tax Credits for Energy Efficiency available to homeowners. The base table shown below is from DOE, and is based on the requirements and specifications set forth in the October 2008 Emergency Economic Stabilization Act of 2008. These were essentially the rules for these tax credits up until the Stimulus Package was passed. The **highlighted** sections below point out key differences in the tax credits established by the American Recovery and Reinvestment Act of 2009 (the Stimulus Package) relative to the terms that were already in place. Changes include different ceilings on tax credits, different rules on applicability, and different minimum requirements for energy efficient equipment.

SUMMARY OF FEDERAL TAX CREDITS FOR HOMEOWNERS

Product Category	Product Type	Tax Credit Specification	Tax Credit
Windows & Doors	Exterior Windows and Skylights	ENERGY STAR qualified OR meets IECC ¹ Window specs of $U \leq 0.30$ and $SHGC \leq 0.30$	10% of cost, up to \$200² for all windows, skylights and storm windows 30% of cost (materials only) up to the \$1500 overall cap
	Storm Windows	Meets IECC ¹ in combination with the exterior window over which it is installed, for the applicable climate zone	10% of cost, up to \$200² for all windows, skylights and storm windows 30% of cost (materials only) up to the \$1500 overall cap
	Exterior Doors	Meets IECC ¹	10% of cost, up to \$500² 30% of cost (materials only) up to the \$1500 overall cap
	Storm Doors	In combination with a wood door assigned a default U-factor by the IECC ¹ , and does not exceed the default U-factor requirement assigned to such combination by the IECC	10% of cost, up to \$500² 30% of cost (materials only) up to the \$1500 overall cap
Roofing	Metal Roofs, Asphalt Roofs	ENERGY STAR qualified	10% of cost, up to \$500² 30% of cost (materials only) up to the \$1500 overall cap

Insulation	Insulation	Meets 2000 IECC & Amendments Meets 2009 IECC and Supplements	10% of cost, up to \$500 ² 30% of cost (materials only) up to the \$1500 overall cap
HVAC	Central A/C	Split Systems: EER >=12.5 SEER >= 15 Package systems: EER >= 12 SEER >= 14 No change in Stimulus Package	\$300 ² 30% of cost (including labor and materials) up to the \$1500 overall cap
	Air Source Heat Pumps	HSPF >= 9 EER >= 13 SEER >= 15 ASHPs are now eligible at SEER ≥ 15 and HSPF ≥ 8.5	\$300 ² 30% of cost (including labor and materials) up to the \$1500 overall cap
	Geo-Thermal Heat Pump	Same criteria as ENERGY STAR: Closed Loop: EER >= 14.1 COP >= 3.3 Open Loop: EER >= 16.2 COP >= 3.6 Direct Expansion: EER >= 15 COP >= 3.5 No change in Stimulus Package	30% of the cost, up to \$2,000- 30% of cost – no cap. Costs can include equipment plus costs allocable to onsite preparation, assembly, or original installation of property
	Gas, Oil, Propane Furnace or Hot Water Boiler	Furnaces: AFUE >= 95 Boiler:	\$150 ² 30% of cost (including labor and materials) up to the \$1500 overall cap

		<p>AFUE \geq 95</p> <p>NG and propane furnaces – no change, still AFUE \geq 95</p> <p>Oil-fired furnaces now eligible \geq 90 AFUE</p> <p>NG, propane, and oil boilers \geq 90 AFUE</p>	
	Advanced Main Air Circulating Fan	No more than 2% of furnace total energy use	<p>\$50²</p> <p>30% of cost (including labor and materials) up to the \$1500 overall cap</p>
Water Heaters	Gas, Oil, Propane Water Heater	<p>Energy Factor \geq 0.80 or a thermal efficiency of at least 90%.</p> <p>EF \geq 0.82 or Thermal Efficiency \geq 90% is new threshold</p>	<p>\$300²</p> <p>30% of cost (including labor and materials) up to the \$1500 overall cap</p>
	Electric Heat Pump Water Heater	Same criteria as ENERGY STAR: Energy Factor \geq 2.0	<p>\$300²</p> <p>30% of cost (including labor and materials) up to the \$1500 overall cap</p>
Biomass Stove	Biomass Stove	<p>Stove which burns biomass fuel⁵ to heat a home or heat water.</p> <p>Thermal efficiency rating of at least 75% as measured using a lower heating value</p>	<p>\$300</p> <p>30% of cost (including labor and materials) up to the \$1500 overall cap</p>
Solar Energy Systems	Solar Water Heating	<p>At least half of the energy generated by the “qualifying property” must come from the sun. Homeowners may only claim spending on the solar water heating system property, not the entire water heating system of the household.</p> <p>The credit is not available for expenses for swimming pools or hot tubs.</p> <p>The water must be used in the dwelling.</p> <p>The system must be certified by the Solar Rating and</p>	<p>30% up to \$2000 cap for systems placed in service prior to 1/1/09</p> <p>30% of cost – no cap</p>

		Certification Corporation (SRCC).	
	Photovoltaic Systems	Photovoltaic systems must provide electricity for the residence, and must meet applicable fire and electrical code requirement.	30% up to \$2000 cap for systems placed in service prior to 1/1/09 30% of cost – no cap
Small Wind Energy Systems	Residential Small Wind Energy Systems	100 kW maximum size	Wind turbines placed in service in 2008 received a 30% credit up to a \$4,000 cap 30% of cost – no cap
Fuel Cells	Residential Fuel Cell and micro-turbine system	Efficiency of at least 30% and must have a capacity of at least 0.5 kW	30% of the cost, up to \$1500 per .5 kW of power capacity
Cars	Hybrid gasoline-electric, diesel, battery-electric, alternative fuel, and fuel cell vehicles		Based on a formula determined by vehicle weight, technology, and fuel economy compared to base year models
	Plug-in hybrid electric vehicles		\$2,500–\$7,500 Note: This is effective 1/1/09. The first 250,000 vehicles sold get the full tax credit (then it phases out like the hybrid vehicle tax credits).

¹Either the 2001 Supplement of the 2000 International Energy Conservation Code or the 2004 Supplement of the 2003 International Energy Conservation Code.

²Subject to a \$500 maximum per homeowner for all improvements combined.

³A Manufacturer's Certification is a signed statement from the manufacturer certifying that the product or component qualifies for the tax credit. The IRS encourages manufacturers to provide these Certifications on their website to facilitate identification of qualified products. Taxpayers must keep a copy of the certification statement for their records, but do not have to submit a copy with their tax return.

⁴Additional information on exterior window features may be viewed at [Anatomy of an Energy Efficient Window](#).

⁵Biomass Fuel means any plant-derived fuel available on a renewable or recurring basis, including agricultural crops and trees, wood and wood waste and residues (including wood pellets), plants (including aquatic plants), grasses, residues, and fibers.