

Comments of the American Council for an Energy-Efficient Economy on Staff Discussion Draft: Energy Tax Reform

January 31, 2014

We compliment the Senate Finance Committee for beginning an effort to reform the tax code. The American Council for an Energy-Efficient Economy is a research organization founded in 1980 that focuses on technologies, programs and policies that improve energy efficiency in the United States. For the past two years we have researched ways the current tax code impedes cost-effective investments in energy efficiency, and ways to improve the tax code so it encourages energy efficiency investments with limited cost to the federal government. Our research is summarized in a February 2013 report.¹ In these comments we discuss tax incentives for energy efficiency, and also comment on the proposed clean electricity and clean fuels tax credits.

The Staff Proposal

The staff discussion draft proposes to phase out many existing tax incentives “in order to target tax incentives on areas that appear to have the largest “bang for the buck” in reducing air pollution and enhancing energy security, given concerns about overlapping regulations and spending programs, compliance costs, and the potential for fraud or abuse,” according to a summary of the proposal. Among other provisions, the staff draft phases out all current incentives for energy efficiency, but does include a proposal for incentives for clean electricity that would begin in 2017 and be phased out after reaching greenhouse gas intensity goals for electric generation specified in the proposal. The staff proposal notes that “staff is concerned about the abuse of energy efficiency tax credits for residential home improvements that was highlighted by a September 2011 report by the Treasury Inspector General for Tax Administration citing thousands of fraudulent tax returns claiming the credit.”

ACEEE supports the notion of limiting the number of energy tax incentives, targeting incentives that have the largest bang for the buck, and phasing out tax incentives when specified goals are reached. However, we think staff has erred in eliminating all energy efficiency tax incentives, as efficiency incentives can provide the greatest bang for the buck in achieving air pollution and energy security goals (even more than the proposed clean electricity tax incentive).

Bang for the Buck from Energy Efficiency Tax Incentives

The staff draft proposes a tax credit of \$0.023 per kWh for zero emissions electricity. Energy efficiency savings have zero emissions, since there are no emissions from electricity that is saved and therefore does not need to be generated. ACEEE’s February 2013 report (cited in footnote 1) estimated the average cost to the federal government of various energy efficiency tax incentives. Converted to federal cost per kWh

¹ Nadel and Farley. 2013. *Tax Reforms to Advance Energy Efficiency*. Washington, DC: American Council for an Energy-Efficient Economy. <http://aceee.org/research-report/e132> .

saved,² this means that even the most expensive efficiency measure we examined costs \$0.023, the same as the proposed clean electricity credit, and all of the other efficiency options are less expensive:

Efficient commercial buildings	\$0.0002/kWh
Efficient new homes	\$0.0007/kWh
Commercial building retrofits	\$0.0012/kWh
Whole building residential retrofits	\$0.0133/kWh
Insulating and air sealing homes	\$0.0233/kWh

Clearly these energy efficiency measures give more bang per federal buck than the proposed clean energy incentive, and, therefore, we urge that several critical energy efficiency measures be included in the next proposal.

The Treasury Inspector General Report

The staff draft cites a 2011 Treasury Inspector General report that found that some individuals who were not eligible may have claimed residential energy credits. Most importantly, their audit found that 5% of people claiming the credit may not own their homes, a level subsequently reduced to 1.5% based on examinations by the Inspector General of records available to the IRS on a statistically valid sample from this 5%.³ Some of these 1.5% are probably homeowners since there are likely inaccuracies and missing data in the databases available to the IRS. The Inspector General also found that 262 prisoners claimed tax credits and 100 underage individuals, both very small numbers given the more than 6 million tax credit claimants during this period. In total, claimants who are not homeowners might be on the order of 1% of claims, a relatively modest number. Furthermore, the Inspector General suggested a number of reforms, and the IRS agreed to implement all of them, likely reducing the percentage of problems in subsequent years. We are not condoning this abuse, but the amount of abuse appears to be very small and largely correctable. In addition, the other efficiency incentives are for businesses rather than individuals, with different requirements, so any conclusions on fraud are not transferable. All tax benefits can be abused to some extent, including renewable energy credits and special oil and gas tax treatments. But rather than addressing all tax incentives that can be abused, the staff draft singles out just energy efficiency. This is not a balanced approach.

The Proposed Clean Electricity Credit

The staff draft proposes a credit of up to \$0.023/kWh for clean electricity, with eligibility beginning at emissions levels just 25% below the national average emissions per kWh. Depending on the source of

² These credits ranged in cost from \$0.02 per million Btu saved for commercial new construction incentives to \$2.33 per million Btu for insulating and air sealing homes. Most of these savings are in electricity and can be converted to cost per kWh by dividing by 100. This is based on needing 10,000 Btu of fuel to produce a kWh of electricity, the same assumption used in our February study to estimate the Btu savings in the first place.

³ As noted on p. 5 of the Inspector General's report, they found that 70% of potential non-homeowners did in fact own homes, while they could not find a record of home ownership for the other 30%.

data used, conventional gas generation might qualify, which would be a bonanza for the many new gas plants that are being proposed.⁴ The Energy Information Administration estimates in their *2014 Annual Energy Outlook* that 29,000 MW of new gas-fired combined-cycle plants will be built in the next decade even without the proposed new credit. Awarding them credits would appear to be a waste of federal money. To correct this problem we recommend that the requirement to qualify for the credit be tightened to about 40% below the national average emissions per kWh. Very efficient natural gas plants would qualify, such as combined heat and power systems, but conventional gas plants would not. This change would reduce the number of “free riders” so that limited federal funds can be focused on more innovative ways to reduce emissions (free riders are taxpayers who take the credit, but would have taken the same actions if no credit were offered).

Similarly, we have been asked if we would favor including energy efficiency under this proposal, with a credit of \$0.023/kWh saved. We do not think this is optimal because many efficiency measures that would be adopted anyway will qualify. Instead, just as with gas generation, tax credits for energy efficiency should promote advanced energy-saving technologies that do not currently have large market share.

Providing Limited Energy Efficiency Tax Incentives Based on the Principles in the Staff Proposal

In the case of energy efficiency, we recommend an integrated tax incentive structure for buildings that covers both residential and commercial buildings, including new buildings and major retrofits. While the incentives can be coordinated, the details of estimating savings and baselines will differ by building type.

New construction is important because it is much less expensive to build efficient buildings than to build inefficient buildings and then retrofit them later. Also, by fostering advanced building techniques through the tax code, we can demonstrate workable techniques, and as the market share of these techniques grow, they can be incorporated into building codes that apply to most new buildings, thereby meaning these techniques will be included in most new buildings without further tax incentives.

Whole building retrofits are important because these approaches save large amounts of energy, but the market to promote these approaches is just getting going. According to the Energy Information Administration’s *2014 Annual Energy Outlook*, the majority of building energy use in 2040 will be in buildings that are in use today. Tax incentives can help jump start the building retrofit market, and then be phased out when the market matures.

Until the end of 2013, sections 45L and 179D of the tax code encouraged efficient new homes and commercial buildings respectively. Reformed credits for new homes and commercial buildings could build on these past credits but adopt a structure similar to the proposed clean electricity credit. For

⁴ For example, NETL found typical emissions for a combined-cycle natural gas plant of 365 g CO₂e/kWh (http://www.netl.doe.gov/energy-analyses/pubs/NGCC_LCA_Report_093010.pdf), which is below the level of 372 g CO₂e/kWh needed to qualify for the credit.

example, credits can be given for new buildings whose energy use is substantially lower than required under national model building codes, with the credit increasing as the energy savings increase. We would recommend starting the credit at 25% savings relative to code, and ramping up to a maximum of 100% savings, but excluding renewable energy property for which a separate incentive is taken. The 25% savings floor may have to increase over time as building codes increase in stringency, or the baseline could be raised and the 25% savings calculated relative to the new baseline. Either way, the intent is to only incentivize new buildings that substantially exceed codes. This revision process should be delegated to the Secretary of the Treasury, working with the Secretary of Energy. The credits could phase out when the average new home or new commercial building uses half the energy of the average new home or building in 2013.

For existing homes, the section 25C credit recently expired, and a proposal for a whole home retrofit credit was introduced in the last Congress by Senators Bingaman, Snowe and Feinstein (S. 1914). For existing commercial buildings, the section 179D credit has helped mostly with lighting retrofits, and a much more comprehensive proposal was introduced in the last Congress by Senators Cardin, Bingaman, Snowe and Feinstein (S. 3591). Reformed credits for existing homes and commercial buildings could build on these proposals from the last Congress but adopt a structure similar to the proposed clean electricity credit. For example, credits can be given for existing homes and commercial buildings which reduce their energy use by at least 20% relative to their pre-retrofit energy use, with the credit increasing as savings increase, up to at least 50% savings (these specific numbers come from S. 1914 and S. 3591; we suggest 20% for retrofits, rather than the 25% used for new construction because achieving savings in existing buildings is more difficult). The credits could phase out when 10% of existing homes and 10% of existing commercial buildings were retrofitted, enough to help establish a long-term building retrofit market.

A Note on the Proposed Clean Transportation Fuel Tax Credit and Incentives for Efficient Vehicles

For motor vehicles, as for other energy using equipment, improving fuel efficiency is a highly cost-effective approach to reducing emissions. For example, the fuel economy (CAFE) standards that the National Highway Traffic Safety Administration (NHTSA) intends to consider for model years 2022-2025, are projected to save fuel at a cost of less than \$0.75 per gallon,⁵ well below the \$1 per gallon proposed in the staff discussion draft as the clean fuel production credit for a fuel with zero lifecycle emissions. This includes advanced technology vehicles that have not yet entered the market in large numbers and that would benefit from purchase incentives over the next decade. Excluding vehicle efficiency from energy tax incentives would miss one of the biggest and most cost-effective opportunities for energy savings and emissions reductions available in any sector.

As in the case of the clean electricity credit discussed above, we do not advocate a blanket incentive for efficient vehicles. Both CAFE standards and vehicle market dynamics will help to drive the market towards efficient vehicles, so it is not necessary to spend tax dollars to support their purchase across the board. At the same time, auto manufacturers have long cautioned that the success of CAFE standards ultimately will depend upon a shift toward greater consumer demand for fuel efficiency. This is particularly important for the more advanced technologies, which both are unfamiliar to consumers and typically have a large purchase price increment, though the fuel savings are correspondingly high. A

⁵ 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards. Federal Register, Vol. 77, No. 199 (2012).

technology-neutral purchase credit for vehicles that use less than half as much fuel as today's average new vehicle (achieving roughly 50 miles per gallon sticker value), could promote the development of these vehicles. At \$0.75 per gallon saved over the life of the vehicle, the amount of the credit for such a vehicle would be between \$2,500 and \$5,000, depending on its fuel efficiency. The precise structure and parameters for such a credit would need to be considered carefully and adjusted over time, as average fuel economy increases. We would be pleased to provide the Committee with suggestions regarding these details.

For a vehicle that runs on a non-petroleum fuel, we support the Committee's proposal that eligibility for and amount of any such credit would reflect the fuel's life-cycle emissions as determined by the EPA. Vehicles qualifying for the credit suggested above would generally be plug-in or fuel cell vehicles. By contrast, the clean transportation fuel tax credit proposed in the staff discussion draft would benefit plug-in vehicles minimally. Reducing the cost of electricity is not the key to driving the market penetration of plug-ins; it is the high upfront cost of the vehicle that must be addressed. Furthermore, the emissions reduction from an electric vehicle charged on today's average grid mix are due to the efficiency of the motor, not to the cleanness of the fuel.

The role of technology-neutral, per-gallon credit in driving advanced, clean vehicles can be illustrated by the following example: The Department of Energy's *EV Everywhere* program sets a 2022 target of widely available electric vehicles for which the total cost to own and operate is less than that of a comparable gasoline-powered vehicle after five years of ownership. However, the auto industry commonly states that a fuel efficiency improvement must pay back within three years before consumers will buy it in large numbers. A tax credit of \$0.75 per gallon saved, adjusted to reflect electricity consumption, would bring the payback for an electric vehicle in 2022 from five years down to less than three years, bringing these vehicles into the mainstream auto market.

We recommend a similar incentive be considered for heavy-duty vehicles. In this case, fuel consumption reductions of 25% relative to an average comparable vehicle would be a reasonable lower bound for the required reductions. Tax credits could help to bring hybrids to market for heavy-duty applications involving stop-and-go driving or work site power demands, saving thousands of gallons of diesel per vehicle per year. They could also spur the development of very advanced aerodynamics for line-haul tractor trucks.

With regard to the Committee's request for comment on the option of imposing fees instead of, or in addition to, providing incentives, ACEEE supports the development of a "feebate" program for vehicles, under which a new vehicle buyer is either paid a rebate or charged a fee in proportion to emissions of the purchased vehicle relative to the average vehicle sold. A feebate can provide a revenue-neutral and technology-neutral means of aligning the vehicle market with the increased need for fuel economy under the current CAFE standards.

Conclusion

The staff draft would simplify energy tax incentives and establish performance-based incentives that would phase out when targets are reached. However, the proposal errs in excluding incentives for energy efficiency measures which provide more bang for the buck than the proposed incentives. The limited problems with implementation of the old residential tax credit can be corrected and also do not apply to business credits. We recommend that the structure of the staff draft be extended to include new and existing homes and commercial buildings as well as light- and heavy-duty vehicles. We would be happy

to work with staff on the details of such incentives. By including incentives for energy efficiency, the desired emissions reductions and fuel savings can be achieved more cost-effectively.