Why a Manufacturer Tax Credit (45M) for Heat Pumps and Heat Pump Water Heaters

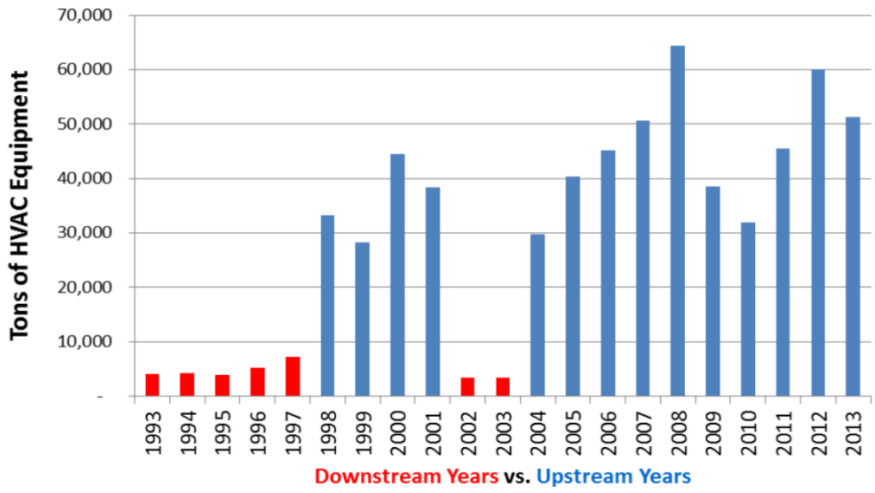
Background: space and water heating combined represent 62 percent of all U.S. home energy use,[1] making these two end-uses critical to reducing energy use and emissions from buildings. Heat pumps and heat pump water heaters are highly efficient equipment that reduce energy consumption, utility costs, and carbon emissions by 50 to 70 percent over conventional electric alternatives. Emissions reductions relative to conventional oil and gas equipment vary from neutral to 70 percent on today's electric grid, depending on the region, and will increase as emissions from the electric grid continue to go down.

High-efficiency models can also reduce air conditioning costs and emissions. Modern heat pumps are reliable and broadly available but are a small portion of the water heater market and a minority of the space heating market due to higher upfront costs, which remain a barrier to adoption by customers whose purchasing decisions are largely influenced by first cost. Incentives are needed to accelerate their market adoption and bring down equipment and installation costs through market scale.

Manufacturer tax credits are the most cost-effective way to jumpstart the heat pump market - NRDC and ACEEE support manufacturer tax credits for heat pumps and heat pump water heaters. Manufacturers would be eligible for a credit based on the increase in the number of units they make. Manufacturer tax credits have the following benefits over consumer tax credits:

- **Manufacturer tax credits have a bigger market impact**: manufacturer credits result in lower prices at the time of sale, which is much more effective at getting consumer attention than a tax credit that consumers need to claim on their taxes months later. A study on upstream incentives by the Southwest Energy Efficiency Project reports that PG&E rebates for commercial high-efficiency air conditioners were 5 to 10 times more effective during periods of upstream vs. consumer incentives:[2]

Figure 2 | PG&E Commercial HVAC Program Results: 1993-2013



[1] U.S. Energy Information Administration, Residential Energy Consumption Survey 2015 (for site energy)

[2] http://www.swenergy.org/data/sites/1/media/documents/publications/documents/Upstream_Utility_Incentive_Programs_05-2014.pdf

- **Manufacturer tax credits will spur domestic job creation** by requiring that equipment be manufactured in the U.S. after a reasonable period to allow industry to develop manufacturing capacity in the U.S. In addition, installation jobs are well paying jobs that cannot be outsourced.
- **Manufacturer tax credits are more equitable**: Low-income households often cannot afford to front the money to get a tax credit later or may not pay taxes at all. A price reduction at point-of-sale eliminates this barrier. In addition, low-income households are more often renters and do not make purchasing decisions for this equipment, although they often pay the energy bills. Making it easier for landlords to purchase more efficient technology will allow more renters to benefit from the tax credit.
- **Manufacturer tax credits encourage innovation:** Enacted in 2005, the 45M tax code provision provided credits to manufacturers for producing their most efficient refrigerators, clothes washers and dishwashers. The credit allowed models meeting the eligibility standards to become affordable to a wider segment of customers than they would have reached otherwise—and encouraged manufacturers to push them through marketing and promotions. Increased sales, in turn, created economies of scale that brought prices down further and encouraged producers to innovate by developing more-efficient products and diversifying their product lines.[3]
- **Manufacturer tax credits make taxpayer dollars go further**: the reduction in manufacturer costs can be increased by up to 75 percent as distributors and contractors each add a smaller fixed-percentage markup to the cost, requiring a significantly smaller amount to achieve the same final benefit as a consumer credit.[4]
- **Manufacturer tax credits have much lower administration costs**: administering the credit for a couple dozen manufacturers inherently costs much less than administering credits for millions of individual consumers.
- **Manufacturer tax credits are a scalable tool that can benefit all sectors and the entire country**: Manufacturer tax credits can easily be applied to commercial and industrial heat pumps, broadening the impact. Furthermore, in contrast to federal tax credits, state and utility consumer rebates often lead to a patchwork of different programs, making it difficult for manufacturers to support through a single marketing and training program, resulting in uneven and much lower market uptake.

Manufacturer tax credits are an innovative and cost-effective solution to rapidly shift the market to efficient heating and water heating equipment, enabling domestic manufacturing job growth, major air pollution and emissions reductions, and lower energy costs for more Americans.

[3] The Information Technology and Innovation Foundation, https://itif.org/publications/2019/12/02/less-certain-death-using-tax-incentives-drive-clean-energy-innovation

[4] Franco V. et. al., LBNL, "Heat Pump Water Heaters and American Homes: A Good Fit?" August 2010, ACEEE Summer Study on Energy Efficiency in Buildings