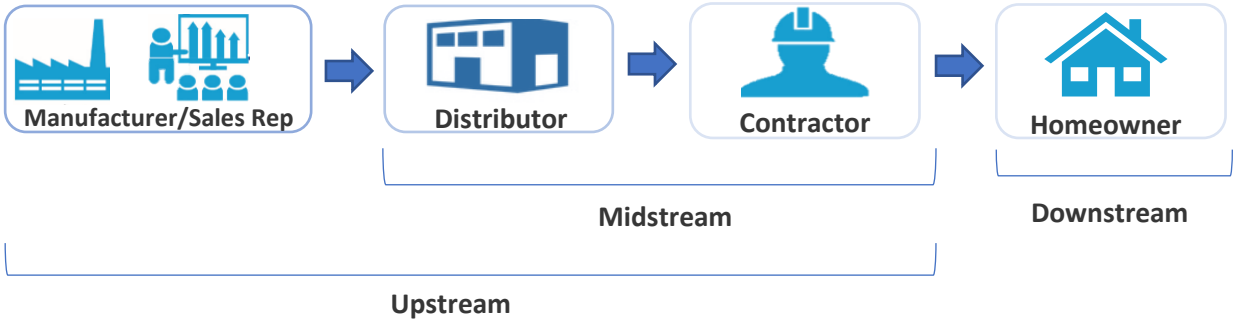
D.C. WORKSHOP MEMO: SUMMARY OF AVAILABLE INCENTIVE PROGRAMS

Heat pump incentives can be targeted at four primary points of the technology's supply chain: the manufacturer, the distributor, the contractor, and the homeowner. The terms "upstream," "midstream," and "downstream," are applied to incentives targeted at different points in the supply chain. While there is some inconsistency in how these terms are used, this document will define the terms in the following ways:

- Downstream incentives are targeted at the homeowner
- Midstream incentives are targeted at points between the homeowner and the manufacturer (in the case of heat pumps, this includes the distributor and the contractor)
- Upstream incentives are targeted at any point upstream of the homeowner (in the case of heat pumps, this includes the contractor, distributor, and manufacturer)

This document describes incentive programs that are targeted at each of the four points in the supply chain and outlines the strengths and challenges of each option. It also summarizes the current homeowner incentive offered by the D.C. Sustainable Energy Utility (DCSEU).

INCENTIVE OPTIONS



Manufacturer Program:

Efficiency program delivers incentive directly to the manufacturer, which passes savings to distributor in the form or reduced technology prices, enhanced support for technology, or increased availability of products. This incentive structure is most effective at reducing the upfront cost of technologies when they are in an early stage of market penetration.

Strengths	Challenges
• Smallest number of market actors to influence large portion of the market • Low transaction and administrative costs due to small number of players • Highest incentive leverage – rebate dollars increase in value to the consumer as they move through the supply chain[1]	• Furthest away from contractor and homeowner, so likely will not increase product awareness and visibility to end-user • Monitoring and verification needed to ensure that rebate is passed through the supply chain to the consumer • Most effective when delivered over largest area (i.e. D.C. market rebates will not have large impact on manufacturing costs)

Note: no case study found for related technologies during initial research

Distributor Program

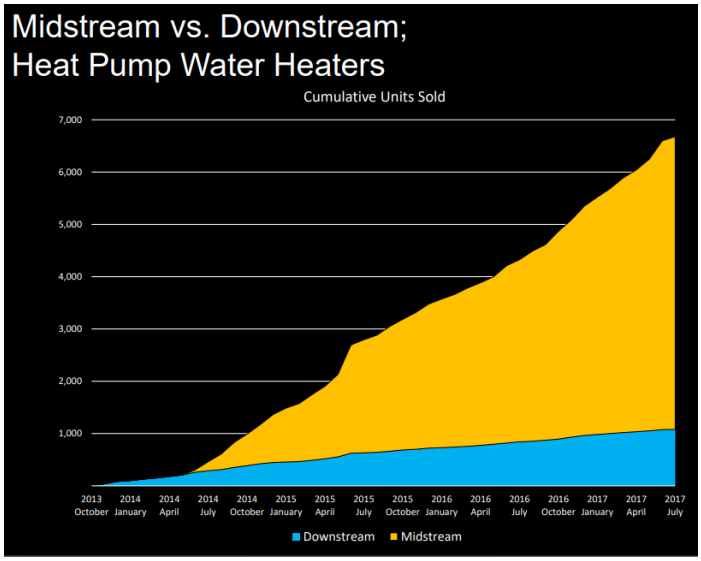
Efficiency program delivers incentive to the wholesale distributors for technology sold to contractors. Many programs (though not all) require that the distributor pass the entire discount value to the contractor and then homeowner. This incentive structure is most effective at increasing product availability and driving marketing and outreach through contractor channels.

Strengths	Challenges
• Broad market engagement with few program participants – a small number of distributors account for a high percentage of sales in a market/region • Contractors/homeowners receive rebate upfront through reduced price of technology, reducing complexity and barriers • Distributors have an impact on inventory, contractor product selection and training,	• Difficult to track sale of product to location of ultimate delivery (i.e. difficult to isolate to the Washington, D.C. city-limits) • Can be more difficult to track, monitor and improve installation quality because incentive further from contractor network • Most effective when delivered throughout a distributor's business area (i.e. on a larger scale) because this will have largest impact on

[1] For example, a light bulb may be marked up by 40% above its manufacturing cost when it is sold to the consumer. A $1.00 rebate to the consumer reduces the consumer cost by $1.00. However, it the same $1.00 rebate is applied prior to the markup (i.e. at the manufacturer level), the cost to the consumer will be reduced by $1.40 ($1.00 +40% at different stages of the supply chain). See https://www.sciencedirect.com/science/article/pii/S0301421514002705 pg. 60 for more information.

which can be leveraged via the incentive design to influence the market • Distributors already have administrative staff to manage incentive paperwork, filing, etc. • High incentive leverage – the price of the product increases as it moves downstream and gets burdened with transaction costs, meaning that incentives higher in the supply chain have higher leverage. Studies show that $1 in incentives to the distributor would require $2.50 of incentive at the retail level to result in an equivalent consumer price[2]	distributor profits; distributor may not value the program if it's only offered in D.C. • Incentive may not be entirely passed down to consumer – distributor and contractor may take some of incentive; this can be managed for during program design, but may require monitoring and verification

Case Study:
VEIC implemented a $400 midstream rebate in the Efficiency Vermont program in addition to an existing downstream rebate for heat pump water heaters (HPWHs). Following the rebate, they saw a 750% increase[3] in total sales of HPWHs (see figure below). Efficiency Maine and Energize CT have also implemented mid-stream programs and have seen participation increases ranging from 234% to 1,000%. Additional information on the benefits of mid-stream programs can be found here.



[2] "Moving to the Middle – How to Navigate the Ins and Outs of C&I Midstream Programs." Association of Energy Services Professionals. Retrieved: https://aesp.site-ym.com/page/MidstreamPrograms
[3] "Gain Steam, Go Midstream! Distributor focused Residential HVAC and Water Heater Incentives." EnergyStar. Retrieved: https://www.energystar.gov/sites/default/files/asset/document/2017_ESPPM_Gain%20Steam%2C%20Go%20Midstream%21%20FINAL.pdf

Contractor Program:

Efficiency program delivers incentive to contractor after contractor completes a qualified installation. Depending on the rebate design, the contractor may be required to pass savings on to the homeowner, but also may be allowed to determine pricing independently (keeping a portion of the incentive, and passing a portion to the homeowner). This structure is most effective at mobilizing sales through the contractor network and increasing homeowner awareness of technology.

Strengths	Challenges
• Motivates contractor to sell product and may translate to greater contractor awareness of incentive opportunity, increasing homeowner technology awareness • May motivate contractors to offer the product who currently do not offer the product • Enables easier monitoring of installation location (i.e. program can target the D.C. city limits specifically or can target certain customer-types) • May include quality control components in program design (e.g. certified installers, and post-installation inspections) • Homeowner can receive incentive upfront as a pass-through, reducing complexity and out of pocket expenses	• Can be more difficult to administer and have high overhead costs due to larger number of contractors compared to distributors • More burdensome for contractors to process the incentive paperwork, and smaller contractors may not have administrative staff

Case Study:

NYSERDA offers a $500 incentive to contractors per ASHP installed in residential single- or multi-family homes. Incentives are available on a first-come, first-served basis until the $10.95 million program limit is reached, and are capped at $500,000 per participating installer. Installers must complete an application and training program to become eligible for the incentive, and are not required to pass the incentive to the customer (but may do so if they choose). Through the program, NYSERDA also helps contractors offer more ASHP products and solutions, and promotes participating installers on NYSERDA's website.

Homeowner Program:

Efficiency program delivers incentive directly to homeowner, primarily in the form of a mail-in or online rebate following technology purchase. This incentive structure is most effective at addressing lack of information about technologies and perceived risks associated with energy efficiency investments.

Strengths	Challenges
• Enables incentive to be more targeted to specific groups and locations (e.g. the D.C. area, homeowners with certain existing fuel types, or early-retirement of existing heating system) • Increases homeowner awareness of the value of energy efficiency products by engaging them directly • Can include quality control components in program design (e.g. certified installers, easier inspections)	• Can be difficult to administer and have high overhead costs • Largest number of actors to influence • Lower program participation rates than alternatives • Large marketing and outreach effort needed to support program design • No multiplier effect – receive a direct cost reduction for dollars spent

Case Study:
MassSave offers incentives for heat pump technologies ranging from $100-$300 per unit for ductless and $250-500 for centrally ducted. Contractors must be certified installers for the system to be eligible for a rebate, and rebate can be received either online or via mail. The total number of rebates exceeded 9,000 in 2016.[4]

EXISTING DCSEU REBATES

DCSEU's existing downstream program offers incentives for heat pump technologies directly to the homeowner through an online rebate. To receive the rebate, the homeowner must have their system installed by a contractor listed on DCSEU's qualified contractor page. The rebate amounts offered by DCSEU through this program are summarized below:[5]

Ductless Mini-Split Heat Pumps - Tier 1	≥ 18 SEER, ≥ 12.5 EER, ≥ 8.5 HSPF	$300
Ductless Mini-Split Heat Pumps - Tier 2	≥ 20 SEER, ≥ 13 EER, ≥ 9.5 HSPF	$500
Air Source Heat Pumps - Tier 1	≥ 16 SEER, ≥ 13 EER, ≥ 9 HSPF	$300
Air Source Heat Pumps - Tier 2	≥ 18 SEER, ≥ 13 EER, ≥ 9.5 HSPF	$500

[4] "2016 Electric and Gas Summary Report." MassSave. Retrieved from: http://www.masssavedata.com/Public/MeasuresDetails
[5] "Home Heating." DCSEU. Retrieved from: https://www.dcseu.com/for-my-home/home-heating

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