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Establishing the Market Baseline for Super-Efficient Dryers

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Executive Summary

The Northwest Energy Efficiency Alliance (NEEA) engaged Cadmus to establish the market baseline for super-efficient clothes dryers. These clothes dryers, also known as heat pump class clothes dryers, reduce the annual energy use of this second largest energy-using appliance in the typical American home by 40% or more. Over the past several years, NEEA has been working to bring heat pump class clothes dryers to the United States and transform the market. However, before launching a market transformation initiative, it is critical that NEEA has a regional baseline for super-efficient dryers in order to determine what impact the initiative may have in the marketplace.

The baseline refers to the percentage of the target market that has adopted, and is likely to adopt, the efficient measure over a 20-year time horizon (beginning in 2015) in the absence of a NEEA initiative or the influence of local utility programs. To create the baseline, Cadmus identified an expert panel and collected data from the members using the Cadmus' online market adoption tool. The market adoption tool supports a Delphi process, by which Cadmus relied on the expert panel to define their first estimate of market adoption in isolation. Then, in a second round, Cadmus provided the panel members an anonymous summary of the panel's inputs and the rationale for each expert's estimate. Next, the experts reviewed and revised their initial estimates, as appropriate, based on other panelists' estimates and comments. Through this process, Cadmus defined a baseline market adoption estimate for this technology.

Key Findings

The average final estimate of the market adoption for super-efficient dryers was 0% in 2015, and 31% by 2035 (Figure 1). Over half of the experts (seven of 13) provided relatively similar estimates of the baseline market adoption rates.

Figure 1. Panel Expert Adoption Curves
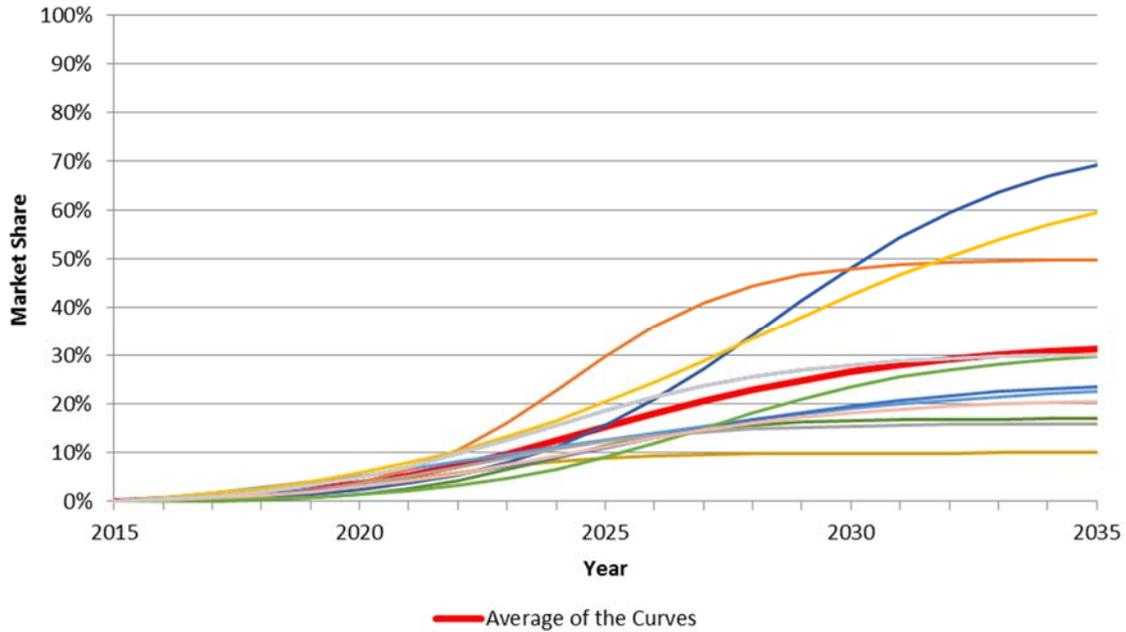
Panel experts thought super-efficient clothes dryer adoption would be slow in the immediate future, but customers would begin adopting at a faster rate by 2020. Three panel experts thought adoption would have a substantial market share (over 50%) by 2035. These three experts attributed this high market share to advancements in dryer technology and exogenous factors that would make the economics favorable, such as federal standards, carbon taxes, and high energy prices.

Panel experts who predicted a smaller market adoption concluded that without NEEA and other regional actors, such as local utilities promoting and providing financial incentives, super-efficient clothes dryers would follow a gradual adoption over the next 20 years and would be adopted by only about 20% of the market by the end of that period.

In the following sections of this report, Cadmus introduces this study, provides an overview of the methodology, and detailed findings from expert panel rounds one and two.

1 Introduction

NEEA is engaged in activities in the early stages of an initiative to bring super-efficient clothes dryers, also known as heat pump class clothes dryers, to the United States and transform the market. In 2010, to facilitate market transformation for this technology, NEEA became a founding member of the Super-Efficient Dryer Initiative (SEDI). SEDI is a national coalition of utilities and energy efficiency organizations that have a common mission to bring heat pump class clothes dryers to the United States. In addition to working with SEDI, NEEA's Emerging Technology Team has conducted the following work on heat pump class clothes dryers to date:

- Collected field data of the real-world energy use and consumer operation settings of clothes dryers (metered 100 homes as part of a residential building stock assessment and collected detailed operational data from 49 units in a supplemental laundry study);

- Provided data and testimony that was used in updating the federal test procedure to incorporate auto termination considerations;

- Provided data and testimony to advocate for revising the Department of Energy's (DOE's) test procedure for measuring ENERGY STAR® products;[1] and

- Created a draft supplemental lab test procedure that uses real-world clothes loads and four operational settings to determine dryer energy use.

Prior to fully developing and launching its initiatives, NEEA establishes a market baseline for each of its initiatives. Baseline refers to the percentage of the target market that has adopted, and is likely to adopt, efficient measures and/or practices over a 20-year time horizon in the absence of a NEEA initiative or influence of a local utility program (also known as the pre-initiative condition). NEEA uses the market baseline as the basis for measuring the impact of its initiatives. In December 2014, NEEA engaged Cadmus to establish the market baseline for super-efficient clothes dryers.

To develop a market baseline, Cadmus recruited market experts to estimate the baseline level of consumer adoption of super-efficient clothes dryers. Cadmus recruited industry experts who had a diverse mix of specialized knowledge to minimize the chance that individual panel members would miss significant, but possibly not well-known, market factors when providing their estimates. Cadmus also sought panel members with the minimum likelihood of providing biased inputs because of potential conflicts of interest.

These experts estimated baseline market adoption under the assumption that no NEEA initiative exists, and that no Bonneville Power Administration (BPA), Energy Trust of Oregon, or Northwest utility program exists. Cadmus employed the panel of experts to use Cadmus' online

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[1] Specifically, the NEEA Emerging Technology Team advocated for placing a limit on drying time and disapproved giving credit to manufacturers that include smart grid connectivity in their products. The DOE did revise the ENERGY STAR specification to include a limit on drying time.

market adoption tool to forecast the market baseline share of a selected product (super-efficient dryers in this case) over a 20-year time period.

2   Methodology

Cadmus used a panel of experts and Cadmus' online market adoption tool to define the super-efficient clothes dryer baseline in the Northwest. This tool supports a Delphi process in which the panel of experts defines their first estimate in isolation and submit the estimate along with supporting details through the online tool. Cadmus then provides each expert with an anonymous summary of the inputs and the accompanying rationale each expert provided for his or her estimate. Next, Cadmus encourages the experts to review and revise, as appropriate, their initial estimate based on the summary of other panelists' estimates and comments. The panel members then submit their second baseline adoption estimates along with any additional comments. The process can be repeated until consensus is reached or panel members no longer revise their estimates.

A key aspect of the Delphi process is providing a common understanding of the background, situation, and context to all panel experts. Cadmus compiled and provided panel experts with well-documented information about current market conditions and NEEA's involvement with this technology to provide a common basis for their estimates.

Cadmus conducted the analysis to estimate the super-efficient clothes dryer baseline market share in two rounds. During the first round, experts created their initial market adoption curve and provided comments about why they chose the curve. During the second round, the panel experts reviewed the input and comments (but not identities) of all panel members. Then they had the option to modify their input or stay with their original input. Cadmus ended the process after two rounds and consolidated the inputs and comments to estimate the super-efficient clothes dryer baseline market share by year over the 20-year forecast.

The following sections detail the expert selection process, the market adoption tool used, and the process for estimating the baseline.

2.1   Selecting the Panel of Experts

Cadmus, with support from NEEA, identified a community of experts with knowledge of various key aspects of the heat pump class clothes dryer technologies and market. From the full list of market actors, Cadmus cataloged the experts' backgrounds, roles, and the states in which they work or markets with which they are familiar. Cadmus identified 21 individuals, ranging from clothes dryer manufacturers to consultants, that have sufficient knowledge of different aspects of the white goods market, or that have in-depth knowledge of one or more specific market aspects.

Cadmus contacted these 21 subject matter experts via email and telephone to ask them to participate in the study and respond to a short survey describing their background. The information requested also helped Cadmus determine whether the experts had a conflict of interest that might bias their response (Appendix A).

Table 1 provides the number of experts contacted, surveyed, and participating in each round.

Table 1. Number of Experts Contacted, Screened, and Participating in Each Round of Study

Contacted For Recruitment	Took Screening Survey	Participated in Round One	Participated in Round Two
21	16	14	13

Each round of the study took just over a month to complete. Cadmus made weekly follow-up requests to panel experts to complete their responses.

The final panel included experts with different backgrounds and in different industries. Table 2 provides the industry background of all panel experts.

Table 2. Industry Backgrounds of Panel Experts

Industry	Number of Experts
White goods association staff or members	3
Program evaluators and planners	3
Energy efficiency program implementer	1
White goods manufacturers	2
Appliance retailer	1
Utility staff	1
Government agency staff	1
Independent testing staff	1

2.2 Market Adoption Tool and Estimating the Baseline

Cadmus' market adoption tool is web-based and allows experts to manipulate key parameters and create curves that represent their views of market adoption for a new technology. Cadmus originally developed the tool to collect market adoption estimates from experts for a California Public Utilities Commission impact evaluation of building codes and appliance standards. We debuted the tool in a 2007 pilot study, and have since enhanced it for use in multiple impact evaluations. This tool also supports a Delphi (Linstone 1975) forecasting process. Cadmus has customized the tool to support the super-efficient clothes dryer baseline study.

The tool generates a market adoption curve by specifying the parameters of a Bass diffusion model (a mathematical model to estimate market adoption based on assumptions about underlying market characteristics) in an interactive format. The tool allowed the panel experts to forecast the eventual market penetration of the technology and determine the shape of the market adoption curve over time by selecting values for parameters associated with consumer behavior. The market adoption tool produced a market share forecast over 20 years to provide a baseline against which NEEA can measure program impacts.

The tool required panel experts to provide two key parameters: one that represents the degree to which consumers as a whole demonstrate "leading" or "innovation" behavior in terms of market adoption and one that represents the degree to which consumers demonstrate "following" or "imitation" behavior. To select these two parameters, panel experts can adjust a set of two

graphical curve-building sliders[2] to construct a market penetration curve. The experts use a third slider to set their estimate of maximum market penetration.

Using these sliders, each panel expert created a market penetration curve starting in the year 2015 and extending through 2035 that represented the panelist's perceptions as a whole. The penetration curve shows the trend in the super-efficient clothes dryer market share that would occur if regional programs do not support this technology.

At the end of both panel rounds, Cadmus reviewed each expert's penetration curve and comments to determine if they understood the task. We planned to remove any curve if it was apparent the expert misunderstood the study objectives, but based on our review of the inputs and comments, no panel experts' responses or curves were deleted from this study.

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[2] A screen shot of the curve-building sliders is provided in Appendix B of this report. The panel experts were able to move a toggle on three separate sliders, which in turn would manipulate the market curve. The three sliders manipulated the market curve through adjustments to maximum market share, leading behavior, and following behavior.

3   Key Findings

This section presents the findings from both panel review rounds, the experts' comments about their estimates, and Cadmus' recommended final baseline market adoption curve. These results represent input from 13 expert respondents who completed both round one and round two market adoption curves.

3.1   Round One Market Adoption Tool Results

Figure 2 presents the round-one curve responses, with each colored line showing the curve estimated by one panel expert. The bold red line represents the average of all experts' responses.

Figure 2. Round One Market Curve Responses
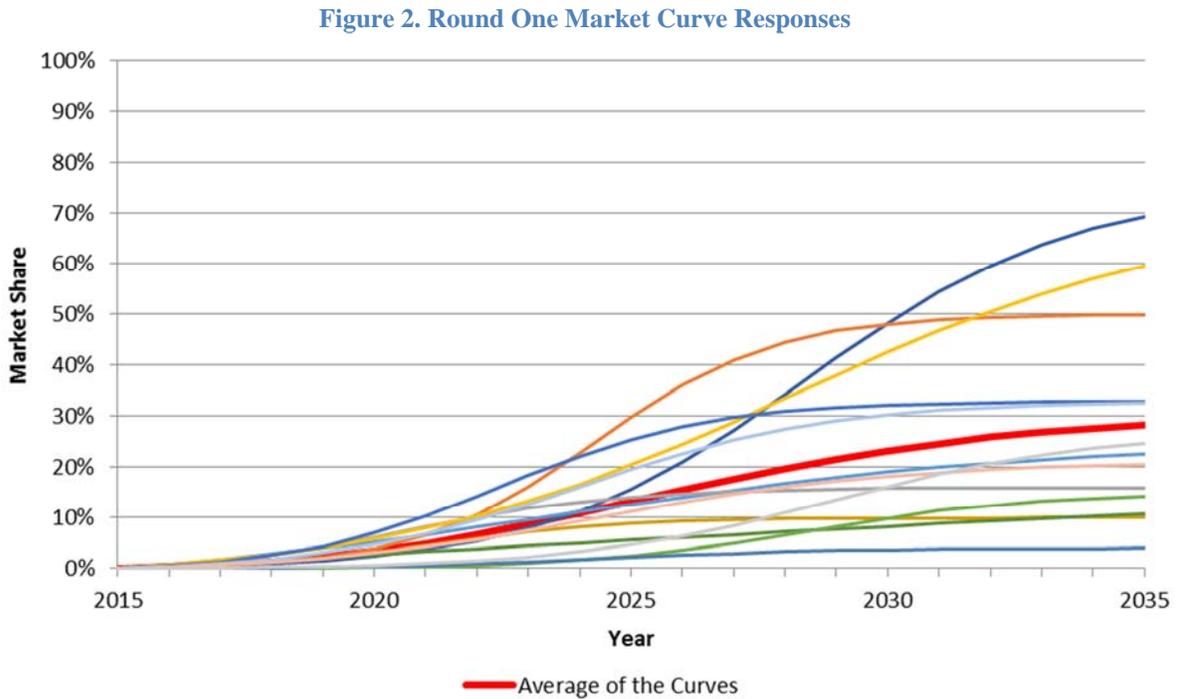
The majority of experts identified a maximum penetration rate between 17% and 33% by 2035. Table 3 presents the average market penetration by year for round one, showing an average prediction of 28% for super-efficient clothes dryers by 2035.

Table 3. Round One Average Market Penetration

Year	Maximum Market Penetration
2015	0%
2016	0%
2017	1%
2018	1%
2019	2%
2020	4%
2021	5%
2022	7%
2023	9%
2024	11%
2025	13%
2026	16%
2027	18%
2028	20%
2029	22%
2030	23%
2031	25%
2032	26%
2033	27%
2034	28%
2035	28%

Cadmus reviewed the experts' estimates along with their comments to understand their predicted market curve and maximum penetration. Respondents who predicted higher penetration (greater than 50%) by 2035 commented:

- "Carbon taxes, federal standards, and new, less expensive technologies will largely transform the market by 2034."

- "...the projected adoption curve is based on the European experience, but without any of the accelerating factors that caused that market to mature as quickly as it did…"[3]

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[3] In general, heat pump class clothes dryers are gaining market share in Europe. However, the sales share varies between European countries. Switzerland is leading Europe in the market share of heat pump dryers (at 100% in 2012), but the adoption rate is also high in Germany, Austria, and Italy (around 40%). In 2012, there were roughly 90 residential heat pump dryer models from 18 different manufacturers available in the European market. (Topten Focus: Heat pump driers: 50% energy saving potential. April 30, 2012. Online at: http://www.topten.eu/uploads/File/Topten%20Focus%20HP%20driers%20Apr%2012.pdf)

However, respondents who predicted higher maximum penetration (greater than 50%) still questioned the market viability of the technology and suggested that certain characteristics would slow its adoption:

- "…heat pump water heaters are generally known in this demographic [Northwestern United States]. That said, perceptions of lesser performance as well as initial price points will limit adoption."

- "Early cost barriers will slow adoption."

Respondents who estimated market penetration lower than 15% by 2035 commented:

- "I believe manufacturers and retailers are much less likely to promote 'super-efficient' clothes dryers without the support of efficiency program partners."

- "Given the significant price premium of super-efficient clothes dryers and the historical lack of efforts to drive clothes dryer efficiency, it seems unlikely that market share would reach a level much higher than 15% by 2034 without NEEA's involvement."

- "…this is an appliance that does not fit the usual U.S. consumer behavioral profile… there may be decreases in drying time that will happen but the cost delta is prohibitive of any real number without support from programs."

Respondents who identified a market penetration between 17% and 33% commented:

- "…without NEEA's involvement, I think heat pump dryers would not reach significantly high levels of market penetration."

- "I believe that the deficiencies of a heat pump dryer (speed, fabric wear, cost, etc.) will limit maximum adoption."

- "I think that without utility incentives, customers won't pay the additional incremental cost, and then manufacturers will slow production and give up on the product."

As illustrated by the comments above, many respondents, no matter what market share they predicted, believe that without market intervention via a government mandate and/or support from programs, heat pump clothes dryer penetration will be limited. Nearly all respondents selected a relatively slow initial market penetration during the first seven to 10 years, with an average estimate of reaching 10% by 2024. Further, most respondents said the market penetration would flatten out by about 2028.

3.2 Round Two Market Adoption Tool Results

This section outlines the round two panel experts' estimated market adoption curves and related comments.

During round two, the experts reviewed and revised, as they deemed necessary, their initial estimates based on other panelists' curves and comments. Three respondents agreed with the *average* response in round one; four respondents re-estimated their round-one response; and six respondents agreed with their round-one curve. As in most cases where Cadmus has applied this tool, the estimates converged, producing a consensual group estimate. The round two curve responses are presented in Figure 3.

Figure 3. Round Two Market Curve Responses
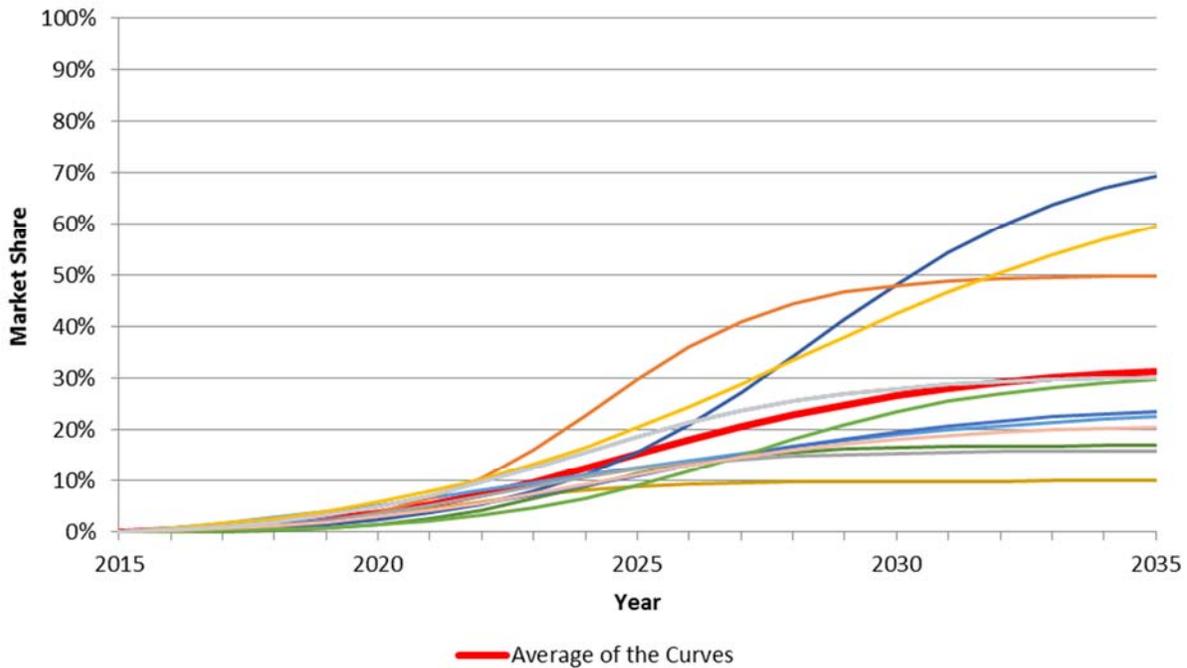
The three respondents who agreed with the round one average mentioned that there was little difference between their round one response and the group average. Two of these three noted that in the absence of NEEA's promotional efforts, the average market penetration curve they predicted showed relatively limited market penetration by 2035.

Most of the experts identified a maximum market penetration rate between 25% and 31% by 2035. The average market penetration prediction was 31% by 2035. This is slightly higher than the round one average prediction of 28%.

Respondents provided comments about their second round predictions. Those experts who predicted higher penetration (greater than 50%) by 2035 generally said that outside forces would drive the increased demand, and that the market will grow the same as it has for other similar products or in similar markets. They commented:

- "Today's heat pumps are just the start; by 2030 and beyond, we will have much better, more efficient, cheaper heat pumps. Technology is advancing quickly, federal standards will kick in (look at what happened with water heaters), and carbon taxes will make the operating economics favorable."

- "A 71% market penetration of a dryer that is only 35% more efficient than today's average is a reasonable projection because: (1) after eight years, 'A' class dryers have a 40% share of the European market, and are substantially more than 35% more efficient than conventional dryers; (2) the experience with refrigerators has shown that a series of incremental improvements can yield large eventual savings, at little or no incremental cost, and that potential exists for dryers also; and (3) even for heat pump dryers, the pricing we are seeing today is associated with the novelty of the product, not the production costs, and will drop steadily."

- "[I]still feel strongly that we will see a 50% penetration rate in the next 15-20 years as energy demand continues to increase, thus putting a spotlight on innovation in this category. Performance will need to improve and price points lowered as volumes increase."

Respondents who identified a market penetration less than 25% by 2035 generally said the product is not a very good match for the supply or demand side of the U.S. market, commenting:

- "…my take-away was that the crowd [the experts in the panel] was negative on their view of market share potential for heat pump technology without outside influences (like NEEA) and I think that is spot on. Heat pump dryers are probably not a fit to the U.S. market both from a use-case and price point."

- "I continue to believe that there will be a slow but steady increase in the adoption of heat pump dryers with innovators and early adopters."

Respondents who identified an intermediate level of market penetration between 25% and 31% commented:

- "I did choose the average curve for round two, as it is not as steep and I see this would be more appropriate in the absence of promotion efforts on the part of NEEA and other partners."

- "I agree with the average response, but I think it will be necessary for NEEA to provide significant incentives for heat pump dryers starting this year. I think it will also be important for NEEA to work with the CA IOUs [California investor-owned utilities] in order to get them to provide incentives in California."

- "The pace of federal standards implementation is such that would it take a long time absent market transformation work by NEEA and other organizations to bring a new technology like heat pumps to the point where it would be made the basis of a federal standard. That is the key reason behind my curve having a shallower slope than the average of the group as a whole."

- "I agree with the group's consensus that without NEEA's (and partners') involvement, the adoption of super-efficient dryers will be quite gradual. I have revised my estimate of the market uptake to one-forth from one-third in 20 years without significant promotion by utilities. Ideally, this product will be regulated in 20 years; however, for that to happen regulators will require evidence of market acceptance and lifecycle cost-effectiveness, and that is best done through coordinated utility efforts, like the Super Efficient Dryer Initiative."

As shown by comments above and those in round-one responses, many respondents, no matter what market share they predicted, commented that without market intervention via a government mandate and/or support from programs, heat pump clothes dryer penetration will be limited. Nearly all respondents selected a relatively slow initial market penetration during the first seven to 10 years, with the average estimate reaching 10% by 2023. Further, most respondents said the market penetration would flatten out by about 2030.

3.3 Market Baseline Results

This section includes the final mean market adoption curve and Cadmus' interpretation of the results.

Figure 4 presents the final baseline adoption curve, determined using round 2 results.

Figure 4. Final Estimated Market Baseline Adoption Curve (Round Two Average)
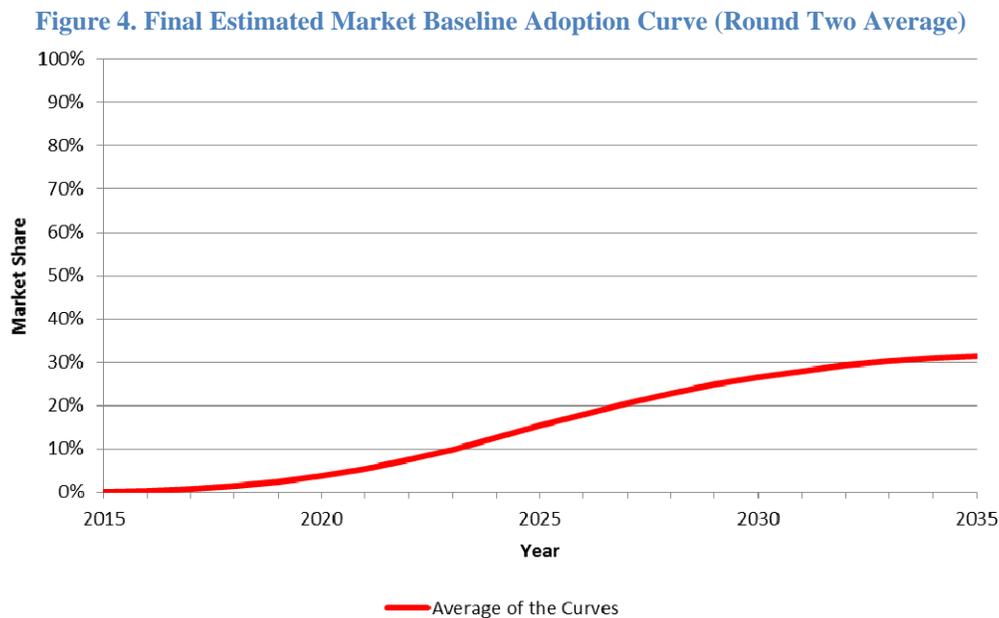
Table 4 presents the average maximum market penetration by year.

Table 4. Average Maximum Market Penetration	
Year	Maximum Market Penetration
2015	0%
2016	0%
2017	1%
2018	2%
2019	2%
2020	4%
2021	5%
2022	7%
2023	10%
2024	13%
2025	15%
2026	18%
2027	21%
2028	23%
2029	25%
2030	27%
2031	28%
2032	29%
2033	30%
2034	31%
2035	31%

The final baseline market adoption curve predicts relatively slow market adoption, with penetration reaching 4% in five years and 15% in 10 years. It accelerates somewhat after that, reaching 27% in 15 years, then leveling off to reach 31% in 20 years (maximum penetration in 2035).

Comments from the expert panel also reinforce the importance of key market transformation program elements including:

- Increasing consumer awareness of super-efficient dryers: Most consumers in the United States are unaware of heat pump dryers. One expert noted, "There is a 'price premium' for the technology that can only be overcome with increasing market share." As part of its super-efficient dryer initiative, NEEA could create an awareness and education campaign for this technology to help foster consumer adoption.

- Continuing to work with the federal government and interested stakeholders such as manufacturers, as well as using efforts like SEDI to design dryer standards and help bring this technology to the market. Efforts like SEDI increase the profile of technologies and the opportunity to design efficiency standards. As one expert noted, "…regulators will require evidence of market acceptance and lifecycle cost-effectiveness, and that is best done through coordinated utility efforts, like the Super-Efficient Dryer Initiative."

- Promoting super-efficient dryers with financial incentives: Many experts noted that without financial incentives, technology adoption will be slow and result in a lower eventual market penetration. Manufacturers and retailers are much less likely to promote super-efficient clothes dryers without the support of efficiency program partners.

4 Conclusions and Recommendations

Cadmus provides the following conclusions and recommendations based on this research and our analysis of the results.

4.1 Conclusions

Based on input provided by the expert panel, absent market intervention efforts by NEEA and other Northwest organizations, the initial adoption and market penetration of super-efficient clothes dryers over the next 20 years will be relatively low. Many of the respondents highlighted the importance of NEEA's and other actors' actions in accelerating and increasing the eventual market penetration of super-efficient clothes dryers over the next 20 years.

Additionally, experts' comments suggest that it would take a long time (absent market transformation work by NEEA and other organizations) to bring heat-pump dryers to a point in the market to be the basis of a federal standard. The consensus of experts' comments also suggests that steady progress is required to increase consumer awareness, improve equipment performance, and reduce price points as sales volume increases in order to reach higher levels of market penetration.

4.2 Recommendations

Cadmus recommends using the final adoption curve estimated in this study as the market adoption baseline for super-efficient dryers from which to estimate the impact of NEEA's initiative.

5   References

Linstone, Harry A. and M. Turoff. *The Delphi Method: Techniques and Applications*. Newark, NJ: New Jersey Institute of Technology. 2002. Available online: http://is.njit.edu/pubs/delphibook/

Rogers, Everett. *Diffusion of Innovations (Fifth Edition).* New York: Simon and Schuster, 2003.

Top Ten Focus: Heat pump driers: 50% energy saving potential. April 30, 2012. Online at: http://www.topten.eu/uploads/File/Topten%20Focus%20HP%20driers%20Apr%2012.pdf

US Energy Information Administration, Residential Energy Consumption Survey, 1980, 1981, 1984, 1987, 1990, 1993, 1997, 2001, 2005, and 2009. Online at: http://www.eia.gov/consumption/residential/

Appendix A. Expert Identification Online Survey

Cadmus contacted the 21 experts via email and telephone to ask them to participate in the study and to field a short survey to better understand their background and whether they had a conflict of interest. The images below are screenshots from the online survey given to panel experts.

5. Are you willing to participate in this study and take part in two online surveys?

○ Yes

○ No

○ Don't Know

○ Refused

6. Lastly, please fill in your full name, the company you work for, and the best way to reach you.

Name: _____

Company: _____

Best phone number to reach
you at: _____

Best email address to reach
you at: _____

Thank you for your time. We will follow-up with the remaining study details over the next couple of weeks.

[Done]

Appendix B. Market Assessment Web Tool

Cadmus recruited a panel of market experts to estimate the baseline level of consumer adoption of super-efficient clothes dryers. The experts estimated this baseline under the assumption that no NEEA initiative exists, and no BPA, Energy Trust of Oregon, or utility program exists. These experts utilized the Cadmus market adoption tool to forecast the market share of super-efficient dryers over a 20-year time period, providing a market baseline for measuring program impacts. The screenshots below show the web tool given to panel experts.

Products | My Account | Admin

Super-Efficient Dryers | Go back

Background | **Instructions** | Adoption Rate Estimate

How the tool works

Please Note: Users of certain browsers such as Internet Explorer 10 may encounter difficulties using the adoption curve. Click here for instructions to set Internet Explorer 10 to use compatibility mode or use other browsers such as Firefox or Google Chrome.

Getting Started

Clicking on the Adoption Rate Estimate tab will take you to where you need to provide your estimate. We are interested in your best estimate of the Pacific Northwest market adoption rate for super-efficient clothes dryers from the year 2015 to the year 2034, in the absence of any involvement by NEEA and other regional programs supporting them.

You will adjust the shape of the blue market share curve by moving three sliders:

1. The top slider at the left of the graph (labeled **Max Market Share**) allows you to estimate Maximum Market Share. This is the largest percentage of the market you think super-efficient clothes dryers would capture in the Pacific Northwest **without** promotion by NEEA, Bonneville Power Administration, Energy Trust of Oregon, and local utilities. We suggest you adjust this slider first based on your judgment about what you think is the maximum market share for super-efficient dryers. Sliding the bar to the right increases the percent of market share and to the left decreases market share. After you've adjusted the other two sliders, you may want to readjust the Maximum Market Share. NOTE: The maximum market share percent represents the total share super-efficient dryers can have and may be set higher than what will be achieved by 2034.

2. The second slider (labeled **Leading Behavior**) allows you determine when super-efficient clothes dryers will start to significantly gain market share. Sliding the bar to the right puts the technology taking off closer to the starting year of 2015. Moving the bar to the left estimates market adoption will begin further out in time. This slider estimates the effect of early adopters on market penetration of the technology.

3. The third and bottom slider (labeled **Following Behavior**) allows you to estimate the diffusion of the technology beyond early adopters in the market. Sliding the bar to the right increases the steepness of your curve. The farther to the right the slider is the faster you think the majority of market will adopt super-efficient clothes dryers. If you think the adoption of this technology will be more gradual and slower, slide the bar to the left.

As you are establishing your curve, you can view how your results are being **interpreted** in the Interpretation section below the graph. This section will contain a text description of your curve. If you are not satisfied with the curve and interpretation, you can move any of the sliders to change the curve, and then check the description again.

In addition to establishing your market adoption curve, we ask that you provide some comments supporting your choice of curve. These do not need to be lengthy, but should describe the reasons you think the market adoption would follow the path you have selected. Your comments will be shared anonymously with the other experts during the second round.

If you want to exit before finalizing your curve and come back to it later, click on the Save button in the top right hand corner of your screen. This will save your work and you can come back to your curve at a later time to complete.

When you are satisfied with the curve and interpretation, click the **Submit** button to record your response. Note: once you click the Submit button, you will no longer be able to make changes.

If you submit your input and haven't previously provided any comments, the system will prompt you for your comments as part of recording your input. Once you have input comments, you will be able to exit the tool.
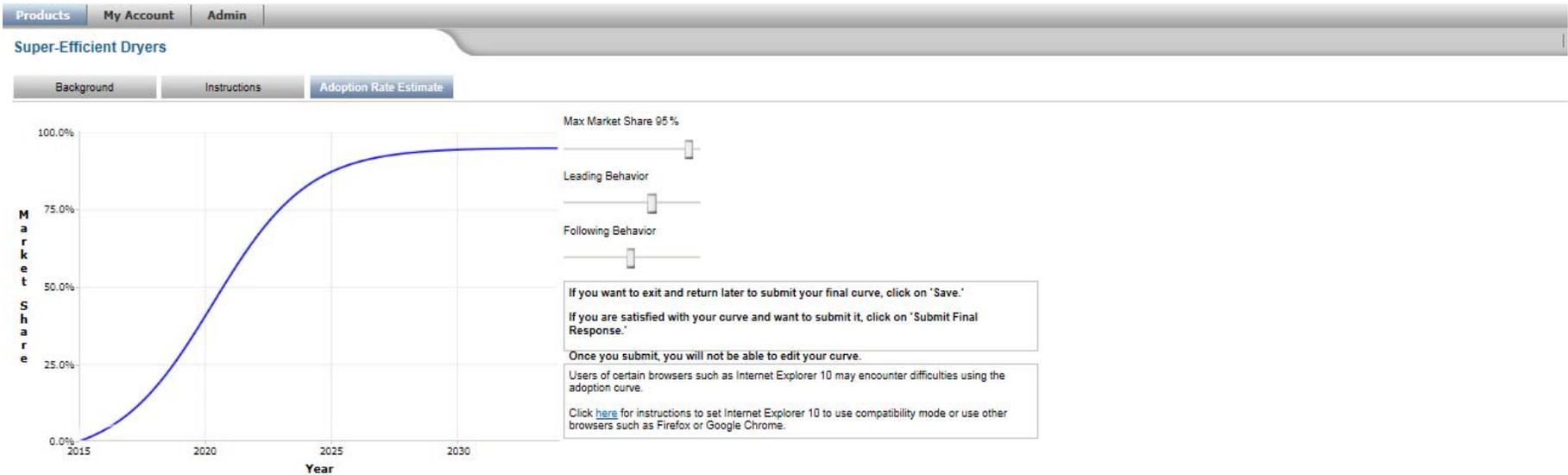
Interpretation

Based on the values you have selected, you believe that adoption of super-efficient clothes dryers will eventually reach 95% of the clothes dryer market if NEEA and its program partners do not promote this technology in the Pacific Northwest

You estimate the market share will begin to increase most rapidly beginning in 2020

Your selections indicate that consumers will adopt super-efficient clothes dryers slowly in the absence of promotion efforts on the part of NEEA or its program partners. Your selections also suggest that early adopters of super-efficient clothes dryers will have a moderate effect on how quickly customers adopt the product.

According to your selections, this product would have a market share of 9% in 2017, and 28% in 2019, 54% in 2021, 76% in 2023, 87% in 2025. Your selections indicate a max market value of 95% in 2034.

Your Comments

Please provide any additional context around why you interpreted the market share in the way you did.

Appendix C. Market Adoption Input Detail

Table 5 presents the percentage of market share responses by expert and by year across the two rounds.

<div align="center">Table 5. Market Baseline Expert Input Detail</div>

Expert	Round 1			Round 2		
	2015	2025	2035	2015	2025	2035
1	0%	9%	10%	0%	9%	10%
2	0%	16%	69%	0%	16%	69%
3	0%	6%	11%	0%	11%	17%
4	0%	13%	23%	0%	13%	23%
5	0%	30%	50%	0%	30%	50%
6	0%	14%	16%	0%	12%	16%
7	0%	20%	60%	0%	20%	60%
8	0%	26%	33%	0%	11%	24%
9	0%	2%	14%	0%	9%	30%
10	0%	2%	4%	0%	19%	30%
11	0%	20%	33%	0%	19%	30%
12	0%	11%	20%	0%	11%	20%
13	0%	5%	25%	0%	19%	30%