

# **Appendix G**

## **Primary Research Interview Questions**

## Manufacturer Questions

### Current Market Size:

1. Relative to the current market, what do you think is the potential percentage market growth by year for:
  - a. 2017
  - b. 2018
  - c. 2019
  
2. What percent increase have you seen over the past three years?
  - a. None
  - b. 1-20%
  - c. 21-40%
  - d. 41-60%
  - e. 61-80%
  - f. 81-100%
  - g. Other
  
3. We have reviewed data that shows that more than 70% of ductless heat pumps sold in New York have an HSPF between 9 and 10.5. Does this reflect your experience? Why or why not?
  
4. We have reviewed data that shows that 60% of ductless heat pumps have a SEER between 16 and 19. Does this reflect your experience? Why or why not?
  
5. Do you have an opinion as to the size of the current market for the residential single-family market, compared to the multi-family market, compared to the small commercial market, (or other markets)?
  
6. Which market segments do you think are most ripe for further adoption. Why?

### Market Channels:

7. Please describe the product distribution channels you work with.
  
8. Please describe your product sales approach.

### Market Actors:

9. Who are the key market actors you think could be influential in changing the DHP market?
  
10. How could they most effectively promote DHPs in NYS?

### Market Barriers:

11. What do you think are the market barriers for technology success? [List all]

12. Do you think there are customer barriers to adopting DHP? If yes, what are these?

### **Awareness:**

13. On a scale of 1 to 5, how aware do you think installers/contractors are of DMSHP? With 5 being Greatly Aware, 4 being Above Average Awareness, 3 being Average Awareness, 2 being Some Awareness, and 1 being Not Aware.

\_\_\_1\_\_\_      \_\_\_2\_\_\_      \_\_\_3\_\_\_      \_\_\_4\_\_\_      \_\_\_5\_\_\_  
 Not Aware    Some Awareness    Average Awareness    Above Average Awareness    Greatly Aware

14. How aware do you think distributors are of DMSHP? With 5 being Greatly Aware, 4 being Above Average Awareness, 3 being Average Awareness, 2 being Some Awareness, and 1 being Not Aware.

\_\_\_1\_\_\_      \_\_\_2\_\_\_      \_\_\_3\_\_\_      \_\_\_4\_\_\_      \_\_\_5\_\_\_  
 Not Aware    Some Awareness    Average Awareness    Above Average Awareness    Greatly Aware

15. What would you recommend as some ways of increasing awareness of DHPs among all market actors?

### **Market Potential:**

16. With strategic market interventions, what do you think is the market potential for growth?

17. What would be the best strategy for programs to help promote high efficiency DHPs? (Please note: while NYSERDA is interested in learning about ways to grow this market, please do not assume there will be rebates or per/unit incentives available).

### **Final Market Question:**

18. Are there any other areas of the ASHP market that we have not touched upon that you feel are important?

### **Business Models and Business Decisions:**

19. What would cause you to increase or decrease production and distribution of DMSHPs?

**Costs:**

20. Can you share unit pricing of the DMSHP Systems you offer?
  - a. If yes, can you share the unit price of your systems by efficiency rating for heating? If not, can you share MSRP?
  - b. If, yes, can you share the unit price of your systems by efficiency rating for cooling? If not, can you share MSRP?
  - c. If yes, can you share the unit price of your systems by capacity? If not, can you share MSRP?
  - d. If yes, can you share the unit price of your system by those with ratings for cold climates? If not, can you share MSRP?
  
21. What current and future trends do you see in DMSHP costs?
  
22. How do those costs break out into the following major categories by percentage?
  - a. Heat pump cost
  - b. Other equipment costs
  - c. Labor
  - d. Other non-equipment costs (and explain what these non-equipment costs are)

**Performance**

23. Has there been any independent testing done on your product? Yes \_\_\_\_\_ NO \_\_\_\_\_
  - a. If yes, can you share that with us?
  - b. If no, can you describe what kind of testing it was?

## Distributor Questions

### Current Market Size:

1. Relative to the current market, what do you think is the potential percentage market growth by year for:
  - a. 2017
  - b. 2018
  - c. 2019
2. What percent increase have you seen over the past three years?
  - a. None
  - b. 1-20%
  - c. 21-40%
  - d. 41-60%
  - e. 61-80%
  - f. 81-100%
  - g. Other
3. We have reviewed data that shows that more than 70% of ductless heat pumps sold in New York have an HSPF between 9 and 10.5. Does this reflect your experience? Why or why not?
4. We have reviewed data that shows that 60% of ductless heat pumps have a SEER between 16 and 19. Does this reflect your experience? Why or why not?
5. Do you have an opinion as to the size of the current market for the residential single-family market, compared to the multi-family market, compared to the small commercial market, (or other markets)?
6. Which market segments do you think are most ripe for further adoption? Why?

### Customer Motivation:

7. What have been the most effective types of *marketing focus* to influence customers to ask for DHPs?
  - a. Cooling focused (without cooling previously)
  - b. Heating new space
  - c. Saving money
  - d. Going green
  - e. Other
8. In your experience, what is the primary *consumer motivation* for installing DMSHP:
  - a. Heating
  - b. Cooling
  - c. Both

- d. Saving money
  - e. Going green
  - f. Other
9. Do you have a sense if customers are using the DHP as they had originally intended or have they changed usage? If yes, what is the change?
10. To the best of your ability, please rate customer satisfaction with the product utilizing a scale of 1-10 (1 is low; 10 is high).

### **Market Channels:**

11. Please describe the product distribution channels you work with.
12. Please describe your product sales approach.

### **Market Actors:**

13. Who are the key market actors you think could be influential in changing the DHP market?
14. How could they most effectively promote DHPs in NYS?

### **Market Barriers:**

15. What do you think are the market barriers for technology success? [List all]
16. Do you think there are customer barriers to adopting DHP? If yes, what are these?

### **Awareness:**

17. On a scale of 1 to 5, how aware do you think installers/contractors are of DMSHP?  
With 5 being Greatly Aware, 4 being Above Average Awareness, 3 being Average Awareness, 2 being Some Awareness, and 1 being Not Aware

\_\_\_1\_\_\_      \_\_\_2\_\_\_      \_\_\_3\_\_\_      \_\_\_4\_\_\_      \_\_\_5\_\_\_

Not Aware    Some Awareness    Average Awareness    Above Average Awareness    Greatly Aware

18. What would you recommend as some ways of increasing awareness of DHPs among all market actors?

### **Market Potential:**

19. With strategic market interventions, what do you think is the market potential for growth?
20. What would be the best strategy for programs to help promote high efficiency DHPs? (Please note, while NYSERDA is interested in learning about ways to grow this market, please do not assume there will be rebates or per/unit incentives available).

**Final Market Question:**

21. Are there any other areas of the ASHP market that we have not touched upon that you feel are important?

**Business Models and Business Decisions:**

22. What would cause you to increase or decrease production and distribution of DMSHPs?

**Costs:**

23. Can you share unit pricing of the DMSHP Systems you offer?
- a. If yes, can you share the unit price of your systems by efficiency rating for heating? If not, can you share MSRP?
  - b. If yes, can you share the unit price of your systems by efficiency rating for cooling? If not, can you share MSRP?
  - c. If yes, can you share the unit price of your systems by capacity? If not, can you share MSRP?
  - d. If yes, can you share the unit price of your system by those with ratings for cold climates? If not, can you share MSRP?
24. What current and future trends do you see in DMSHP costs?
25. How do those costs break out into the following major categories by percentage?
- Heat pump cost
  - Other equipment costs
  - Labor
  - Other non-equipment costs (and explain what these non-equipment costs are)

## Contractor Questions

### Current Market Size:

1. Relative to the current market, what do you think is the potential percentage market growth by year for:
  - a. 2017
  - b. 2018
  - c. 2019
2. What percent increase have you seen over the past three years?
  - a. None
  - b. 1-20%
  - c. 21-40%
  - d. 41-60%
  - e. 61-80%
  - f. 81-100%
  - g. Other
3. We have reviewed data that shows that more than 70% of ductless heat pumps sold in New York have an HSPF between 9 and 10.5 Does this reflect your experience? Why or why not?
4. We have reviewed data that shows that 60% of ductless heat pumps have a SEER between 16 and 19. Does this reflect your experience? Why or why not?
5. Do you have an opinion as to the size of the current market for the residential single-family market, compared to the multi-family market, compared to the small commercial market, (or other markets)?
6. Which market segments do you think are most ripe for further adoption? Why?

### Customer Motivation and Contractor Assistance:

7. Do you help customers calculate expected energy/cost savings?
  - a. If so, what do you use as a baseline?
8. If you do assist customers estimate expected savings, can you describe the method you use to help them calculate it?
9. What have been the most effective types of *marketing focus* to influence customers to ask for DHPs?
  - a. Cooling focused (without cooling previously)
  - b. Heating new space
  - c. Saving money
  - d. Going green



- e. Other
10. In your experience, what is the primary *consumer motivation* for installing DMSHP:
    - a. Heating
    - b. Cooling
    - c. Both
    - d. Saving money
    - e. Going green
    - f. Other
  11. Do you have a sense if customers are using the DHP as they had originally intended or have they changed usage? If yes, what is the change?
  12. To the best of your ability, please rate customer satisfaction with the product utilizing a scale of 1-10 (1 is low; 10 is high).
  13. In your experience, *where* are customers typically installing DHPs in their building?
  14. Do you think a *different location* in the building would lead to greater displacement from fossil fuel systems or electric resistance systems? Why?
  15. Do you believe that the needs of the customer could have been met with a more efficient system than the one they selected?
  16. In general, what is the breakdown between installations that function as displacement heating vs. whole house heating vs. displacement/whole house cooling (no heat at all)?
  17. What percentage of customers keep their fossil fuel heating system?
  18. What types of fuels/heating systems are being displaced by DMSHP usage?
  19. In general, what percentage of the heating load is typically served by the DSHPs?

### **Customer Financial Information:**

20. Do you have any information on what percentage of customers receive some form of rebate/incentive?
21. For customers who do receive a rebate, do you have any idea what percentage of the project cost is covered by the rebate?
22. What percentage of your customers cite finances as the main reason for installing the system? Of those, how many receive a rebate?

### **Market Channels:**

23. Please describe the product distribution channels you work with.
24. Please describe your product sales approach.

### **Market Actors:**

25. Who are the key market actors you think could be influential in changing the DHP market?
26. How could they most effectively promote DHPs in NYS?

### **Market Barriers:**

27. What do you think are the current market barriers for DMSHPs? [List all]
28. Do you think there are customer barriers to adopting DHP? If yes, what are these?

### **Awareness:**

29. How aware do you think customers are of DMSHP?  
With 5 being Greatly Aware, 4 being Above average awareness, 3 being Average awareness, 2 being Some awareness, and 1 being Not aware  

___1___	___2___	___3___	___4___	___5___
Not aware	Some awareness	Average awareness	Above average awareness	Greatly Aware
30. How best do you recommend increasing awareness of DHPs among all market actors?

### **Market Potential:**

31. With strategic market interventions, what do you think is the market potential for growth?
32. What would be the best strategy for programs to help promote high efficiency DHPs? (Please note, while NYSERDA is interested in learning about ways to grow this market, please do not assume there will be rebates or per/unit incentives available).

### **Final Market Question:**

33. Are there any other areas of the ASHP market that we have not touched upon that you feel are important?

### **Business Models and Business Decisions:**

34. What percentage of your sales do DSHPs make up? Is there an upward or downward trend?

### **Costs:**

35. Can you share unit pricing of the DMSHP Systems you offer?
  - a. If yes, can you share the unit price of your systems by efficiency rating for heating? If not, can you share MSRP?

- b. If, yes, can you share the unit price of your systems by efficiency rating for cooling? If not, can you share MSRP?
  - c. If yes, can you share the unit price of your systems by capacity? If not, can you share MSRP?
  - d. If yes, can you share the unit price of your system by those with ratings for cold climates? If not, can you share MSRP?
36. What current and future trends do you see in DMSHP costs?
37. How do those costs break out into the following major categories by percentage?
- a. Heat pump cost
  - b. Other equipment costs
  - c. Labor
  - d. Other non-equipment costs (and explain what these non-equipment costs are)
38. Do product and installation prices vary by regions within NY State?

**If time allows:**

39. How do you instruct customers to operate your product?
40. What are your practices for sizing DMSHPs?
41. What control strategy does the customer use for the DMSHP and primary/secondary heating system?
42. What is the typical annual energy savings of the system that you come up with?
43. Do you estimate simple payback projections for your customers?
44. If so, what is your general method?
45. How has the low price of oil/propane impacted payback calculations?