

# Evaluation of the PTCS Program

Presented by Research Into Action  
Funded by Bonneville Power Administration



# Evaluation Objectives

- Gather information to help BPA...
  - Improve program functionality for contractors and utilities
  - Increase PTCS activity
  - Increase stakeholder satisfaction
  - Mitigate program barriers
  - Reduce program costs
  - Improve the program's evaluability
  - Improve program functionality for contractors resulting in fewer rejected jobs and broader adoption in the market place.

B O N N E V I L L E  
P O W E R A D M I N I S T R A T I O N



# PTCS Process Evaluation: BPA Brownbag Presentation January 6, 2011

*Funded by:*  
**Bonneville Power Administration**

*Presented by:*

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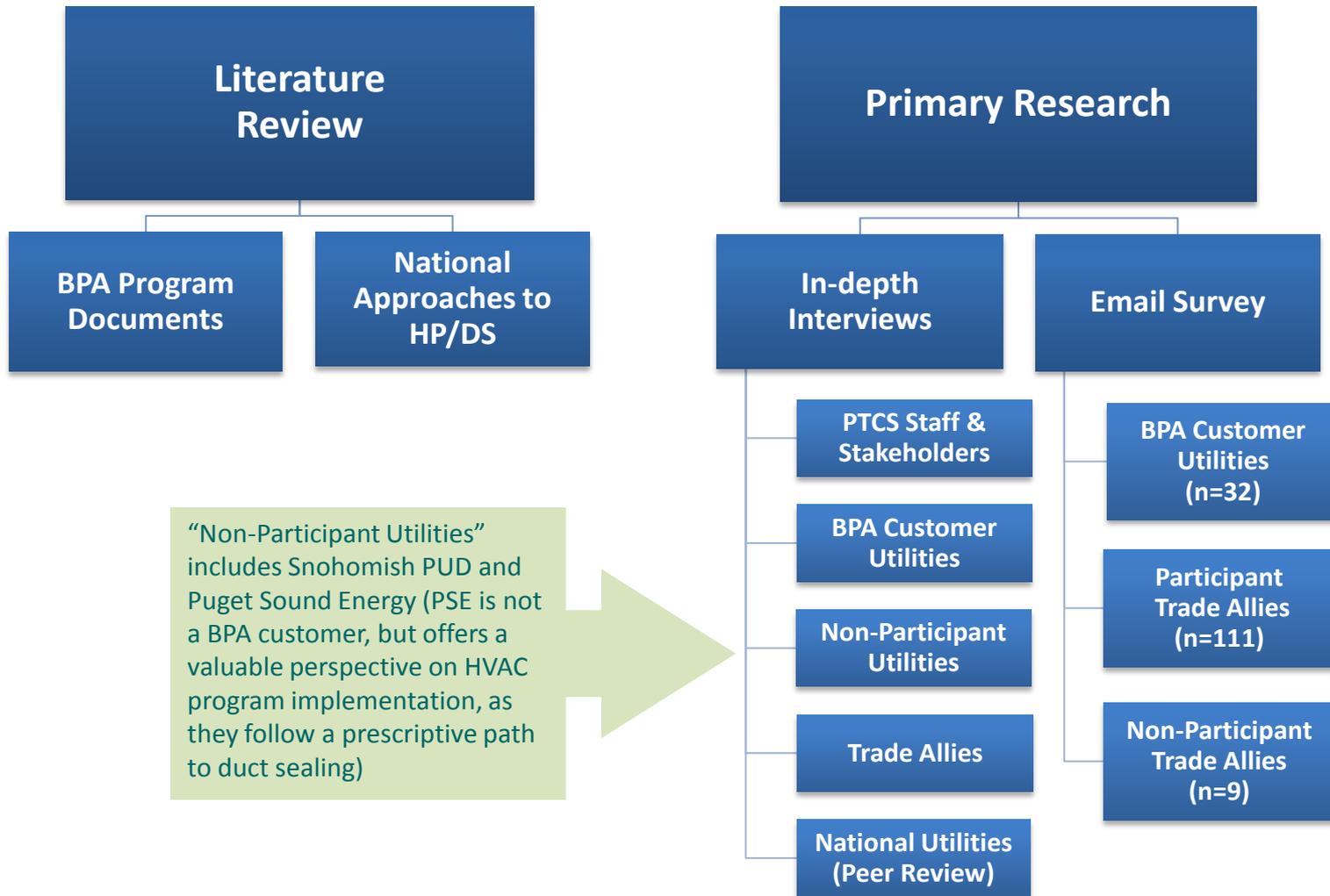
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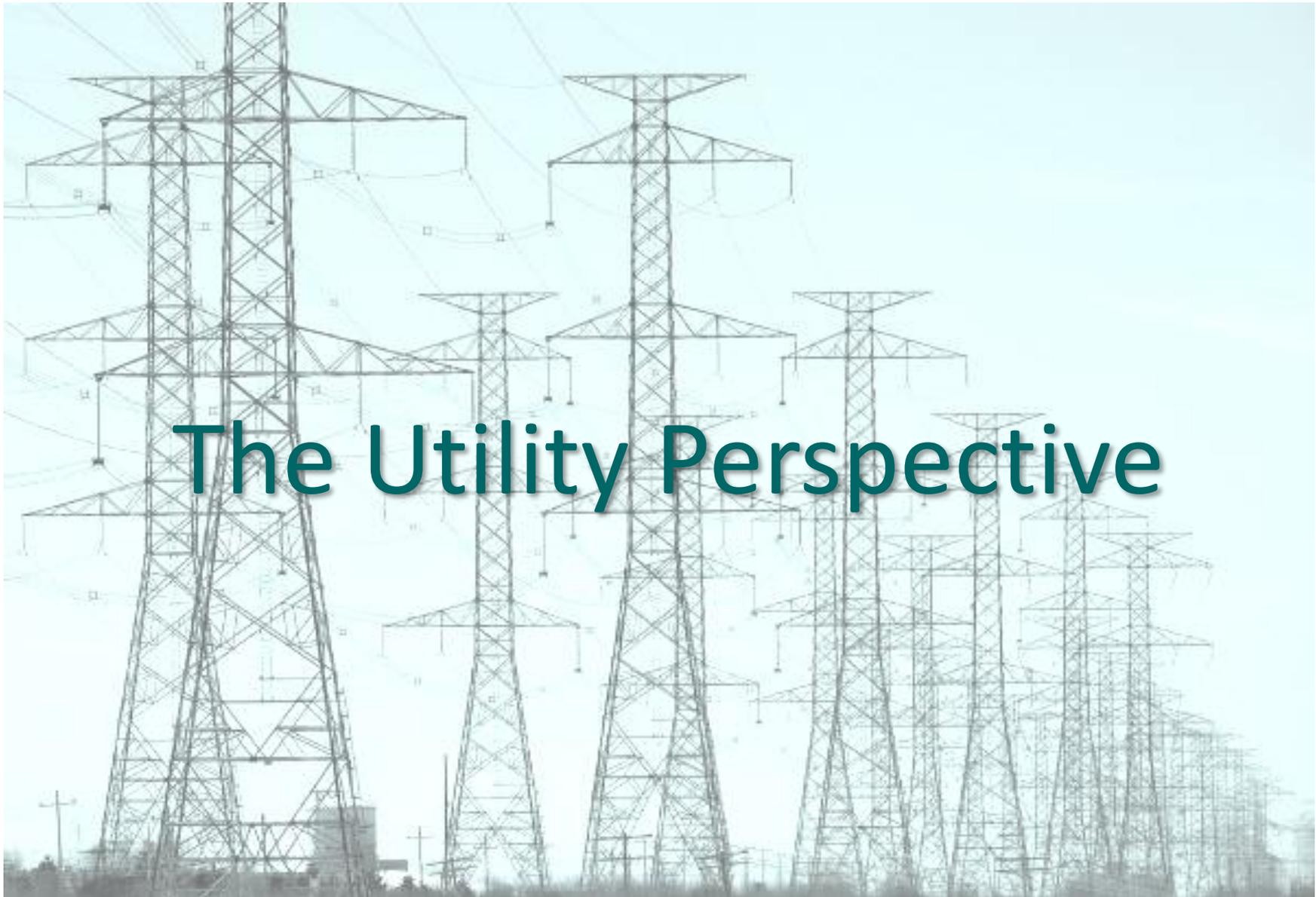
# Presentation Outline

- Research Objectives
- The Utility Perspective
- The Trade Ally Perspective
- Key Findings
  - Heat Pumps
  - Duct Sealing
  - Implementation Barriers
- Conclusions
- Recommendations



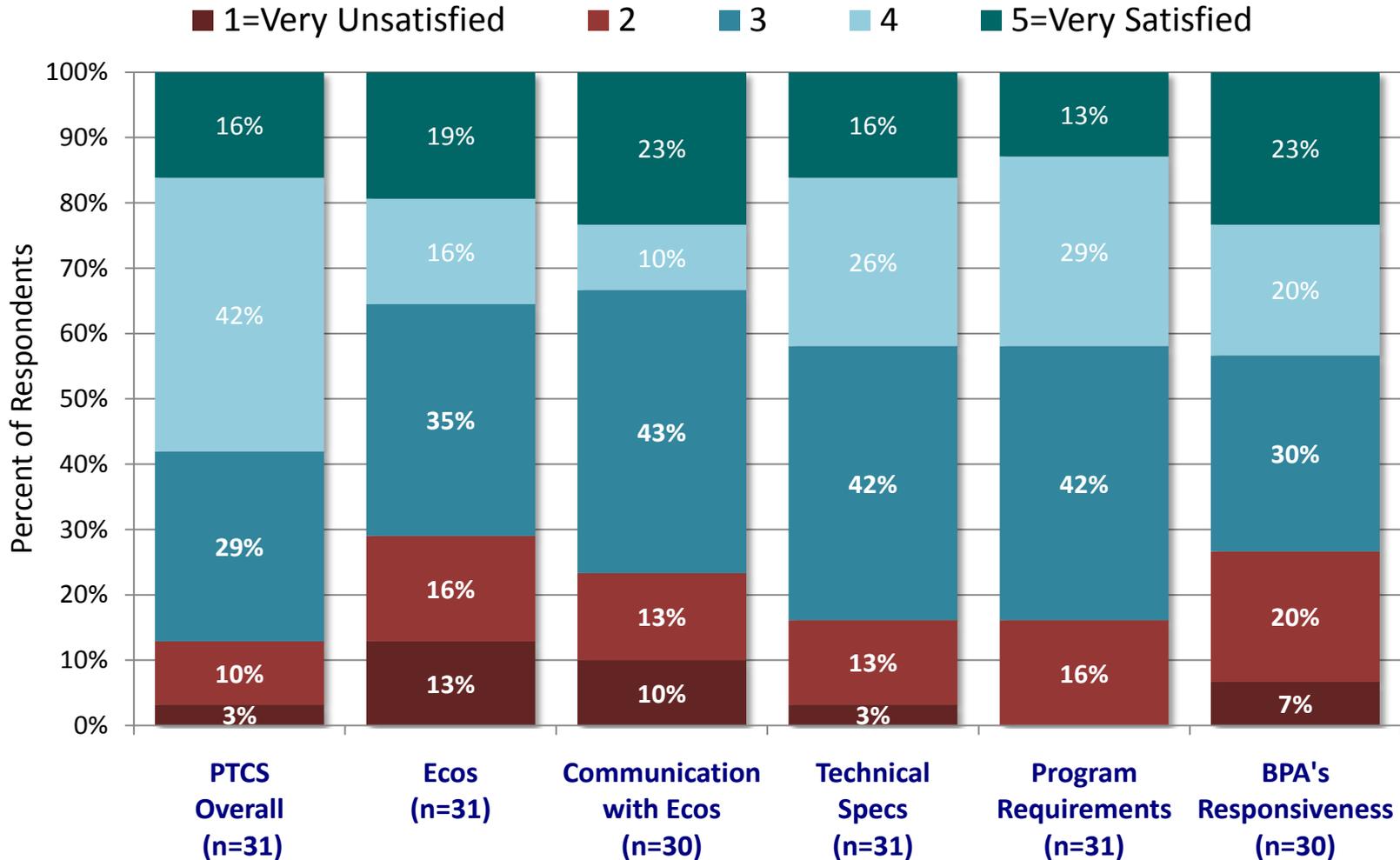
# Research Method





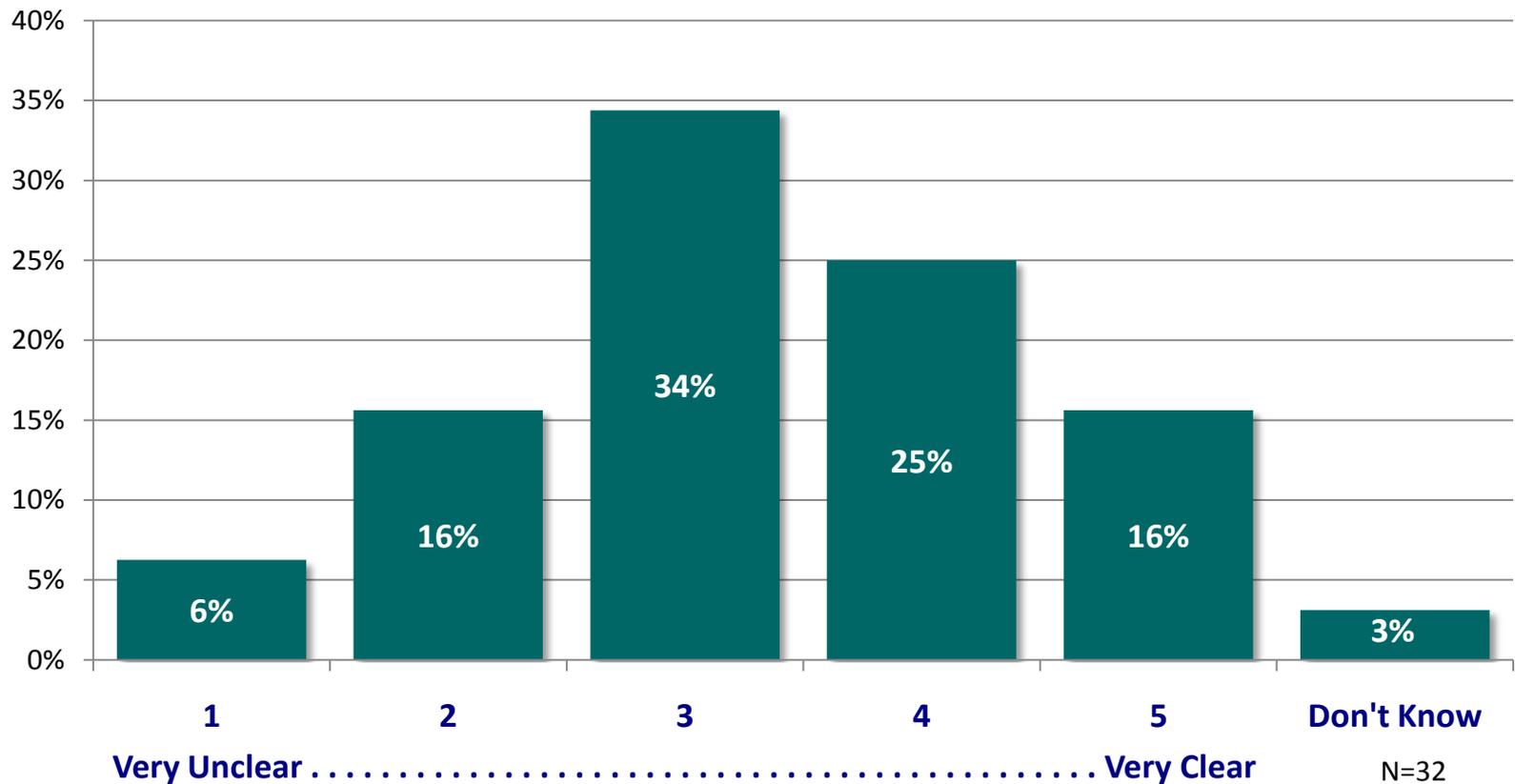
# The Utility Perspective

# Utility Satisfaction



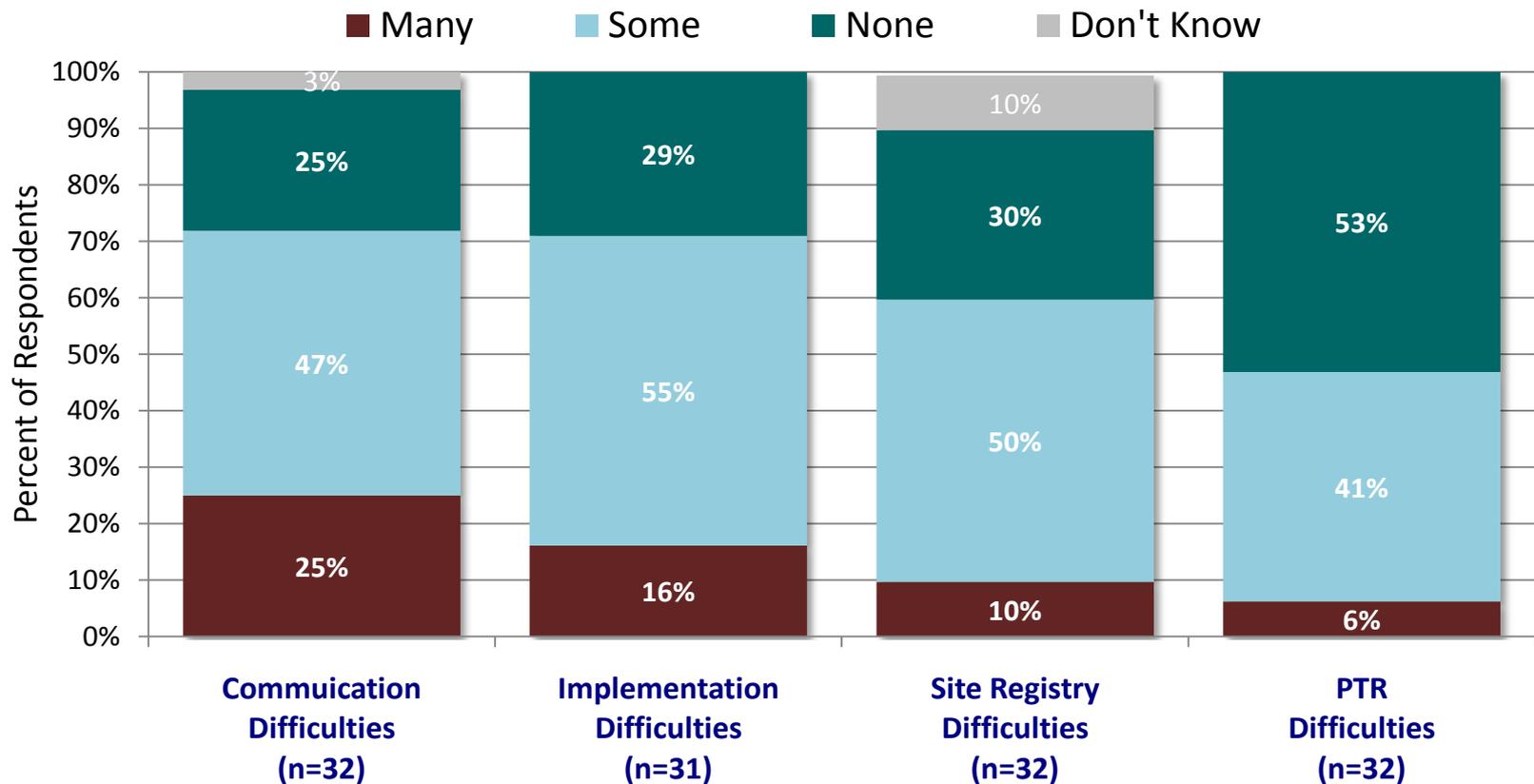
# Utility Perception of PTCS Specs

- How clear are the PTCS specifications for utilities?



# Utility Reported Difficulties

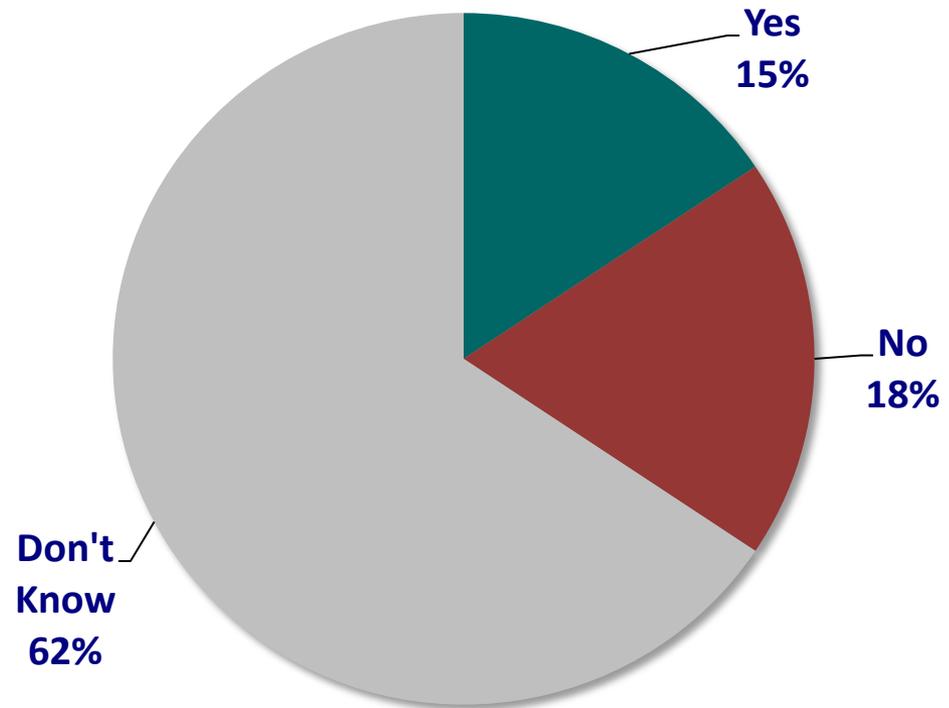
- The greatest difficulties were reported in the areas of communication and implementation



# Prescriptive Alternative – A Key Issue

- Would a prescriptive approach to HVAC and duct sealing better serve the region?

“Although a prescriptive approach sounds easier, I think it's important that the systems are actually tested to demonstrate the requirements are met.”



N=32

# Prescriptive Alternative – Nonparticipant Utility Perspective

- There is a preference for focusing on good sealing techniques rather than complicated testing  
*“A big time sink and not consistent results.”*
- There are doubts that PTCS actually stops leaking ducts  
*“PTCS only requires leakage to be diminished by a certain percentage, which does not necessarily result in completely sealed ducts.”*
- There is a belief that prescriptive duct sealing verifies kWh savings with higher certainty

# Summary of the Utility Perspective

- Utilities are somewhat satisfied with the program
- Some implementation difficulties are perceived
  - Processes are slow
  - It's hard to keep up with changing specs
  - There is a desire for more simplicity
- There is a need for more clarity on PTCS specs (particularly for ducts)
- There is some frustration with the implementation contractor
  - Communication
  - Site registry



A silhouette of a person kneeling on one knee, holding a large key in their right hand. The person is facing right, and their left hand is resting on a surface. The background is a light, textured blue.

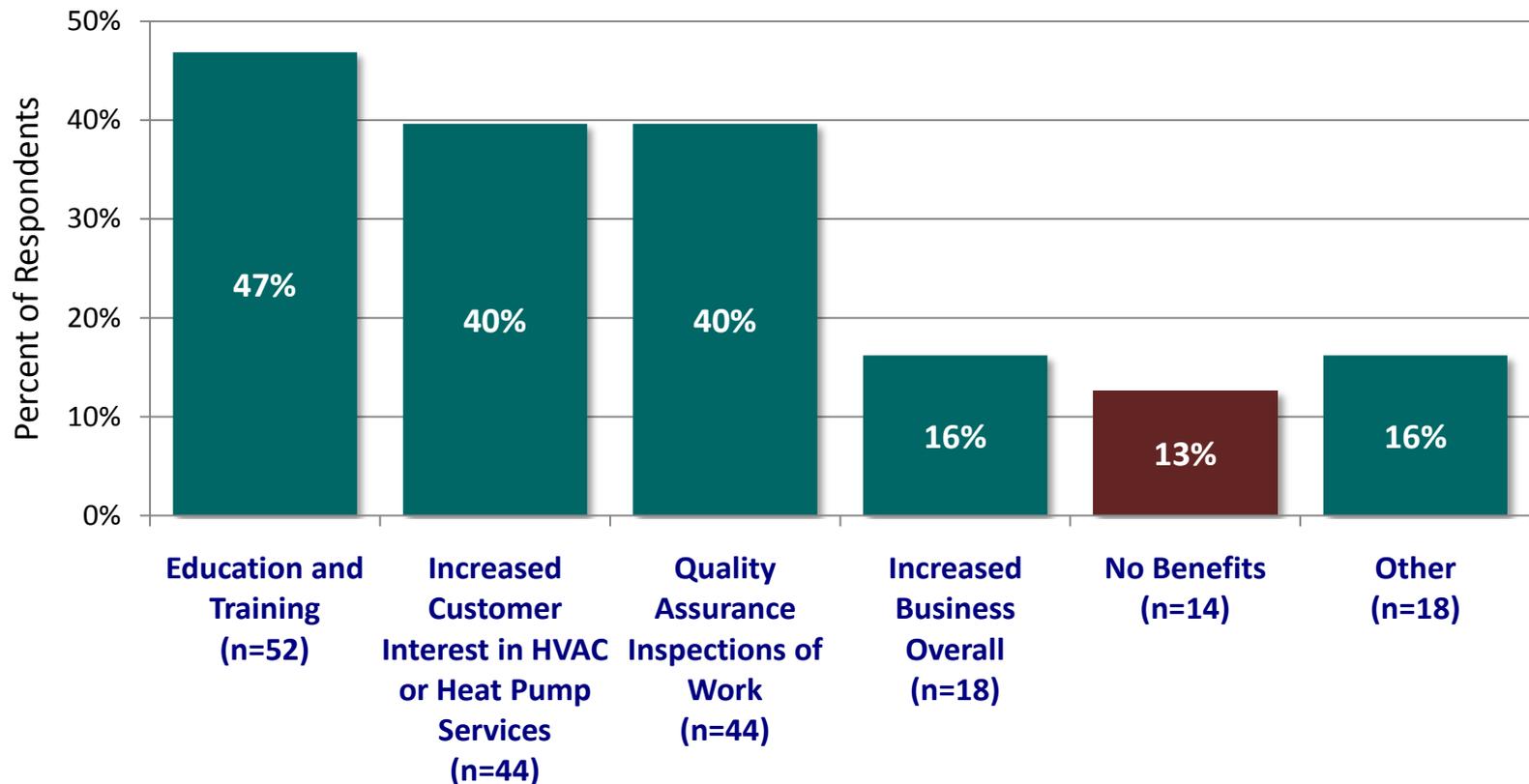
# The Trade Ally Perspective

# Trade Ally Satisfaction

Program Attribute	Satisfied (3 or 4)	Unsatisfied (1 or 2)	Don't Know
PTCS Overall	81%	16%	3%
Submitting Jobs to I.C.	57%	34%	9%
Communication with I. C.	57%	36%	7%
Technical Specifications	74%	22%	5%
Program Requirements	74%	20%	5%
Program QC	69%	24%	8%
Utility Responsiveness	68%	20%	13%

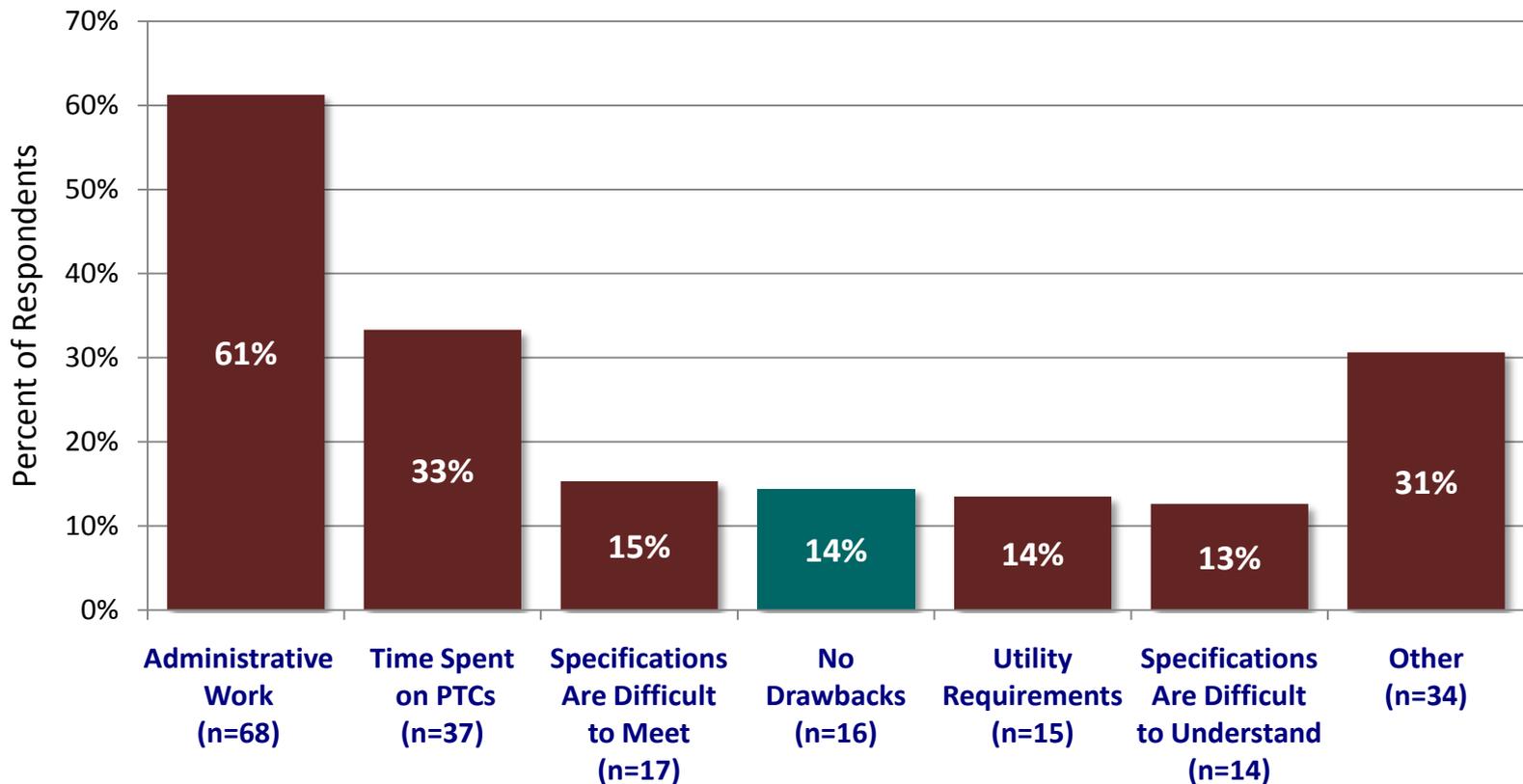
# Benefits of PTCS Participation

- What are the benefits of the PTCS program for your company?



# Drawbacks of PTCS Participation

- What are the drawbacks, if any, of the PTCS program for your company?



# Key Findings – Heat Pumps

- Relatively straightforward
- Agreement that PTCS saves energy over standard heat pump installation
- Some disagreement over key factors determining energy efficiency
  - Box specs
  - Sizing of unit
  - Proper installation
- A desire to simplify information collected on-site
  - Focus on what's most important

*“[Contractors] hated sitting in class and hated paperwork. They were good at fixing things and figuring things out”*

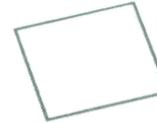


# Key Findings – Duct Sealing



- PTCS Duct Sealing is a complex job
  - Steep learning curve
  - Confusing to contractors doing only a few jobs per year
- The region is divided over the best approach – prescriptive vs. performance duct sealing

# Key Findings – Implementation Barriers



- A desire for more technical support
- Communication with Implementation Contractor
- PTCS Site Registry

# Conclusions – Program Implementation

- General satisfaction and belief in PTCS
- PTCS may be needlessly complex
- Contractors have difficulty with the paperwork
- Processes are perceived as too slow
- Specs change too frequently – hard to keep up
- Some frustrations with implementation contractor
  - Communication and follow-up
  - Site Registry
- A desire for consistency between utilities
- A need for centralized technical support

# Recommendations – Heat Pumps

- Conduct impact testing to verify the most important aspects for efficiency, then...
- Focus on key efficiency factors – Cx and controls
- Simplify Cx specs to focus on important aspects
- Simplify paperwork accordingly
- Consider handheld computer reporting

# Recommendations – Duct Sealing

- Reexamine:
  - 50% leakage threshold
  - Relative program emphasis on duct testing vs. duct sealing
  - QA/QC protocol
- Separate diagnostic duct leakage testing from QA/QC
- Look at Duct Ninja impact evaluation results
- If BPA changed to prescriptive duct sealing, consider how to be inclusive of PTCS-certified duct sealers

# Recommendations – Program Implementation

- Improve availability and consistency of technical support
  - A call for centralized, qualified technical support – but, *who?*
- Decide on format and relative roles for testing, QA, and QC
  - Modify training to focus on what's most important



# Recommendations – Program Implementation

- Ecos
  - Continue improvements that are already underway
- Ecos's Site Registry
  - Time lag and follow-up are the biggest complaints
  - Ensure clarity on processing time and follow-up expectations
- PTR and EE Central
  - Offer fewer options for similar measures
  - Create clearer descriptions
  - Drop-down boxes would be useful

# Recommendations – Program Implementation

- Consider strengths and weaknesses of program actors, especially with respect to:
  - Trade allies
    - Paperwork/administration
    - Testing vs. sealing
  - Utility managers
    - Technical support expertise
  - Implementation contractor
    - Training curriculum
    - Database management
    - Technical support
    - QA/QC
    - Communication and follow up
    - Summary reporting to BPA and utilities



# Contact Information



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*One of the 100 Best Green Companies to Work for in Oregon*  
*- Oregon Business Magazine – 2010*

