Non-Energy Impact (NEI) Valuation for other Programs:

New York ENERGY STAR® Labeled Homes

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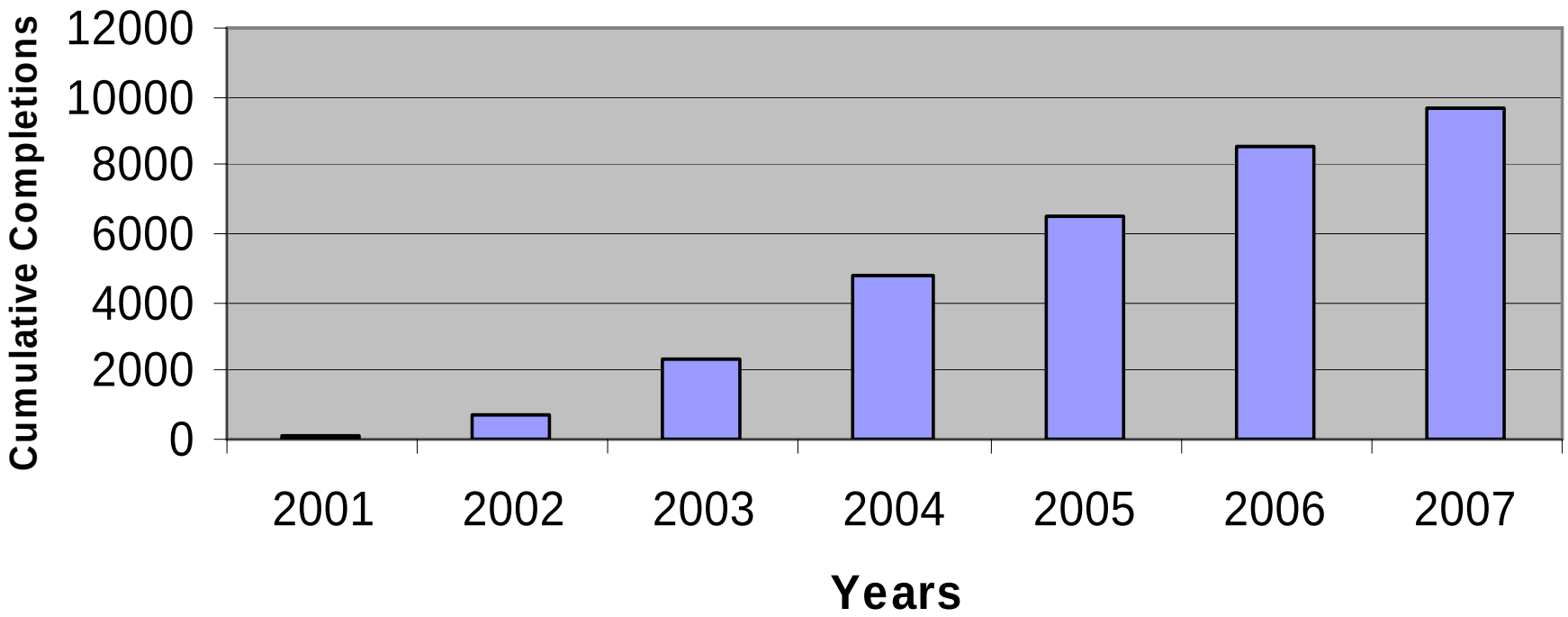
NYSERDA

ENERGY STAR HOMES

The New York ENERGY STAR® Labeled Homes Program

- Market Transformation Program designed to change the way builders construct homes while changing the end product requested by customers
- Utilizes third party raters and other industry actors to influence market
- Targeted Marketing to customers and targeted training to builders make dramatic changes
- Quality Assurance key to keeping everyone honest

New York ENERGY STAR Labeled Homes Program Production



Purpose of this Presentation

- Discuss two methods NYSERDA uses for quantifying Non-Energy Impacts
- Review NEI findings for our NYESLH Program
- Describe how we use these NEI findings to improve the Program

NEI Measurement Methods: Challenges

- Net analysis
  - Reference appropriate baseline condition
  - Consider both positive and negative NEI's
- Participant knowledge of NEI's
- Perceptions vs. actual field conditions
  - Both are useful, but have different uses
- Best way to elicit accurate values

NEI Measurement Methods: Direct Query

- Open-ended question on existence of NEI's
- Questions on whether various categories of NEI's exist
  - If a positive or negative impact exists, the respondent is asked how valuable this impact is in comparison to their project energy savings (%)
  - At the beginning of the survey, the respondent is reminded of the estimated dollar value of their energy savings
- Some consistency checks
  - Overall value of NEI's
  - Willingness-to-pay

NEI Measurement Methods: Conjoint Analysis

- Widely used for valuing non-price factors in contexts other than energy efficiency
- Recommended by experts as an approach worth testing for developing value estimates of NEIs
- Respondents choose from different bundles of attributes or product offerings
  - Reasonable and short lists of attributes (*i.e.*, six or fewer)
  - Levels of attributes that could represent actual conditions across many different projects/buildings
  - One attribute expressed in dollars
- Possibly easier for respondent to conceptualize through examples
- Most effectively administered by mail, Internet, or in-person surveys

NEI Measurement Methods: ENERGY STAR® Homes Conjoint Question

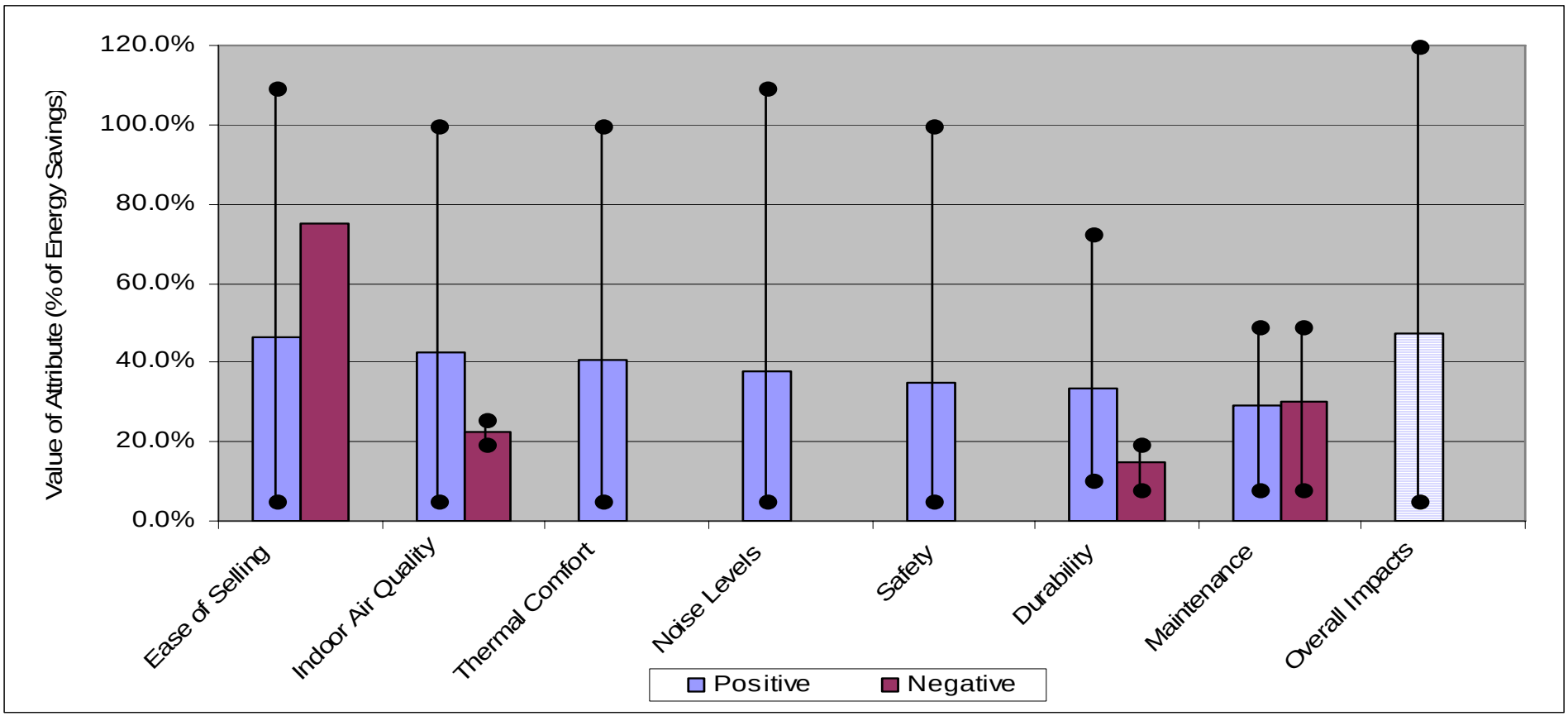
ATTRIBUTE / DESCRIPTION	HOME A	HOME B	DIFFERENCE
Cost / Resale Value Value of house compared to similar-sized homes in the same location and condition	Same value as other similar homes	Valued at $4,000 more than other similar homes	*B is more valuable than A*
Comfort Amount of insulation and quality of windows	Standard insulation and windows	Standard insulation and windows	*No difference*
Noise Amount of street and outdoor noise heard inside the home	Very little noise	Some noise	*A is quieter than B*
Indoor Air Quality Amount of air infiltration and ventilation	Standard air infiltration and ventilation	Standard air infiltration and ventilation	*No difference*
Durability Use of best practices versus standard practices in equipment installation and construction	Best installation and construction practices	Best installation and construction practices	*No difference*
Safety Existence of backdraft protection for heating system	Backdraft protection	No backdraft protection	*A is safer than B*
Please choose Home A or B			

NEI Measurement Methods: Generalized Results From Most Recent Studies

- Overall, NEI results are generally lower from the conjoint method than direct query (especially in the most recent year's study, when conjoint methods were further refined)
  - Direct query questions examine a larger list of attributes
  - Conjoint analysis results are constrained by the range of values used in the questions
- However, in the most recent studies, individual NEI results have generally been quantified within the same range in both direct query and conjoint approaches

Direct Query Results: ENERGY STAR Homes

- Overall, NEI's were 47% as valuable as the project energy savings
- Most highly valued NEI's were ease of selling the home, indoor air quality and thermal comfort



Conjoint Results: ENERGY STAR Homes

- Overall NEI value is approximately 130% of energy savings ($616)
- Highly valued NEI's include: durability, comfort and safety, and indoor air quality

Attribute	Annual value ($)
Durability	$202
Comfort	$191
Safety	$181
Indoor Air Quality	$156
Noise Level	$72
Total value	**$801**

Benefits of Quantifying NEI's

- Useful in Benefit / Cost Scenarios
- Targeted consumer marketing
- Builder and Realtor recruitment to ENERGY STAR Homes Programs
- Beneficial to Program design (identify aspects to focus on)
- EPA national expansion (selling to other states)

Thank You!

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