

Health + Energy Program Design Network

Deep Dive #2: Monetizing Health Impacts

ACEEE Health and Environment Team

Thursday, June 10th, 2021 @ 3pm Eastern



American Council for an Energy-Efficient Economy



The American Council for an Energy-Efficient Economy is a nonprofit 501(c)(3) founded in 1980. We act as a catalyst to advance energy efficiency policies, programs, technologies, investments, & behaviors.

Our research explores economic impacts, financing options, behavior changes, program design, and utility planning, as well as US national, state, & local policy.

Our work is made possible by foundation funding, contracts, government grants, and conference revenue.

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Agenda

- Monetization of Non-Energy Benefits to Support Incorporation of Health into Energy Efficiency Programs
 - Why monetize program health impacts?
 - Methods and tools for estimating monetized values of program impacts
 - Examples
 - Cost-Effectiveness Testing
- Open Discussion

Monetization of Health and Other Non-Energy Benefits

Monetization: Assigning a dollar value to program benefits

Diverse approaches! Programs might try to monetize:

- benefits to individual participants vs. society
- avoided costs (health care costs, environmental compliance) vs. value of improved conditions (participant comfort)
- value of a single type of benefit vs. a combination

How are monetized benefits used?

- **Improve program design:** Prioritize services to achieve the greatest value compared to costs
- **Prioritize equitable outcomes:** Illustrate that investment in disproportionately burdened households will yield the greatest returns
- **Health audiences:** Justify and/or prioritize health-sector investment in residential programs
- **Utility regulators:** Include health as a benefit in cost-effectiveness testing, potentially increasing program funding

Data for monetization can come from a variety of places

- Generalized estimates
- National or regionally specific values
- Program-specific data

Specificity of data points used may vary – e.g., available data on a specific program’s population size or characteristics might be used, in combination with national or regional estimates of disease rates or intervention efficacy

Approaches to health monetization vary

- Jurisdiction-specific studies or estimates
 - ORNL WAP retrospective evaluation
 - Duke Energy Helping Homes Program evaluation
- Proxies (adders and savings multipliers)
 - Benefits per Kilowatt-hour (EPA estimate)
 - Set values (\$/customer, \$/measure installed, % multiplier per other impacts)
- Other substitute methods, when impacts are difficult to quantify (drawing on quantitative and qualitative information, alternative thresholds, and sensitivity analyses)

MAKING HEALTH COUNT:

Monetizing the Health Benefits of In-Home Services Delivered by Energy Efficiency Programs

Sara Hayes, Cassandra Kubes, and Christine Gerbode

RESEARCH REPORT

MAY 2020

<https://www.aceee.org/research-report/h2001>



Simple Method for Monetizing Participant Benefits

What is the dollar value of the health benefits that accrue to program participants?

Inputs:

- Number of households reached
- Number of vulnerable occupants
- Number of incidents avoided by your program's intervention
- Dollar values of avoided harm

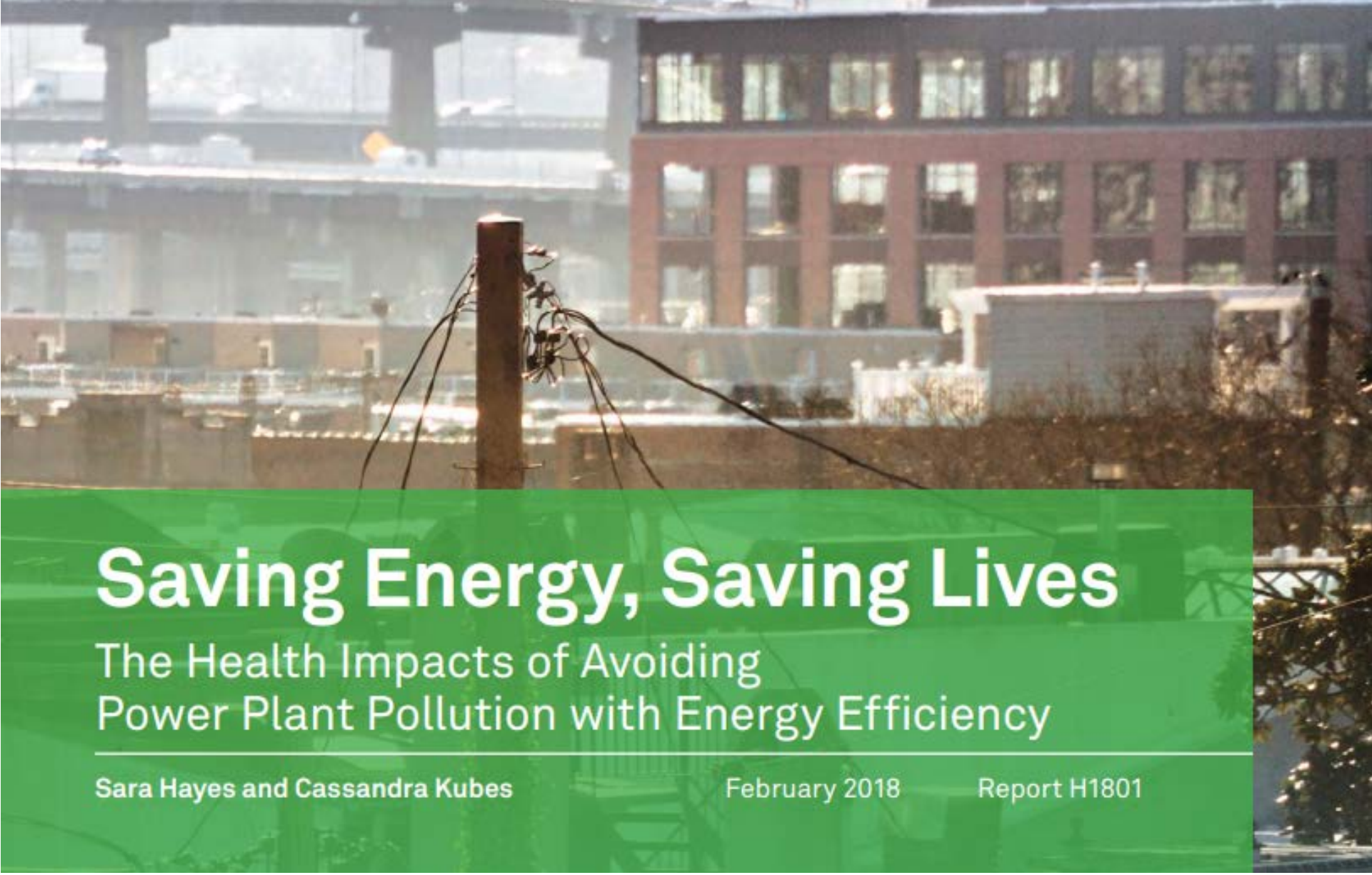
Customizing Inputs for your Program

- Identify the benefits most relevant to your program based on services offered and population served
- Identify the benefits of greatest interest to your audience
- Local specificity where possible, broader estimates as necessary
- Potential data sources are listed in Appendix A of Making Health Count report for:
 - Asthma
 - Trip-and-fall injuries
 - Heat injury
 - Cold injury
 - Other factors (monetizing missed days of work and lost wages, etc.)

Monetizing Societal Benefits

Programs can also quantify the societal health benefits of avoided emissions, including:

- reductions in premature deaths
- respiratory and cardiac illnesses
- aggregate reductions in hospital admissions
- aggregate missed work days



Saving Energy, Saving Lives

The Health Impacts of Avoiding
Power Plant Pollution with Energy Efficiency

Sara Hayes and Cassandra Kubes

February 2018

Report H1801

Methodology

- Applied a 15% reduction in annual electric consumption evenly across the country.
- Estimated emission reductions from power plants using EPA's AVOIDed Emissions and geneRation Tool (AVERT).
- Entered emission reductions into EPA's CO-Benefits Risk Assessment (COBRA) model.

Save Energy. *Protect Health.*

Reducing annual electricity use by **15%** with **ENERGY EFFICIENCY** would reduce air pollution, and...

- + Save more than **SIX LIVES** every day
- + Prevent nearly **30,000 ASTHMA EPISODES** each year
- + Save Americans up to **\$20 BILLION** in avoided health harms annually



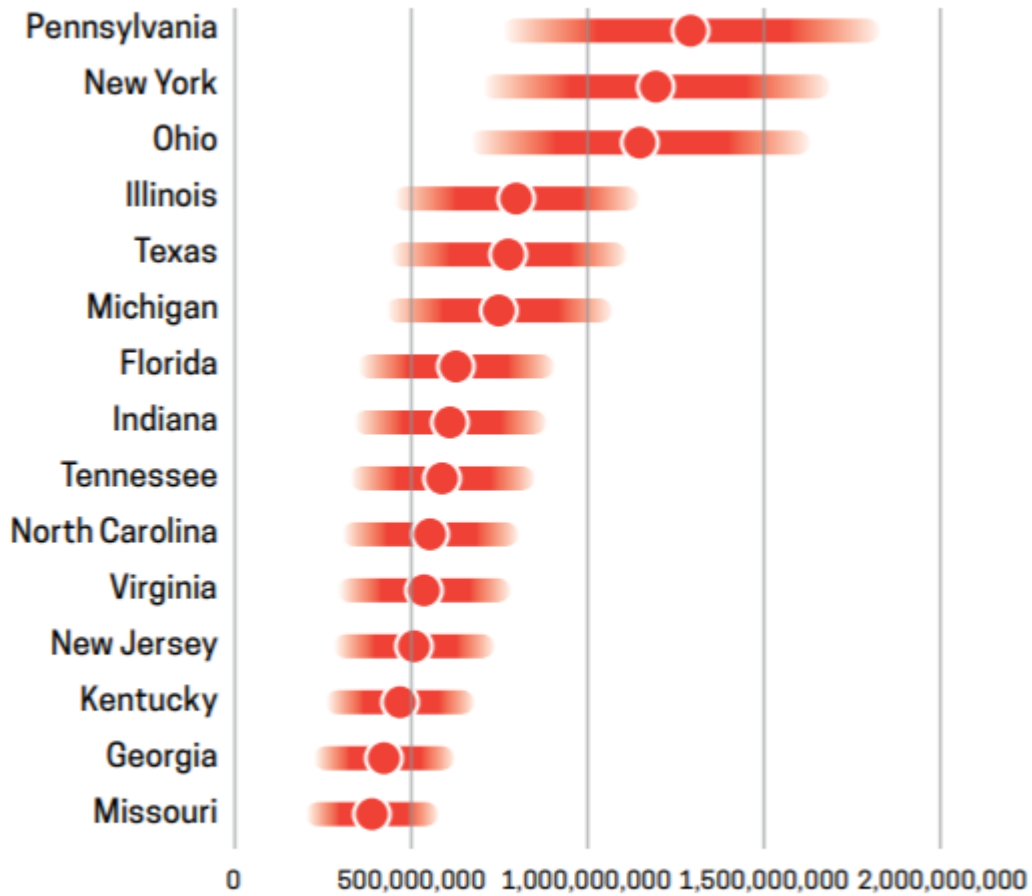


Figure 5. Top 15 states by avoided health harms, low and high range (US\$)

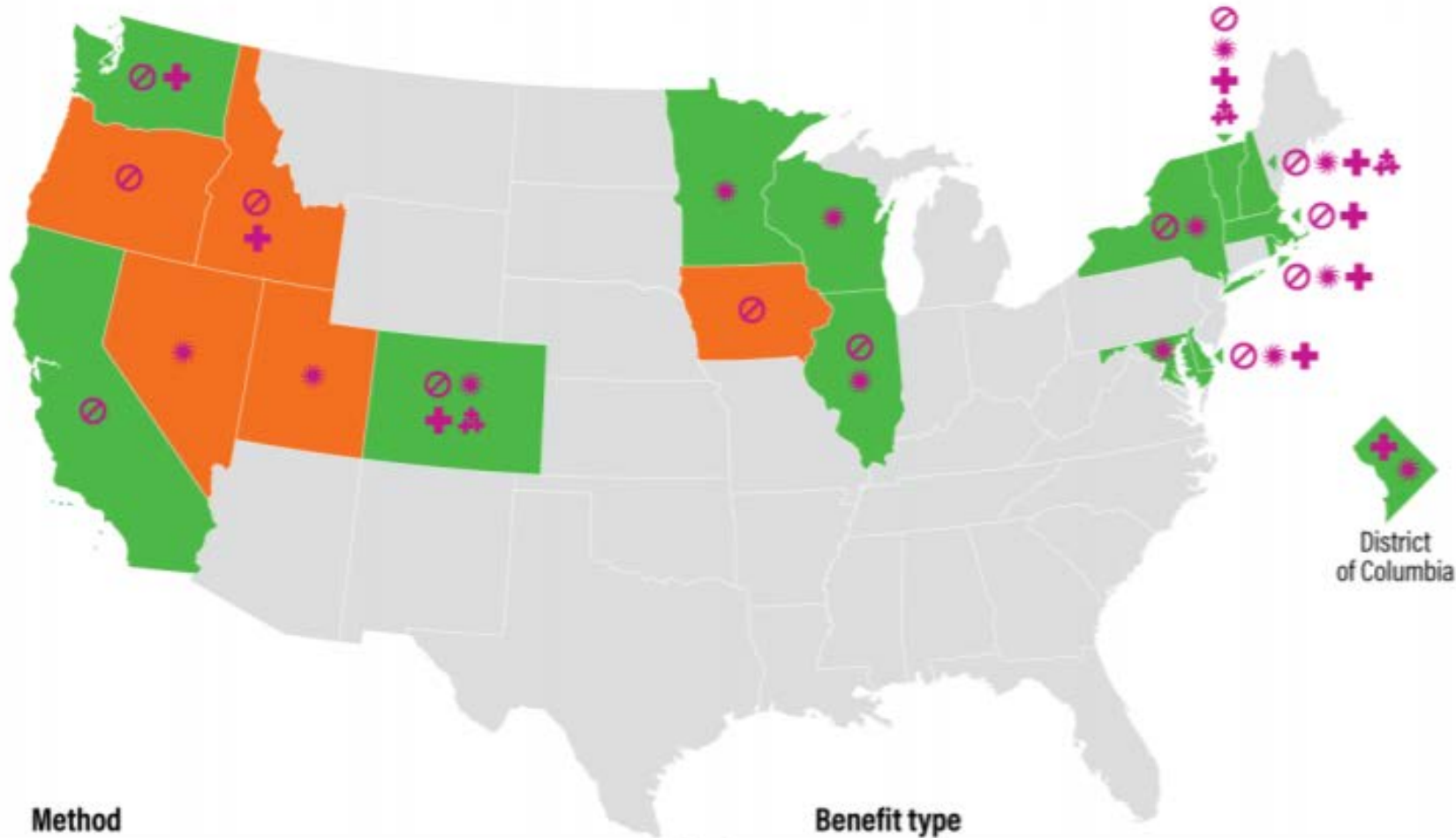
Rank	State	Dollars per capita
1	West Virginia	\$184
2	Kentucky	\$148
3	Pennsylvania	\$140
4	Ohio	\$137
5	Indiana	\$128
6	Tennessee	\$124
7	Alabama	\$106
8	Michigan	\$105
9	Delaware	\$103
10	Arkansas	\$98
11	Missouri	\$89
12	Virginia	\$89
13	Mississippi	\$89
14	Illinois	\$87
15	Maryland	\$87

Table 1. Top 15 states based on avoided health harms, per capita (US\$)

Utility Cost-Effectiveness Testing

- Utility commissioners are an important potential audience for monetized health benefits from energy efficiency programs
- In some states, these dollar values can be used in cost benefit assessments
- Increasing program health benefits can make the program more cost-effective – more funding for your program!

Which states include health benefits in cost effectiveness tests?



Method



Monetized. State estimates the dollar value of at least one of the four benefit types.



Substitutes. State uses proxies and/or other substitutes.

Benefit type



Avoided utility environmental costs



Societal environmental



Participant health



Societal health

•National Energy Screening Project database of screening practices

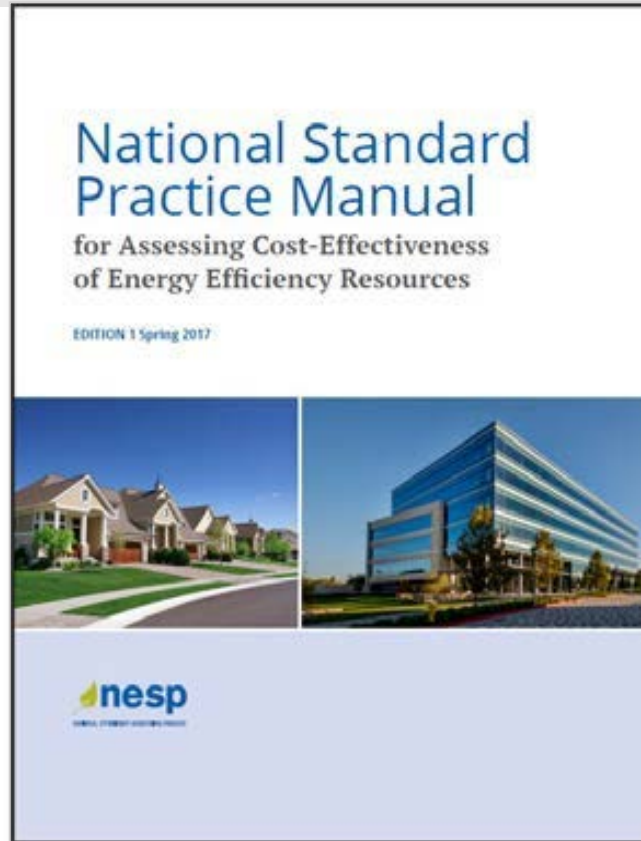
: <https://www.nationalenergyscreeningproject.org/state-database-dsesp/>

•[Cost-Effectiveness Tests: Overview of State Approaches to Account for](https://www.acee.org/topic-brief/he-in-cost-effectiveness-tests/)

[Health](https://www.acee.org/topic-brief/he-in-cost-effectiveness-tests/): <https://www.acee.org/topic-brief/he-in-cost-effectiveness-tests/>

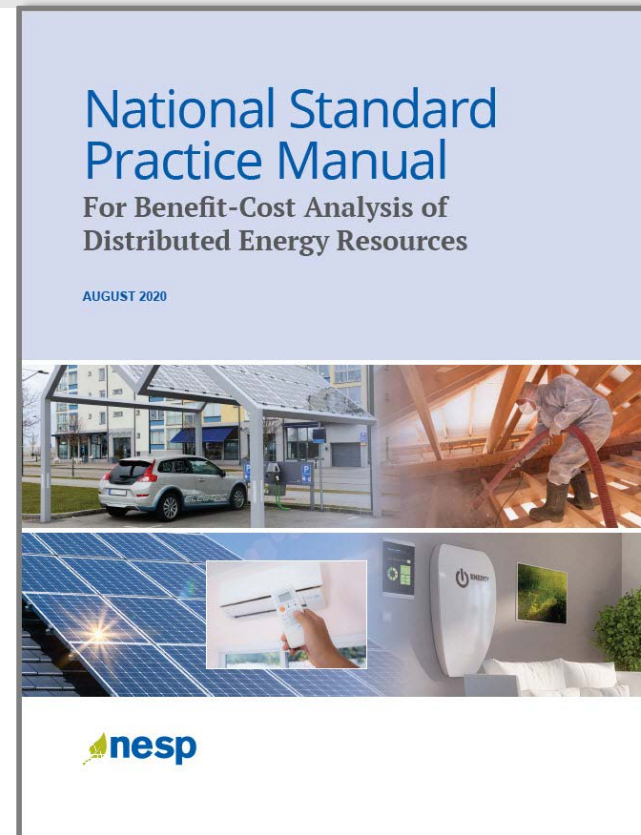
NSPM for EE

May 2017



NSPM for DERs

August 2020



The NSPM for DERs incorporates and expands on the NSPM for EE. See [comparison](#)

Examples of monetized health impacts and messaging

- Saving Energy, Saving Lives (ACEEE, 2018)
 - <https://aceee.org/research-report/h1801>
- ORNL WAP Retrospective
 - *Health and Household-Related Benefits Attributable to the Weatherization Assistance Program*, [ORNL/TM-2014/345](https://www.ornl.gov/TM-2014/345)
 - Full list of reports from the broader evaluation: <https://weatherization.ornl.gov/wap-retrospective/>
- Duke Energy Helping Home Fund
 - Evaluation report: <https://www.nccaa.net/duke-energy-hhf>
- National Center for Healthy Housing
 - Library of case studies: <https://nchh.org/tools-and-data/financing-and-funding/healthcare-financing/case-studies-and-resources/>

Oakridge National Labs WAP National Evaluation

- Surveyed participants on changes in direct health-related costs
- Monetized eleven health-related non-energy benefits:
 - Reduced Carbon Monoxide Poisonings
 - Reduced Home Fires
 - Reduced Thermal Stress on Occupants
 - Reduced Asthma-Related Medical Care and Costs
 - Increased Productivity at Work Due to Improvements in Sleep
 - Increased Productivity at Home Due to Improvements in Sleep
 - Fewer Missed Days at Work
 - Reduced Use of High Interest, Short-Term Loans Increased Ability to Afford Prescriptions
 - Reduced Heat or Eat Choice Dilemma Faced by Pregnant Women
 - Reduced Need for Food Assistance
- Average per-unit cost in PY2008 was ~\$4,000; estimated present value of health-related benefits was ~\$14,148!

Tools for monetizing potential health impacts of energy efficiency improvements

EPA Benefits-per-KWHour tools:

<https://www.epa.gov/statelocalenergy/public-health-benefits-kwh-energy-efficiency-and-renewable-energy-united-states>

AVERT + COBRA models: together estimating health benefits of pollution reductions from programs and policies that reduce air pollution

- *Saving Energy, Saving Lives* (2018)

Questions for Discussion

- Has your program monetized health impacts? If so: How did you develop these numbers? How did you use them?
- If not: In what situations might monetized health impact values be useful? What stakeholders in your work might be interested in these values?
- What questions do you have about how to get started?

Why Introduce Your Program on the Google Group?

- Find others in your state or region to collaborate or brainstorm
- Help others find you! Make your own work and questions visible to a network of 300+ participants
- Connect with others working to address the same challenges, nearby and nationally

Help create a valuable peer directory by posting just once, e.g.:

- Your name, state, and email/preferred contact
- Your program name/organization
- One thing you're doing (or considering) to incorporate health to your program
- One question you have that someone else in the network might be able to answer

Calendar of Upcoming Sessions

Date	Session Theme
Thurs. Jun. 24 3PM ET	'Programs in the Wild': Peer sharing of program design successes

If you're interested in sharing for a few minutes about your program's work or in-progress initiatives at the June 24th session, please reach out to Christine at cgerbode@aceee.org

Thank you for attending today's session!

Please go introduce yourself on the Google Group briefly

Feel free to send questions, comments, or feedback to
Christine at cgerbode@aceee.org

