



BUILDING TECHNOLOGIES
RESEARCH AND
INTEGRATION CENTER

June 17-18, 2026

Manufactured Housing Workshop



U.S. DEPARTMENT
of ENERGY

ORNL IS MANAGED BY UT-BATTELLE LLC
FOR THE US DEPARTMENT OF ENERGY



Workshop Context

- **~20 million Americans**
live in manufactured homes, often with proportionately higher energy costs than other building stocks, and
- **Manufactured housing**
underrepresented
in energy research.

Workshop “Why”

Explore opportunities

to improve manufactured housing energy affordability
with scalable retrofit solutions and new home innovations.

Workshop Goals

- **Develop basis for a roadmap**
to scaling affordable and cost-effective retrofits to older manufactured housing stock.
- **Identify high-impact R&D**
for optimizing design and construction of new manufactured housing.

Workshop Desired Outcomes – Day 1

- **Shared Baseline Data:**
 - Agreed baseline characterization
 - List of data gaps critical to informing innovation
 - Define criteria for selecting near-term retrofit targets
- **Priority Retrofit Pathways:**
 - Define market ready retrofit packages
 - Prioritize highest impact and scalable retrofit innovations
- **Market Delivery Barriers and Opportunities:**
 - Identified key barriers and best practices across utilities, park owners, and homeowners
 - Defined workforce and supply chain constraints and opportunities

Workshop Desired Outcomes – Day 2

- **Financing and Scaling Mechanisms:**
 - Identified scalable financing mechanisms beyond rebates
 - Defined aggregation strategies for park-level deployment
 - Identified utility and manufacturer partnership opportunities
- **Implementation:**
 - Defined implementation strategies (park-scale, homeowner, rental)
 - Identified workforce development needs and QA strategies
 - Actionable solutions aligned with implementation pathways
- **New Manufactured Home Innovations:**
 - Identified innovation opportunities
 - Research priorities supporting market growth and performance

Workshop Agenda: Day 1 - Morning

Time	What	Who
8:00 – 8:15 am	Welcome	Robert Wagner, ORNL
8:15 – 8:35 am	Workshop Overview	Sam Rashkin, ORNL
Session 1: Baseline and Data Alignment		
8:35 – 9:15 am	Presentation: Existing MH baseline data	Ed Hudson, HIRL
	Facilitated Discussion:	
9:15 – 10:00 am	<ul style="list-style-type: none"> • MH stock characterization key takeaways • Critical data gaps and who can fill them 	Sam Rashkin, ORNL
10:00 – 10:15 am	Break	
Session 2: Priority Retrofit Pathways		
10:15 – 10:55 am	Presentation: What We Learned from 100's of MH Retrofits	Francis Conlin, HPBS
	Facilitated Discussion:	
10: 55 - 11:40 am	<ul style="list-style-type: none"> • MH retrofit upgrade packages • Prioritized high-impact retrofit innovations 	Sam Rashkin, ORNL
Working Lunch		
11:40 am – 1:00 pm	Presentation: ORNL's Building Technologies Research and Integration Center (BTRIC)	Melissa Lapsa, ORNL

Workshop Agenda: Day 1 - Afternoon

Time	What	Who
1:00 – 2:05 pm	Tour of ORNL Manufactured Home Research Project	Kuma Sumathipala, ORNL Andre Desjarlais, ORNL
2:05 – 2:45 pm	Session 3: Market Delivery Barriers and Opportunities Presentation: Homeowner Experiences Living in MHs	Chrissi Antonopoulos, PNNL
2:45 – 4:00 pm	Facilitated Discussion: <ul style="list-style-type: none"> • Utility incentive barriers and best practices • Park-owner retrofit barriers and best practices • MH homeowner retrofit barriers and best practices • Retrofit workforce and supply chain barriers and best practices 	Sam Rashkin, ORNL
4:00 – 4:30 pm	Day-One Wrap-up Facilitated Discussion <ul style="list-style-type: none"> • Key agreements and findings 	Sam Rashkin, ORNL
4:30 pm	Adjourn / Bus Back to Hotel	

Workshop Agenda: Day 2 - Morning

Time	What	Who
8:00 – 8:20 am	Workshop Day 2 Overview	Sam Rashkin, ORNL
	Session 4: Financing and Scaling Mechanisms	
8:20 – 9:00 am	Presentation: Successful MH Retrofit Financing Case Studies	Heather Hendrickson, Entergy
	Facilitated Discussion:	
9:00 – 9:45 am	<ul style="list-style-type: none"> • Scalable financing models beyond and including rebates • Preferred park-level aggregated demand strategies • Potential equipment manufacturer and utility partnerships 	Sam Rashkin, ORNL
9:45 – 10:00 am	Break	
	Session 5: Retrofit Implementation Pathway	
10:00 – 10:40 am	Presentation: Implementation Lessons Learned Case Study	Paulo Velasco, CSM
	Facilitated Discussion:	
10:40 - 11:30 am	<ul style="list-style-type: none"> • Retrofit implementation strategies: [park-scale, homeowner, workforce development] • Implementation solutions aligned with strategies 	Sam Rashkin, ORNL
11:30 am – 1:00 pm	Working Lunch Presentation: DOE Residential Programs Update	Amy Royden-Bloom, DOE

Workshop Agenda: Day 2 - Afternoon

Time	What	Who
	Session 6: New MHs: Innovation Opportunities	
1:00 – 1:40 pm	Presentation: New MHs Innovation Opportunities	Jordan Dentz, SBRA
1:40 – 2:45 pm	Facilitated Discussion: <ul style="list-style-type: none">• MH market growth opportunities• MH research aligned with growth opportunities	Sam Rashkin, ORNL
2:45 – 3:00 pm	Break and Early Shuttle to Hotel	
	Day-Two Wrap-up	
3:00 – 4:00 pm	Facilitated Discussion <ul style="list-style-type: none">• Key agreements and findings• Next steps• Meeting review	Sam Rashkin, ORNL
4:00 pm	Adjourn / Bus Back to Hotel	



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