



NAECA III Generation Water Heaters

& Their Performance Measurement

2016 ACEEE Hot Water Forum

Troy Trant, P.E.

Discussion Topics

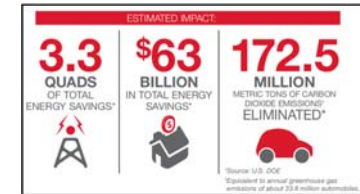


- NAECA III Generation Water Heaters and innovations beyond minimum standards
- New Trends: Air & Water Integrated Systems
- EF to UEF Transition

NAECA III: Recap by the Numbers



NAECA III – new DOE energy efficiency requirements effective April 16, 2015



What it means for product design –

Gas



- 20-55 gallon capacity: Increase of 2-3 pts. EF
- >55 gallon capacity: Increase of 21+ pts. EF

Electric



- 20-55 gallon capacity: increase of 2-5 pts. EF
- >55 gallon capacity: increase of 110+ pts. EF

Impacted Models – >80% of the industry’s models affected

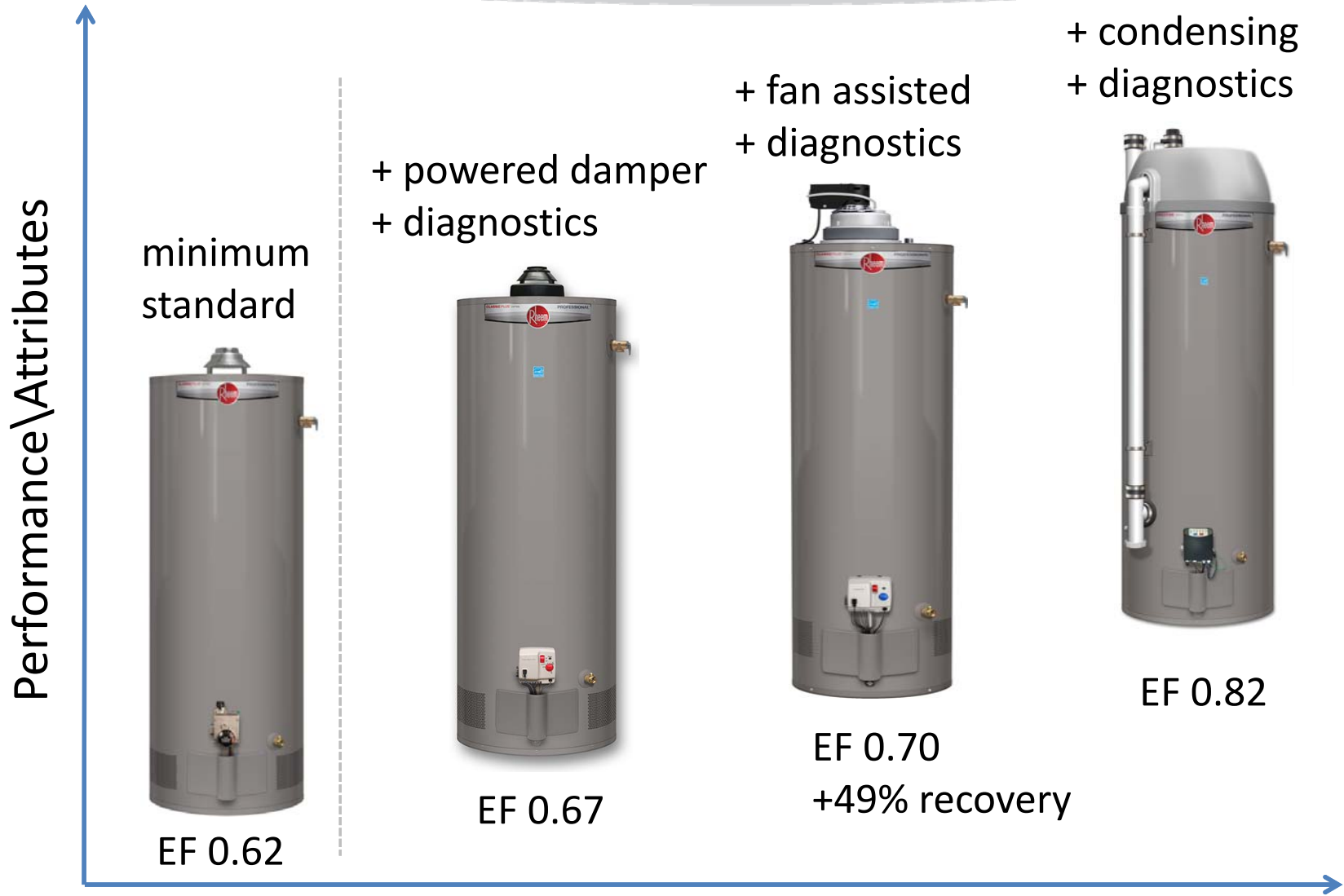


Impact to Rheem and other manufacturers:

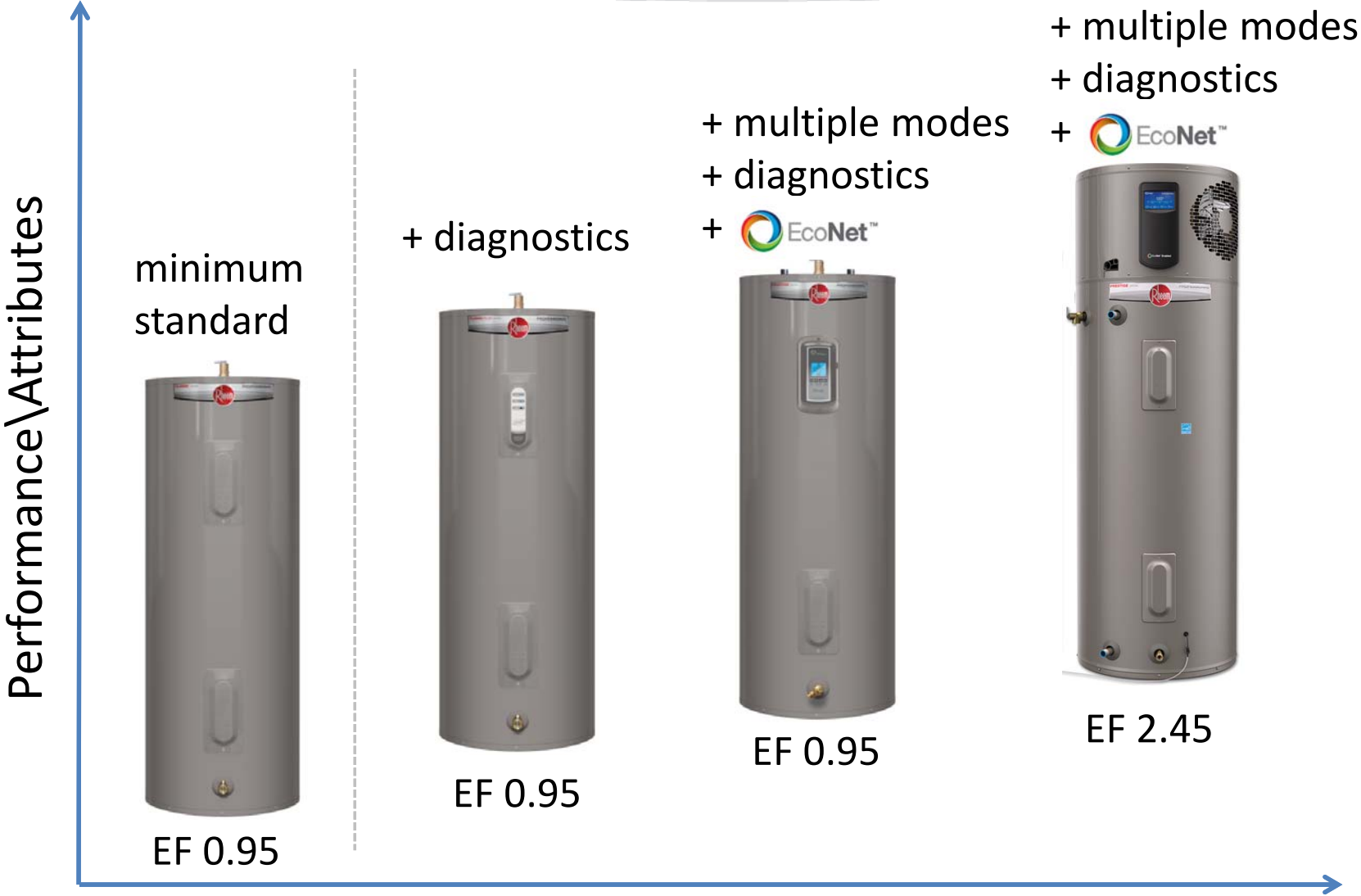
- ✓ \$Millions invested in redesign
- ✓ Multi-year R&D project
- ✓ Changes to product designs
- ✓ New Manufacturing Equipment
- ✓ New Tools and Dies
- ✓ New Supplier Tooling
- ✓ Test and Quality Assurance Equipment
- ✓ Extensive pilot runs and design validation work
- ✓ Extensive testing and lab expenses
- ✓ Global supplier support & validation
- ✓ Multiple public awareness campaigns
- ✓ 2015 UED conversion costs



Residential Gas – Product Innovations



Residential Electric – Product Innovations





New Trends:

Air & Water Integrated Systems

H₂AC Commercial

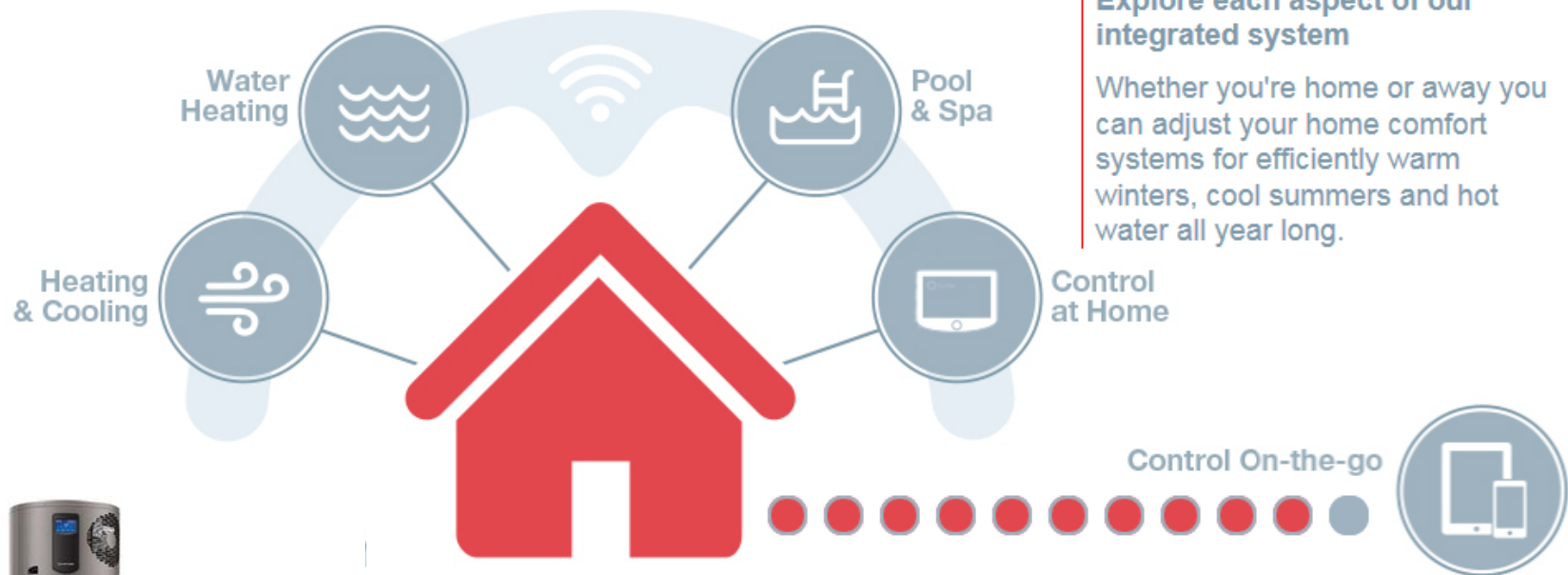


- Full service restaurants, commercial laundry, hotels, etc...
 - Rooftop air conditioning
 - >1,500 gallons/day hot water use
- Operating principle:
 - Redirect waste heat (refrigerant) to preheat H₂O to 125°F
- Economics:
 - Up to 50% savings on annual water heating costs
 - Up to 20% savings on overall energy costs
 - < 2 year payback (depending on regional climate, usage, & utility rates)





System Connectivity



Explore each aspect of our integrated system

Whether you're home or away you can adjust your home comfort systems for efficiently warm winters, cool summers and hot water all year long.



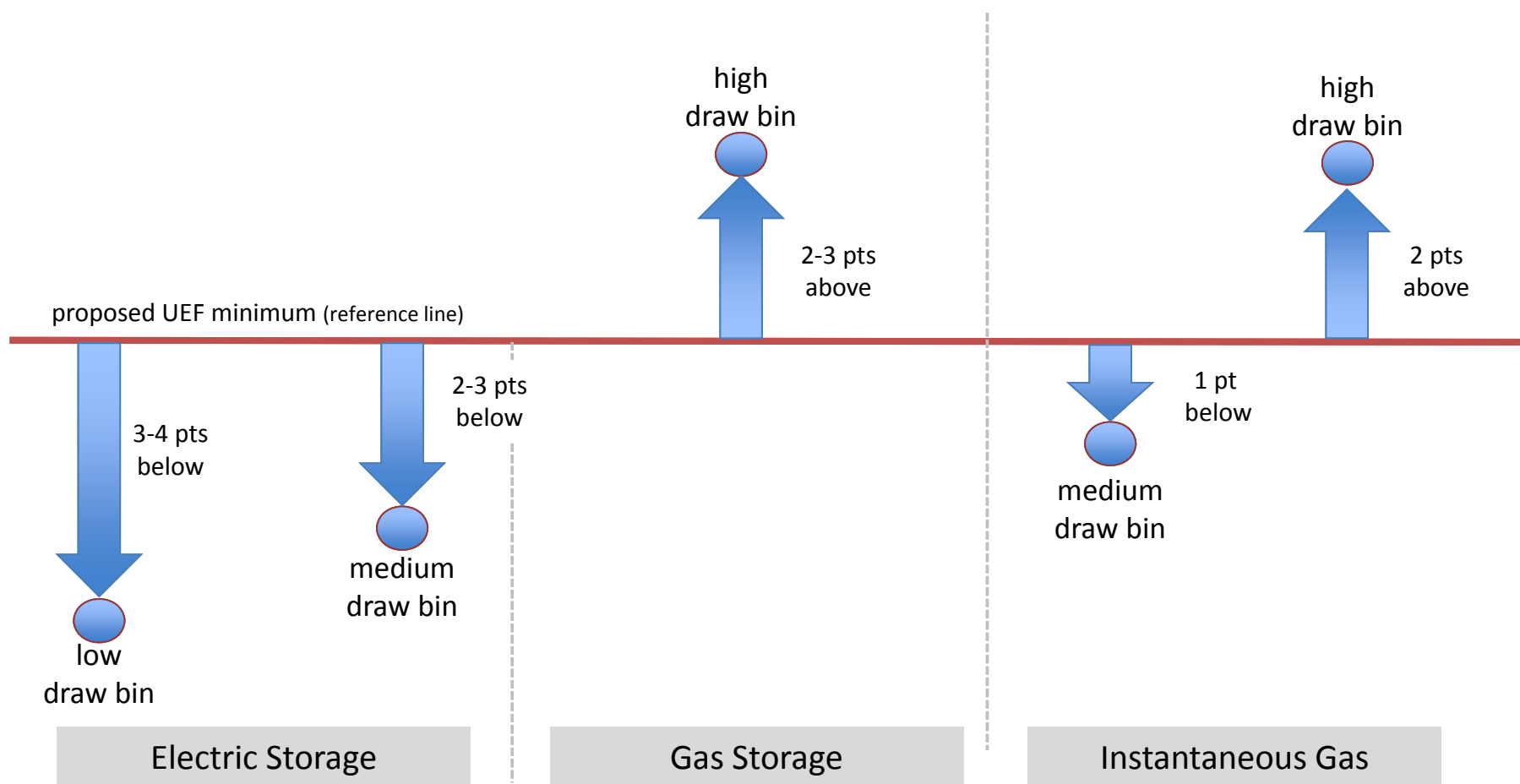


EF to UEF Transition



UEF Performance Testing

- EF & UEF tests underway to aid with characterizing NAECA III units
- Industry & researchers building experience with new procedure



Thank you!

Troy E. Trant, P.E.
Manager, Advanced Technology Analysis
Rheem Manufacturing Company
2600 Gunter Park Drive East
Montgomery AL 36109
334.260.1364
334.260.1350 fax

email: troy.trant@rheem.com
www.rheem.com

