

ET Summit 2019

Presented by



A Next Generation Heating Solution

Trends and Opportunities in Residential HVAC Systems

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Williams

Manufacturer of HVAC Equipment Since 1916
400,000 sq. ft. on 16 acres in Colton, CA



Warmolator



Hydronic HVAC Office Building

Market Drivers

Competitive Advantage

Product Innovation

Technology



Investing in a brighter
future...

Global Macroeconomic Trends

Opportunity to be disruptive has never been better

1 Technology Trends

- **IoT** and related **machine learning** technologies are setting a new bar in driving intuitive, connected, and easy to use innovations.



2 Prefab World

- Movement toward prefabrication is here to stay
- Streamlines labor by reducing on-site work



3 Sustainability

- Initial movement relied on subsidies and regulations.
- Emerging opportunities address:
 - Reduced emissions
 - Increased efficiency



4 Health & Wellness

- IAQ
- Restful
- Concentration
- Productivity
- Recovery



5 Design for Manufacturing

- Reduce part count
- Use Common components
- Modular assembly









Protecting Human Health | Reducing NO_x CO, and Methane Emissions



Critical to attain federal health-based air quality standards

The challenge of replacing an existing furnace



- ✓  No electricity
- ✓  \$400-\$500 for electrician
- ✓  No ability to condensate
- ✓  Cost of added pipes and pumps
- ✓  Cost and risk associated with penetrating outside walls.
- ✓  Finding a replacement furnace that fits the existing opening and works with the existing venting.

The future is here—

**Introducing the Next Generation high
performance, high efficiency, affordable,
wall furnace heating solution.**



Leadership in HVAC | Wall Furnaces

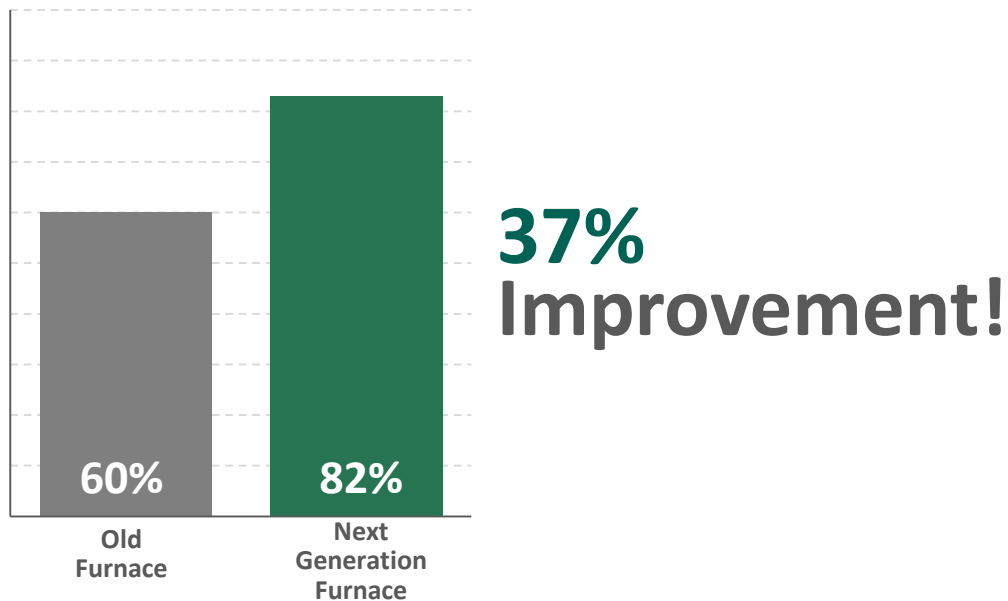
BENEFITS:

- **No standing pilot**
- **Ultra-Low NOx**, CO and methane
- **Increased efficiency** and sustainability
- Ease of retrofit installation and upgrade
- Connected device
- Self adjusting smart device
- Smart thermostat integration
- Contemporary look and feel



Energy Efficiency

New technology enables game changing increase in energy efficiency



Dynamic Response

Modulating input range from 15 -30K BTU and dual wall 20 -40K BTU

Adaptive to different
Environments

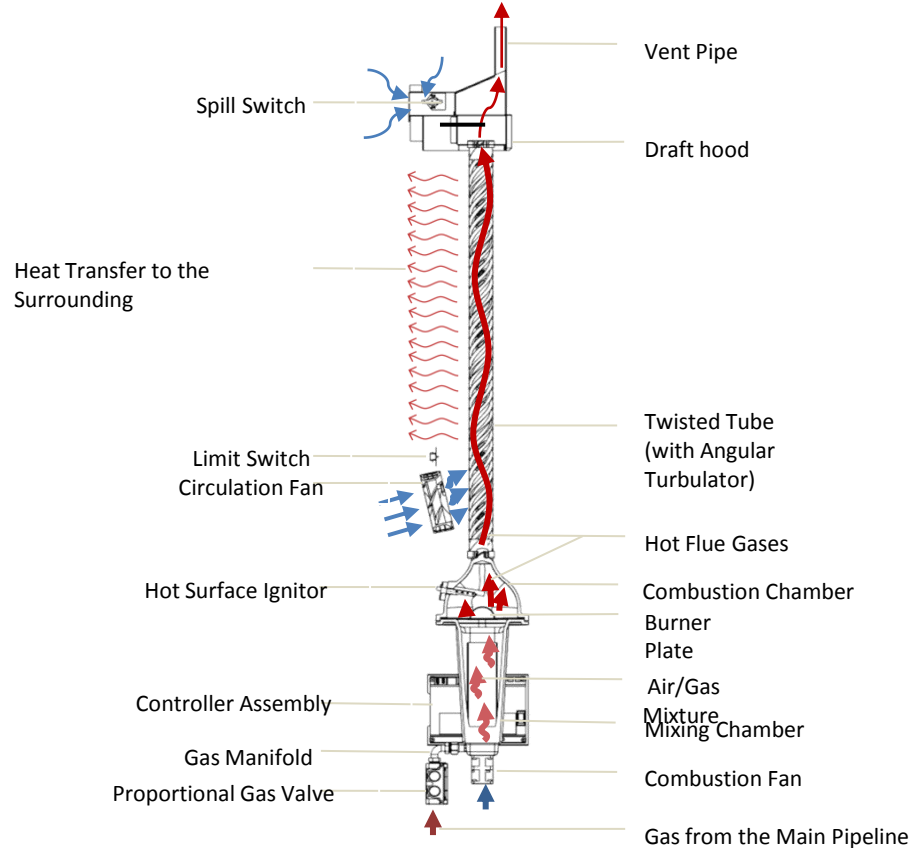
Energy Savings

Superior Comfort

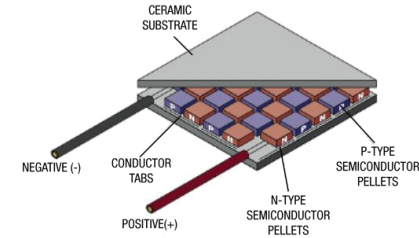


The new furnace adapts to a wide range of spaces

Low NOx and efficiency



On-board Power Harvesting



Thermoelectric power generation

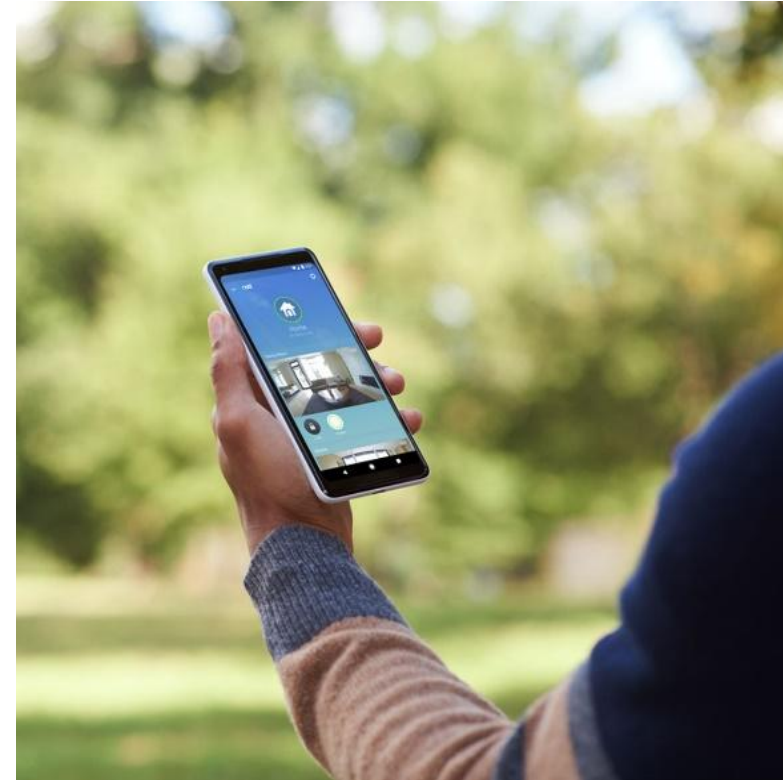
- No AC power required
- Heat energy is converted to electrical energy
- Circulation fans to improve efficiency and comfort

Benefits

- No new wiring needed during installation
- Device will continue to heat with power outage

IOT Connected Devices

- **Benefits for customers**
 - Enhanced control - scheduling
 - Remote control
 - Alerts
 - Improved customer support
- **Benefits for gas utilities**
 - Use Data collection
 - Efficiency data
 - Demand response



California Gas Utility Service Area

Current replacement rate would take ~ 85 years to remediate dated technology

Installed Base
3.5 Million Units



Energy Efficiency

Based on multi-generational product roadmap within California climate zones



**2,037,559 Million Metric Tons
Carbon Dioxide Emissions Savings**



**4,981,805,868 Billion Miles
Driven By Passenger Vehicles**



**\$441,945,000 Million in Annual
Savings**

*2.1 MM units at 183 therms/unit savings & \$1.15/therm

*Greenhouse Gas Equivalencies Calculator, EPA- Environmental Protection Agency

Thank you

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