



Water Heaters: Grid-Enabled Water Heaters

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What are Cost/Benefits of Losing this Tool?



- These larger units store more energy with negligible unit efficiency losses.
- Store renewable and variable energy – **increase grid SYSTEM efficiency.**
- Successfully reduce peak, especially in rural areas, for decades.
- Are capable of advanced grid interactivity.
- Will not likely be replaced with large heat pumps (smaller more cost-effective units, two units, higher temperatures, etc.)

DOE WH Standards Timeline

- April 2010 DOE Issues Stds. Final Rule
- June 2012 DOE issues RFI for DR WHs
- February 2013 DOE issues Waivers NOPR
- August 2013 Broad stakeholder group negotiates proposal for fix to issue
- Sept. 2014 DOE rejects Steffes' request exception with negotiated criteria on standing
- Nov. 2015 Vaughn Corporation submits a request for exception - court case
- April 2015 Congress passes legislative fix – “grid-enabled water heaters
- 2016-2017 Light-Duty Commercial WH phased out

Legislation - GEWHs

- Provides for legal production of grid-enabled water heaters that are 75+ gallons in capacity, are at least 94% efficient, are equipped an activation lock, are labeled for use only in ETS/DR program.
 - The activation lock/key is a physical device directly on WH locked by default and contains a physical, software, or digital communication means that must be unlocked for the product to work.
- Includes provisions to allow DOE to specify communications capabilities on the WHs.
- Enforcement provisions making it illegal to activate devices, distribute keys inappropriately, or remove labels.
- **All advancing technology while preserving benefits of rule!**

(April 2015) If President Signed the Bill Today...

- Business case must make sense to manufacturers.
- Product design must be completed.
 - Activation key
 - Interface and load switches
 - New UL certifications
- Manufacturing lines must be retooled.
- New distribution channels must be established.
- Utility programs must be adapted.
- If DOE is involved, processes must be developed and rules would need to be promulgated.

- ***This will all take time and effort – there is no business as usual.***