



**ENERGY STAR®**

**Dedicated Purpose Pool Pumps  
Draft 2 Versions 2.0 and 3.0**

**Stakeholder Webinar and Discussion**

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January 8, 2017



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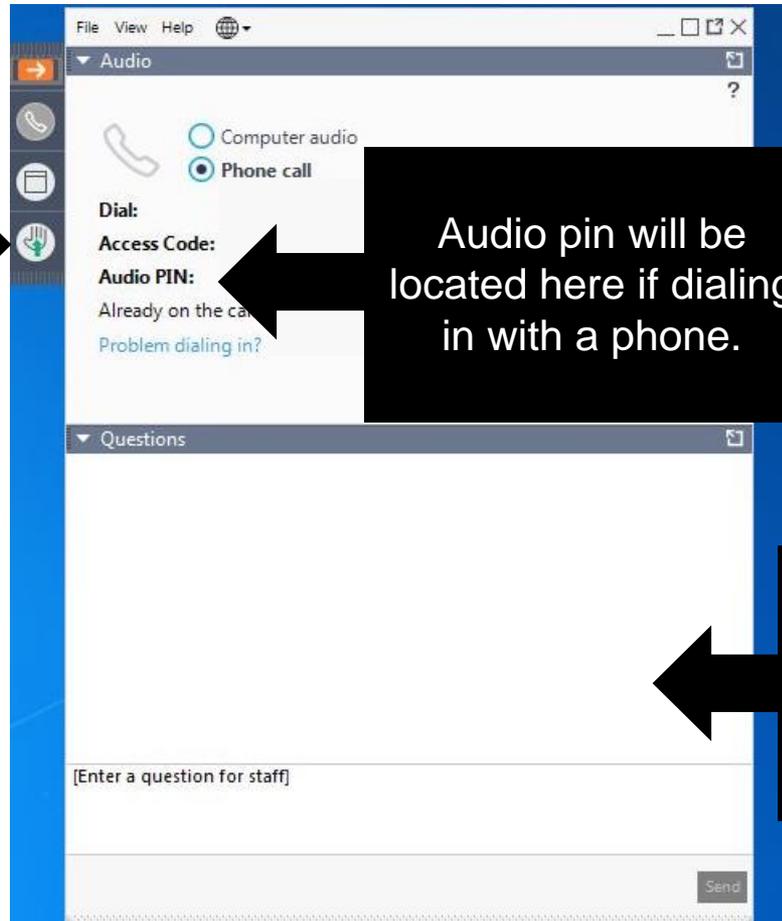
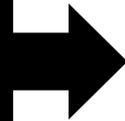
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# Agenda

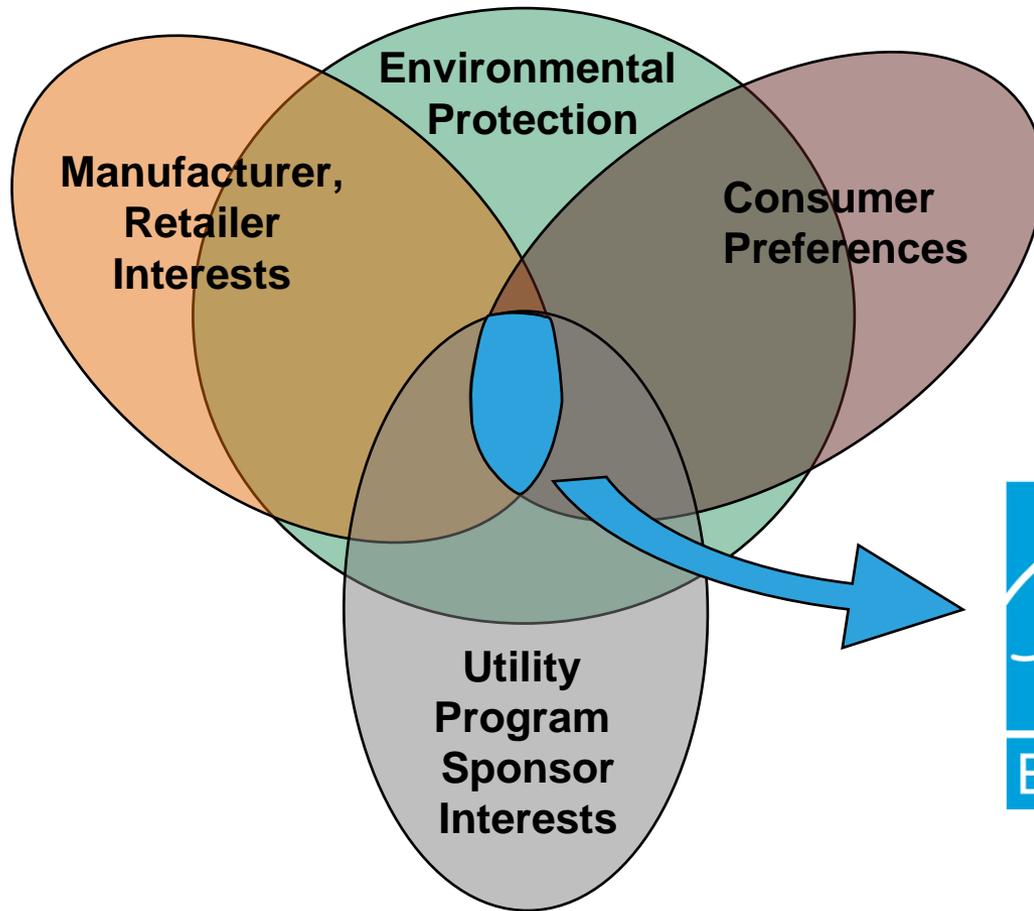
- 1** Introduction
- 2** Changes from Draft 1
- 3** Certification Criteria
- 4** Next Steps
- 5** Discussion



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# ENERGY STAR's Focus



- Cost-effective
- No sacrifice in performance
- Government-backed
- Consumer is Key**

# Specification Development Cycle





## Important Process Elements

- Consistency
- Transparency
- Inclusiveness
- Responsiveness
- Clarity



## Guiding Principles for Specification Development

1. Significant energy savings can be realized on a national scale
2. Product performance can be maintained or enhanced with increased energy efficiency
3. Purchasers recover their investment in increased energy efficiency within a reasonable period of time
4. Energy efficiency can be achieved through several technologies
5. Product energy consumption and performance can be measured and verified with testing
6. Labeling would effectively differentiate products and be visible for purchasers



## Drivers for Revision

- New DOE Test Method and Standards
  - Compliance with standards required on and after July 19, 2021
- Changing market shows clear trend of single-speed and two-speed sales dropping and variable-speed sales increasing
- Opportunity to capture additional energy savings
  - Broadening scope to include self priming pumps and booster pumps
  - Raising levels as the market allows



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## Version 2.0 Level for Large Self Priming Pumps

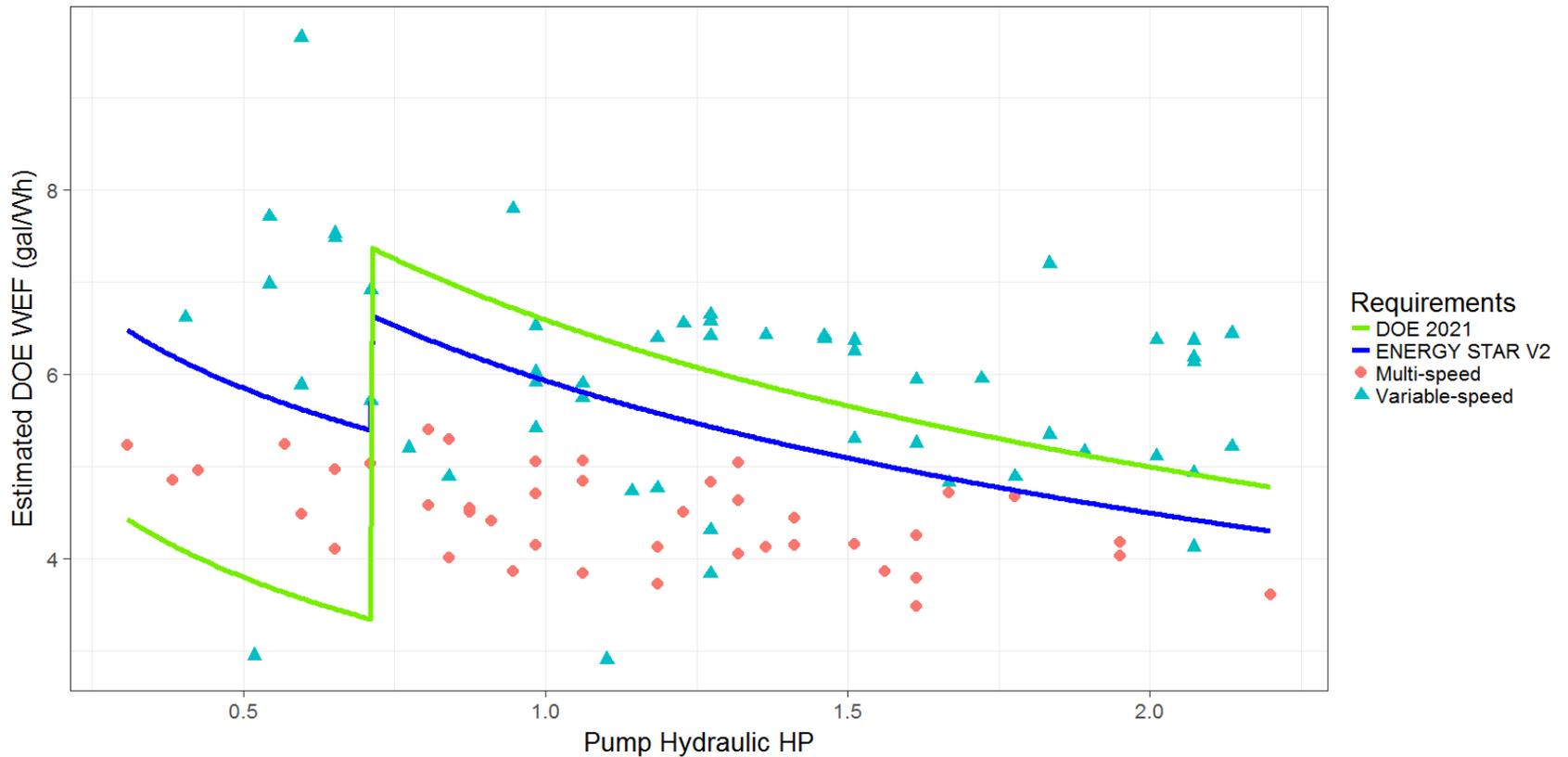
- Draft 1: 10% below DOE EL6 which is the standard level in 2021
- Draft 2: at DOE EL6
- Why the change in Draft 2?
  - EPA was concerned about product availability
  - Stakeholders indicated that the less conservative estimate of WEF for existing models, developed by the multi-stakeholder working group, is reliable
  - These estimates show robust product availability now at EL6
  - Stakeholders suggested using DOE EL6 to limit market confusion
  - See charts following this slide
- No other changes to proposed levels in Version 2.0 or 3.0 for any product types



# EPA Estimate and Draft 1 proposal for Version 2.0 Self Priming Pumps

## Interim ENERGY STAR Requirements, Inground Pumps

Note: Interim ENERGY STAR V2 Requirements Small Pumps: EL5, Large Pumps: 10% Below DOE

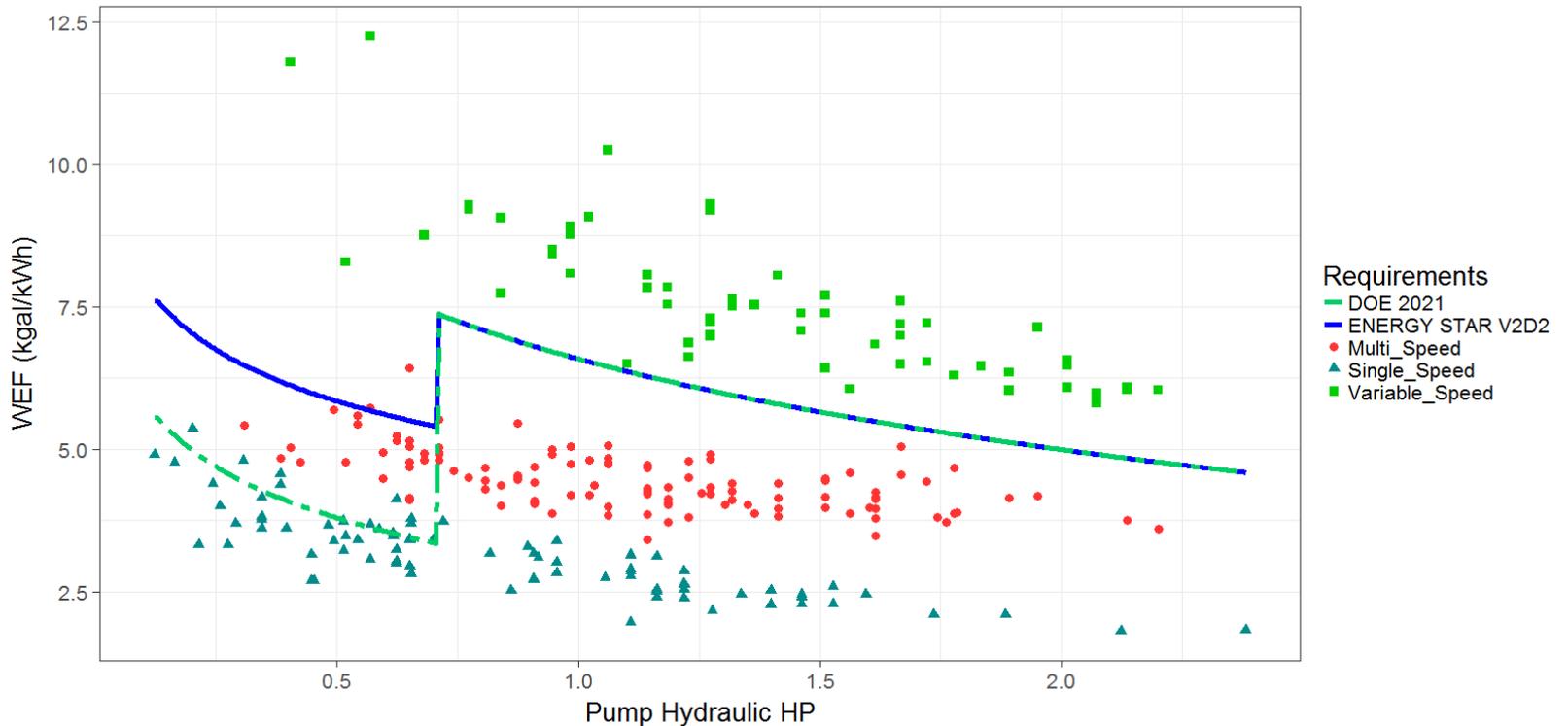




# Working group estimate and Draft 2 proposal for Version 2.0 Self Priming Pumps

Version 2 Draft 2 ENERGY STAR Requirements, Inground Pumps

ES V2D2: Small Pumps: EL5, Large Pumps: EL6, Data: DOE (All Sources)



Source: DOE Product Database



# Replacement Motors, Timers, Freeze Protection

- Replacement Motors
  - Draft 1 - Include replacement motors using Pool Pump Weighted Energy Factor Criteria
  - Partners commented on a number of efforts to define test methods for replacement motors; advised waiting
  - Draft 2 – Replacement motors remain TBD; will develop criteria when a test method is complete and sufficient data available
- Freeze protection requirements for pumps with freeze protection
  - Proposed in Draft 2
  - Same as requirements in 2021 DOE standard
- Timers for integral cartridge and integral sand filter pumps
  - Proposed in Draft 2
  - Same as requirements in 2021 DOE standard
  - Imposes reasonably small burden and delivers large savings for this class of pumps



## Data Collection

- Add Curves A/B/C reporting back to draft spec
  - Version 1 included reporting of other curves which EPA proposed eliminating in Draft 1
  - Draft 2 proposes to continue collecting Curve A/B/C flow and power at maximum speed
    - Stakeholder input that Curve A/B/C information at maximum speed is useful for sizing
    - Tests are relatively easy to implement when testing with the DOE DPPP Test Procedure
    - Collection requirement for other regulatory entities already
- Add Power Factor reporting
  - Reporting requirement in DOE DPPP Test Procedure
  - Provides information valuable to utilities, efficiency organizations, installers, and consumers without additional testing burden



## Connected Criteria

- Criteria remain optional
- Changes made to facilitate lower testing burden
  - Required responses based on flow (typically measured when testing pumps) instead of RPM
  - 1:1 relationship between flow and RPM for a given model, so requirements are equivalent
- Several definitions and examples added to clarify requirements
- Clarifications to Type 3 response for pumps that are running when they receive the signal
  - Minimum flow increase requirements proposed
  - Maximum flow increase limit proposed based on manufacturer guidance



## Definitions

- Definitions modified
  - WEF, Rated HP, Total HP, etc, modified to use definitions in 10 CFR 431.462; no essential change in meaning
- Definitions added
  - To support additional requirements: freeze protection controls, timer, integral cartridge filter pump, integral sand filter pump
  - To clarify connected requirements: consumer over ride, time stamped over ride signal



# Sampling requirements

- Sampling requirements
  - Draft 2 - references 10 CFR 429.59, the test method, which requires a minimum of two samples
  - For ENERGY STAR products with DOE standards (which this will be for Version 3), EPA specifications typically also allow a four-sample option, aligning with Appendix B to Subpart C of Part 429
  - Will clarify if relevant here and if so, add this option
  - Partners sometimes choose this option for business reasons



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## Draft 2 Version 2.0 and Version 3.0 Energy Efficiency Levels

Pump Sub-Type	Size Class	Version 2.0 Energy Efficiency Level	Version 3.0 Energy Efficiency Level (Effective July 19, 2021)
<b>Self-Priming (Inground) Pool Pumps</b>	Small (hhp ≤ 0.13)	WEF ≥ 7.60	WEF ≥ 13.40
	Small (0.13 < hhp < 0.711)	WEF ≥ -1.30 x ln (hhp) + 4.95	WEF ≥ -2.45 x ln (hhp) + 8.40
	Large (hhp ≥ 0.711 )	WEF ≥ -2.30 x ln (hhp) + 6.59	WEF ≥ -2.45 x ln (hhp) + 8.40
<b>Non-Self-Priming (Aboveground) Pool Pump</b>	Extra Small (hhp ≤ 0.13)	WEF ≥ 4.92	WEF ≥ 4.92
	Standard Size (hhp > 0.13)	WEF ≥ -1.00 x ln (hhp) + 3.85	WEF ≥ -1.00 x ln (hhp) + 3.85
<b>Pressure Cleaner Booster Pumps</b>	All	WEF ≥ 0.45	WEF ≥ 0.51
<b>Pool Pump Replacement Motors</b>	TBD	TBD	TBD



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## Next Steps

- Written comments are due **January 19, 2018**
- EPA hopes to finalize Versions 2.0 and 3.0 in Winter 2018
- Once finalized, products may be certified to Version 2.0 immediately
- Approximately 9 months from finalization, the product finder will **only** include products certified to Version 2.0
- Starting on July 19, 2021, the product finder will **only** include products certified to Version 3.0



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## Discussion

- Open to comments and questions
- Please raise your hand in the webinar control panel or write in a question
- The slides will be posted online
  - Slides, draft specifications, and all other related materials can be found on EPA's Pool Pumps [product development webpage](#)



## Written Comments

- In addition to making verbal comments during today's meeting, stakeholders are strongly encouraged to submit written comments and data
  - *Comments will be displayed for public viewing unless otherwise specified by the commenter*
- Please send all comments to: [poolpumps@energystar.gov](mailto:poolpumps@energystar.gov)

**Comment Deadline**

**January 19, 2018**



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