



ENERGY STAR®

Dedicated Purpose Pool Pumps

Draft 1 Versions 2.0 and 3.0

Stakeholder Webinar and Discussion

Abigail Daken, U.S. EPA

Sharon Frey, U.S. EPA

October 11, 2017



Webinar Audio Access

TO USE YOUR COMPUTER'S AUDIO:

You will be connected via your computer's microphone and speakers (VoIP). A headset is recommended.

-- OR --

TO USE YOUR TELEPHONE:

Select "Use Telephone" after joining the webinar and call in using the numbers below.

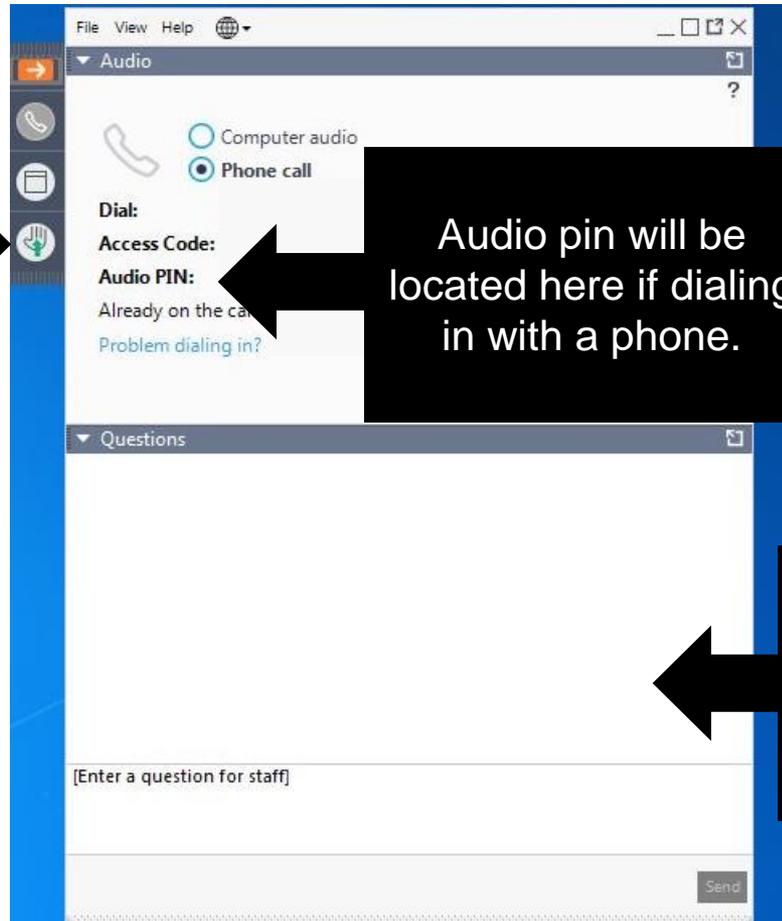
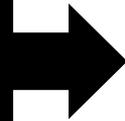
United States: (914) 614-3221

Access Code: 457-064-131

Audio PIN: Shown in webinar control panel after joining

Webinar Participation

Click here to raise your hand during the webinar. Doing so indicates that you want to be unmuted and speak to the audience.



Audio pin will be located here if dialing in with a phone.



Type any questions or comments here during the webinar.





Agenda

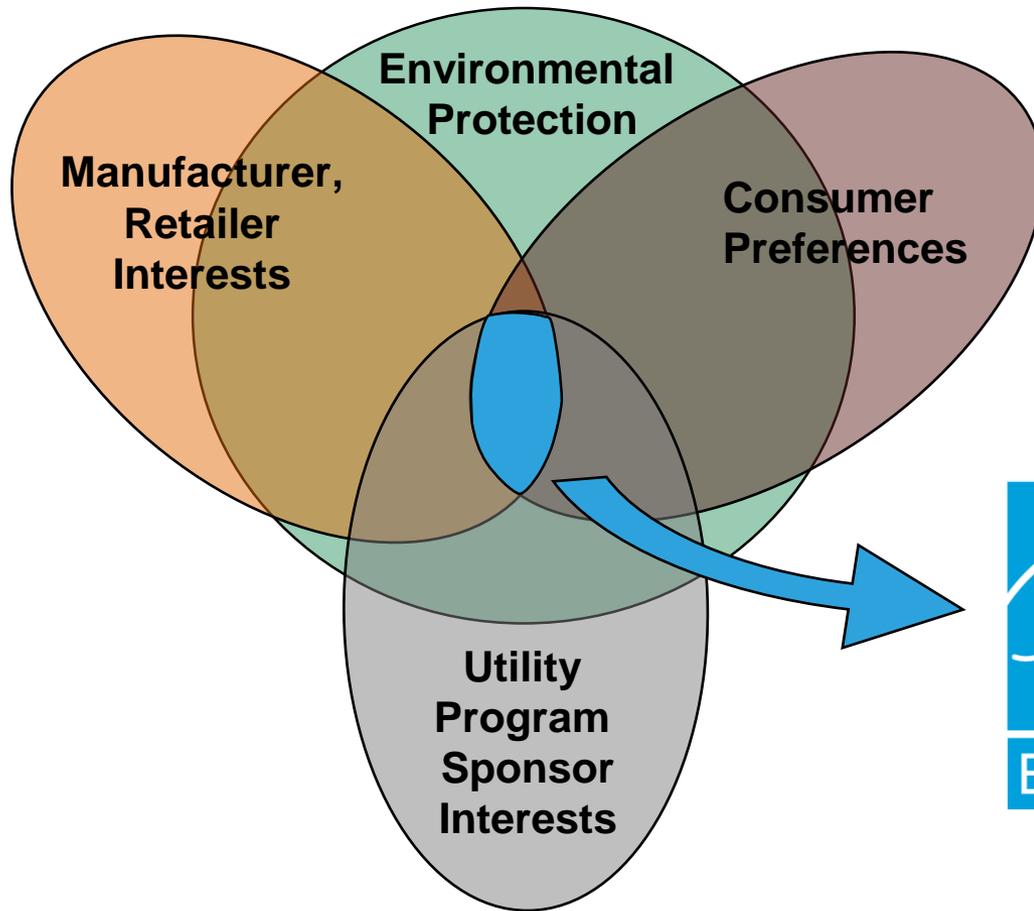
- 1** Introduction
- 2** Definitions and Scope
- 3** Certification Criteria
- 4** Next Steps
- 5** Discussion



1	Introduction
2	Definitions and Scope
3	Certification Criteria
4	Next Steps
5	Discussion



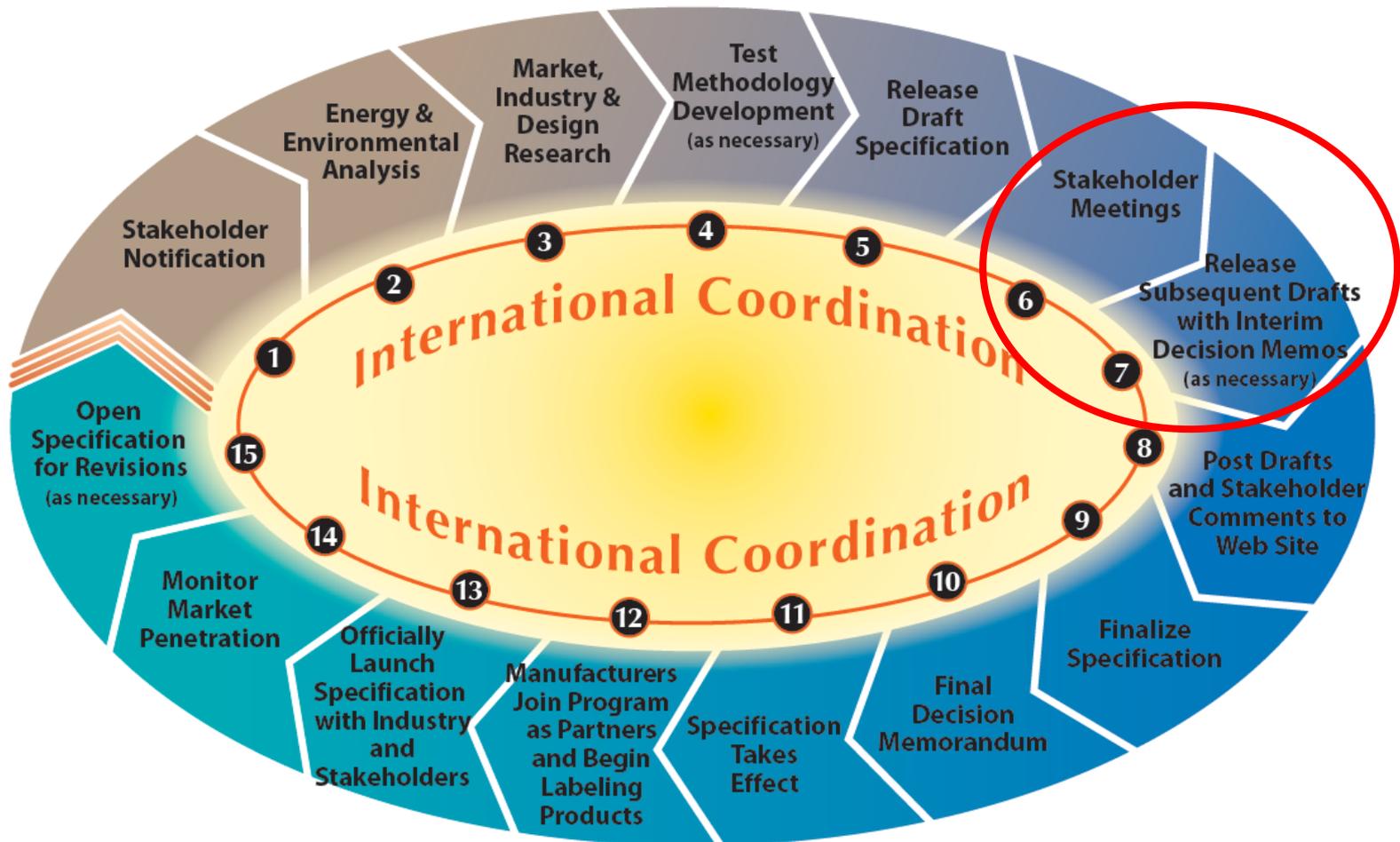
ENERGY STAR's Focus



- 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 Aboveground pumps and booster pumps
 - Setting stringent levels prior to July 19, 2021



- 1 Introduction
- 2 Definitions and Scope**
- 3 Certification Criteria
- 4 Next Steps
- 5 Discussion



Definitions

- Add from DOE's Energy Conservation Standards for Dedicated Purpose Pool Pumps ([82 FR 5650](#))
 - Pressure Cleaner Booster Pumps
 - Self-Priming
 - Non-Self-Priming
 - Hydraulic Horsepower (hhp)
 - Weighted Energy Factor (WEF)
 - High Flow Measurement Point
 - Low Flow Measurement Point
- Change terminology from: Inground Pumps to Self-Priming Pumps, and Aboveground Pumps to Non-Self-Priming Pumps
- Add definition for Pool Pump Replacement Motor



Scope

- Included Products
 - Self-priming (Inground) pumps with >0 hhp and ≤ 2.5 hhp
 - Non-self-priming (Aboveground) pool pumps
 - Pressure cleaner booster pumps
 - Replacement motors
- Excluded Products
 - Waterfall pumps



- 1 Introduction
- 2 Definitions and Scope
- 3 Certification Criteria**
- 4 Next Steps
- 5 Discussion



Versions 2.0 and 3.0 Requirements

- Rely on DOE WEF and new DOE test method
- Require efficiency levels varying with hhp, as DOE does
- Adjust connected criteria
 - Faster response to DR requests (lab testing shows products achieve proposed response time)
 - Over ride requirements adjusted for improved balance of utility and consumer interests
- Eliminate reporting requirements for Curves A and B



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)
Self-Priming (Inground) Pool Pumps	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 ≥ 0.9 x [-2.30 x ln (hhp) + 6.59]	WEF ≥ -2.45 x ln (hhp) + 8.40
Non-Self-Priming (Aboveground) Pool Pump	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
Pressure Cleaner Booster Pumps	All	WEF ≥ 0.45	WEF ≥ 0.51
Pool Pump Replacement Motors	TBD	TBD	TBD



Self-priming (Inground) pumps

- Not enough products for large Inground pumps at DOE levels to move straight to those levels now
- However, products meet proposed Version 2.0 level across a range of sizes, with excellent savings and payback of less than 4 years
- Deciding Version 3.0 level now provides certainty to market, reduces overhead of multiple revision processes
 - Pay back less than 3 years, for estimated cost difference

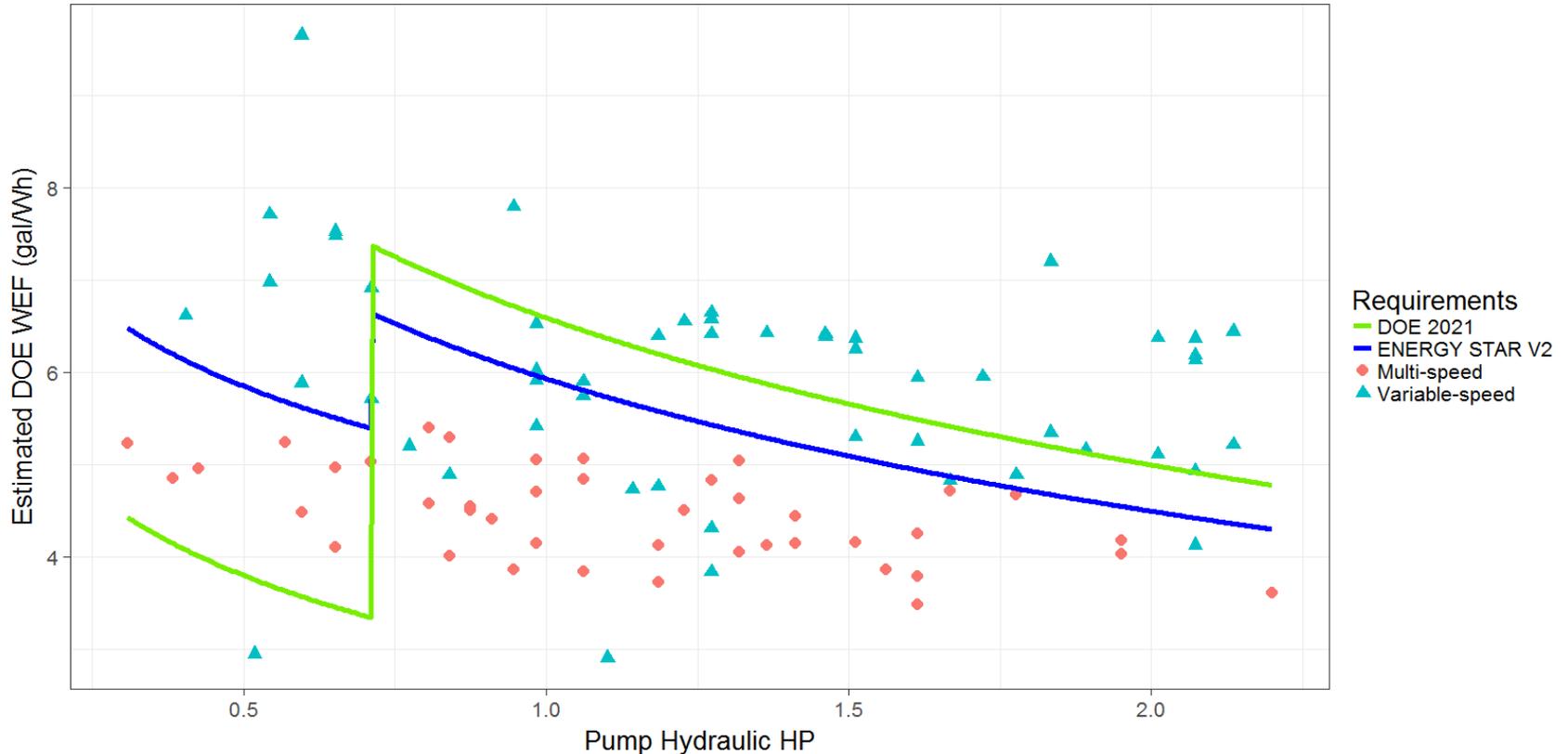


Version 2.0 Inground Pumps

- Large pumps - % of 2021 DOE level
- Small pumps - EL5

Interim ENERGY STAR Requirements, Inground Pumps

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





Expand Scope to Additional Pump Types

- Above-ground pumps
 - No clear market distinction from Inground pumps, excellent consumer payback and national savings
 - Base spec on DOE TSD
- Pressure Cleaner Booster Pumps
 - Save significant energy, particularly using variable speed motors (vs. single speed) in Version 3.0, significant national savings, and consumer payback



Non-self-priming (Above ground) pumps

- DOE TSD shows
 - 33% of extra small pumps sales meet Version 2.0
 - 2% of standard pumps (90% of market) meet Version 2.0
 - Consumer payback 2 years or less for Version 2.0
- Relatively stringent requirement, in terms of market share, justifies holding level for Version 3.0



Pressure cleaner booster pumps

- DOE TSD shows variation in efficiency of existing pumps, providing an opportunity for cost-effective savings through Version 2.0
 - 10% market share of products meeting proposed spec
 - Less than 2 year payback
- Very few variable speed pumps in this category at this time, however EPA believes trend is to go to variable speed
- Set Version 3.0 at variable speed efficiency level (according to DOE TSD) to capture savings by avoiding use of a flow restrictor plate



Replacement Motors

- Common to replace motor instead of entire pump
- Replacement motors come in single speed, multi-speed and variable speed
- Opportunity to capture significant energy savings by including efficient replacement motors
- If insufficient data now, will be able to add with minor revision later



Replacement Motors, cont'd

- DOE TSD shows variation in efficiency of existing pumps, providing an opportunity for cost-effective savings through Version 2.0
- Contemplating basing replacement motor spec on optional DOE Test Procedure
- Questions:
 - What is the current status of replacement motor test procedure development?
 - When are data expected to be available? What data exist now on motor performance?
 - We are aware of the CEC policy – are there others we should be aware of?
 - Other issues?



- 1 Introduction
- 2 Definitions and Scope
- 3 Certification Criteria
- 4 Next Steps**
- 5 Discussion



Next Steps

- Written comments are due **Oct. 26, 2017**
- EPA hopes to finalize Versions 2.0 and 3.0 in December 2017
- 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



- 1 Introduction
- 2 Definitions and Scope
- 3 Certification Criteria
- 4 Next Steps
- 5 Discussion**



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

Comment Deadline

October 26, 2017



Contact Information

Overall Specification:

Abigail Daken, EPA

Daken.Abigail@epa.gov

202-343-9375

Sharon Frey, EPA

Frey.Sharon@epa.gov

202-566-1480

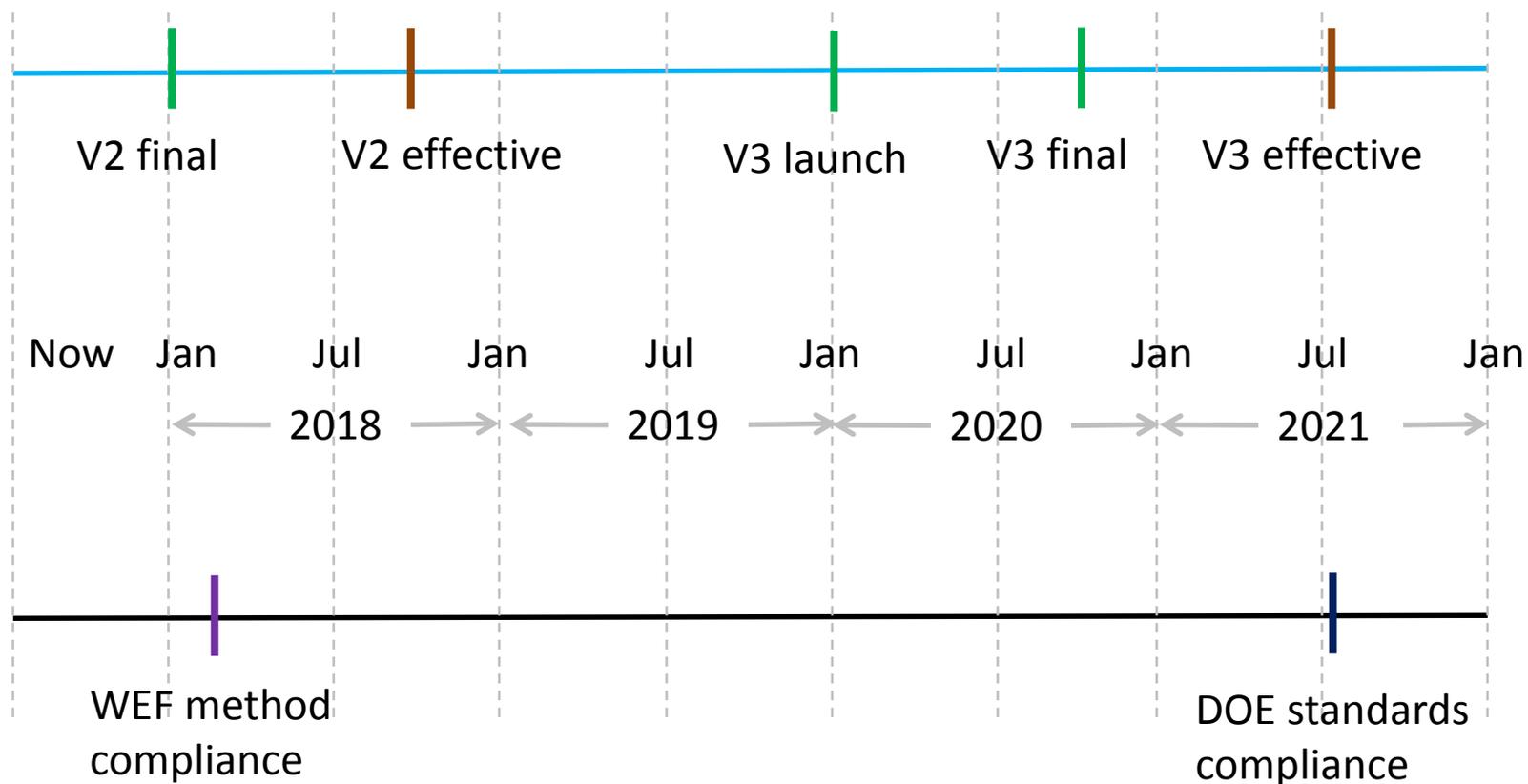
Dan Baldewicz, ICF

Dan.Baldewicz@icf.com

518-452-6426



EPA vs. DOE Timelines (wait to develop V3)





EPA vs. DOE Timelines (V3 finalized now)

