



## Joint Stakeholder Recommendations for Standards for Dedicated-Purpose Pool Pump Motors

July 24, 2018



## Outline

- Introduction to pools in the U.S. and pool pumps and motors
- Pool pump energy use and benefits of variable-speed technology
- 2017 Direct Final Rule (DFR) and replacement motor loophole
- What would happen if we don't close the loophole
- What's happened since the DFR publication
- Recommendations for standards
- Next steps

# Pools in the U.S.

>5 million in-ground pools



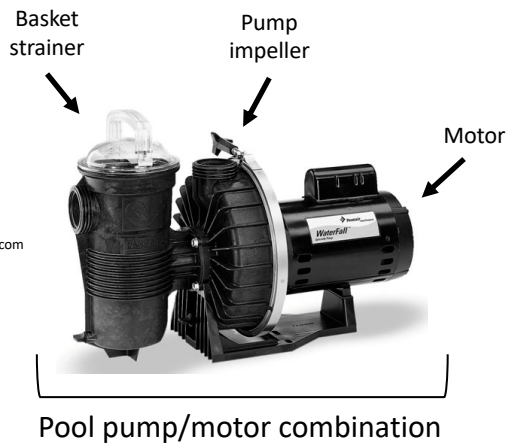
Source: SwimmingPool.com

>3 million above-ground pools

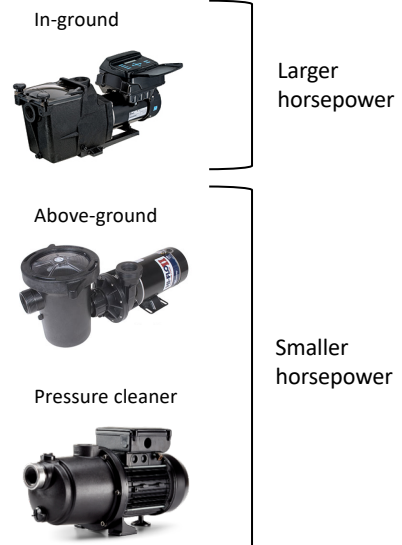


Source: royalswimmingpools.com

# Pool pumps and motors



Source: poolexpress.com



Sources: Hayward, Waterway, Pentair

## Pool pump energy use and benefits of variable-speed technology

- Typical pool pumps can use as much as **6,000 kWh/year**
  - **\$780** in electricity costs (at \$0.13/kWh)
- Variable-speed motors can provide very large energy savings as well as other benefits

Filtration =  
**low speed**  
pumping



Cleaning/mixing =  
**high speed**  
pumping



Source: Hayward

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## Current market for variable-speed technology

- For in-ground pools, about 30% of pool pumps sold today have variable-speed motors
- Market barriers prevent variable-speed motors from gaining greater market share
  - Lack of understanding of variable-speed technology
  - Lack of information for consumers
  - “Panic purchases”
  - Variable-speed motors a premium product today
  - Lack of knowledge on the part of installers

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## 2017 DFR for pool pumps

- In 2017, DOE published a DFR for dedicated-purpose pool pumps
- For most in-ground pools, the standards reflect variable-speed technology
  - ~70% energy savings → ~\$500-\$600 in annual operating cost savings
  - Simple payback of <1 year
  - \$2,140 in LCC savings (including replacement motor costs)

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## Replacement motor loophole

- The 2017 DFR did not address replacement motors, creating a loophole



Source: Hayward

Regulated pump/motor combinations

vs.



Source: Regal Beloit

Unregulated replacement motors

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## What would happen if we don't close this loophole?

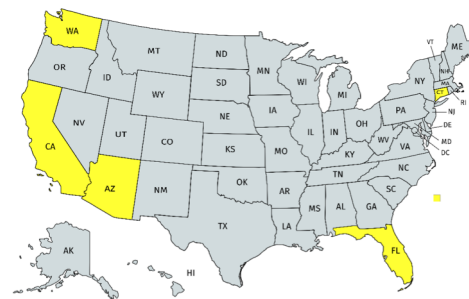
- If we don't close the loophole, there will be a disruption in the market between regulated pumps and unregulated replacement motors
  - Negative impacts for manufacturers
    - Lower sales of regulated pumps would undercut manufacturer investments and put American manufacturing jobs at risk
  - Negative impacts for consumers
    - Consumers may get stuck with inefficient, wasteful products that increase their electric bills and don't provide the same features and functionality



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## No DOE action = patchwork of state standards

- We currently have a patchwork of state standards for pool pumps
- If the replacement motor loophole is not addressed by DOE, states will take action
- A single national standard is much preferred
  - Reduces burdens on manufacturers
  - Ensures that all consumers benefit, regardless of where they live



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## Since the DFR was published . . .

- January 18, 2017: Publication of DFR
- May 2017: APSP reached out to DOE to raise concern about the replacement motor loophole, and multiple stakeholders commented to DOE on the DFR supporting a complementary motor standard
- May 26, 2017: Publication of confirmation of effective date and compliance date
  - “DOE plans to hold a public meeting in the near future with the interested parties to gather data and information that could lead to the consideration of energy conservation standards for replacement pool pump motors”
- August 10, 2017: DOE public meeting
- December 2017-June 2018: Negotiations between pool pump and motor manufacturers and energy efficiency advocates

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## Recommendations for pool pump motor standards

- Standards
  - Align pool pump motor standards with the pool pump standards
  - Require larger motors to provide the choice of a variety of speeds
  - For smaller motors, align the motor types with those in the pool pumps rule
- Labeling
  - Include similar labeling requirements as the pool pumps rule to avoid confusion in the market
- Compliance date
  - Align compliance date with the pool pumps compliance date (July 19, 2021) to avoid manufacturers having to convert product lines twice, reducing their cost

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DOE can implement our recommendations with a DFR using its authority over “electric motors”

- A DFR ensures alignment of the compliance date for pool pump motors with the pool pumps compliance date
- Pool pump motors are electric motors, and electric motors are already covered equipment

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There are no costs associated with our recommendations

- Costs are already accounted for in the pool pumps rulemaking
- Our proposal would not be subject to Executive Orders 12866 and 13771

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## Next steps

- We plan to submit a formal petition for rulemaking within the next couple of weeks
- Due to the impending July 2021 pool pumps compliance date, we encourage DOE to act quickly on the petition to ensure alignment of the compliance date for pool pump motor standards with the compliance date for the pool pump standards

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## Takeaways – Why we need to close the loophole

- If loophole remains it will hurt US jobs
- Consumers will be stuck with inefficient, imported motors
- Consumer electric bills will increase by hundreds of dollars each year

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