

**U.S. DOE PUMP EFFICIENCY  
REGULATION UPDATE:**

Informing Congress &  
Industry Stakeholders



**Purpose:** This Hydraulic Institute (HI) position paper is meant to inform pump industry stakeholders, including HI members and non-members, as well as U.S. Congress members, about **the pending U.S. Department of Energy (DOE) rulemaking regarding industrial and commercial centrifugal pumps.**

The ongoing rulemaking process is designed to establish **higher pump efficiency levels and test procedures in the context of energy conservation regulations.**

This is the first time that the federal government has addressed pump performance via an efficiency regulation. Other energy using products – air conditioners, water heaters, etc. – have already, or are undergoing, a similar rule-making process with the DOE in making their products more energy efficient. The European Union is also regulating energy efficiency for pumps.

*Note: DOE authority for establishing energy conservation regulations was granted by Congress in 1975 as part of the Energy Policy Conservation Act (EPCA).*

### HI Engagement with the DOE Rulemaking Process

As the representative of the U.S. pump industry, HI has been engaged in discussions with the DOE since the very start of the rulemaking process. Upon notification in 2011 of the upcoming rulemaking process for pumps, HI established a working group composed of key members to engage with DOE’s Appliance Standards Advisory Committee (ASRAC). This 19 member group has met seven times to date over a period of 7 months (as of April 2015) and reached a consensus on the scope of the rulemaking and the proposed energy conservation measures.

### DOE Comments on Working with HI

DOE has commented that HI members’ participation in the rulemaking process was very positive – “beyond anything we’ve ever seen” and reflects positively on HI’s representation. DOE staff noted that **HI’s engagement could be used as a model for future rulemakings.**

### Term Sheet Recommendations

The resulting Term Sheet consensus summary document with notes (approved by the ASRAC working group 15 yes – 1 no) can be referenced at HI’s website – [www.Pumps.org/DOERulemaking](http://www.Pumps.org/DOERulemaking). The Term Sheet, which is very technical in nature, lists 14 recommendations and shows how the working group members voted on the following major subject areas:

- Types of pumps covered by the rulemaking
- Types of pumps explicitly excluded
- Scope refinements (specific pump characteristics)
- Pumps used only for pumping clean water
- Pump speeds
- Pump test procedures & ratings
- Labeling requirements
- Data to be included in certification report/database

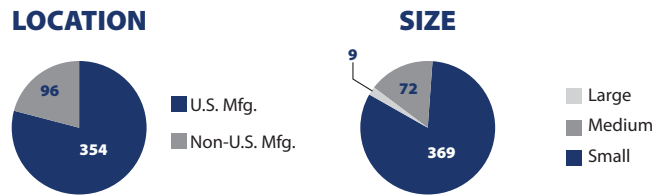
To view the Term Sheet in its entirety, see [www.pumps.org/termsheet](http://www.pumps.org/termsheet)

### Current Standing in the Process

In March/April of 2015, DOE published two Notices of Proposed Rulemaking (NOPRs) on test procedures and energy conservation standards in the Federal Register and established a review period for comments to the 108 requests for comment from the DOE plus general review comments on the NOPRs. HI members participated in a public hearing and will formally respond in writing.

### Pump manufacturers serving the U.S. market

There are an estimated 450 pump manufacturers serving the U.S. market



*Source: Supplier Relations US, LLC; Eisevier; OneStone Reports; HI Market Intelligence Committee estimates.*

## HI Current Concerns

While the NOPRs do not address an “increasing level of efficiency compliance” over a period of time, HI understands that this rulemaking is the first step in a continuing “escalation of efficiency” going forward. These incremental changes, which are intended to create more energy efficient pumps, should create benefits for the pump industry as well as the end-user.

However, HI members have concerns over requirements in the NOPRs that were not discussed in the working group sessions or included in the Term Sheet recommendations. Additionally, there is important information excluded from the NOPR which would allow pump manufacturers complete knowledge of how to best comply with the regulations. These new requirements and exclusions are issues which would financially impact its members:

- **Requirement for “conditioned power” in pump test labs.** “Conditioned power” involves an entirely new infrastructure in the lab requiring consultants, engineering firms, equipment acquisitions and power company consultations, not to mention the down-time involved to implement and perfect these changes, which in HI’s view would be extremely costly and would dramatically affect manufacturers’ bottom line. Complying with this requirement would not improve performance characteristics or energy but would require pump manufacturers to **invest in new equipment and instrumentation.**
- **The DOE is requiring data collection in test labs to be timed in 5 second increments,** which is not standard industry practice and not possible with manual data acquisition methods. This requirement would eliminate the option for manufacturers to use manual data acquisition methods. Pump manufacturers would be required to have an automated data acquisition system, incurring an additional and unnecessary burden and expense.
- **Prohibited representation (42 U.S.C. 6314(d)).** HI recommends that DOE explicitly state that only PER and PEI representation fall under the requirements of 42 U.S.C 6314(d). HI is concerned that the specification of 42 U.S.C 6314(d) Prohibited representation is general and does not specifically state that it only applies to PEI and PER representations.

*Specifically, 42 U.S.C. 6314(d) provides that “no manufacturer may make any representation...respecting the energy consumption of such equipment or cost of energy consumed by such equipment, unless such equipment has been tested in accordance with such test procedure and such representation fairly discloses the results of such testing.”*

It is imperative that pump manufacturers can continue to use pre-existing efficiency curves and sizing software that is used directly by end users and distributors to purchase pumps. The burden to recreate this data and sizing tools based on the new test procedure in 180 days is unmeasurable and cannot be done.

- **HI recommends the development of a quick compliance calculator to accurately deliver the DOE’s pump efficiency regulation expectations,** HI feels it is critical that the DOE release a PEI (Pump Efficiency Index) calculation tool that will assure manufacturers of compliance if they use that tool. HI believes the lack of a PEI calculation tool is a significant burden to the industry and will lead to calculation errors and ultimate non-compliance. The release of a calculation tool is even more important for small and medium- sized companies that may not have the resources to develop such an analytic tool on their own.
- **Test Lab Cost Burden.** The DOE estimated that the cost to manufacturers would be between \$91 and \$277K. However, HI believes these costs are greatly underestimated and should be re-evaluated.

It is important that pumps are not the only technology regulated, as other unregulated technologies for home heating, etc. could be advantaged resulting in pump manufacturers losing business [as end-users seek alternative technologies due to the lower costs].

## Impact on the U.S. Pump Industry

**Pumps use a lot of energy so improving their energy efficiency is an important objective and one that the U.S. pump industry supports.** As the leading association representing the pump industry, HI supports energy conservation and demand reduction.

Because it is expected that **the current DOE rulemaking process will have a significant impact on the industry**, HI has developed this position paper in order to explain the intent of the pump efficiency regulations and to set forth the pump industry's positions with regard to achieving DOE's objectives while serving and protecting the interests of all pump industry manufacturers, whether or not they are members of the Hydraulic Institute.

HI is committed to working with the DOE to discuss and resolve these concerns in a cooperative manner so as to benefit its members as well as the pump industry as a whole in supporting the important goal of energy efficiency rulemaking.

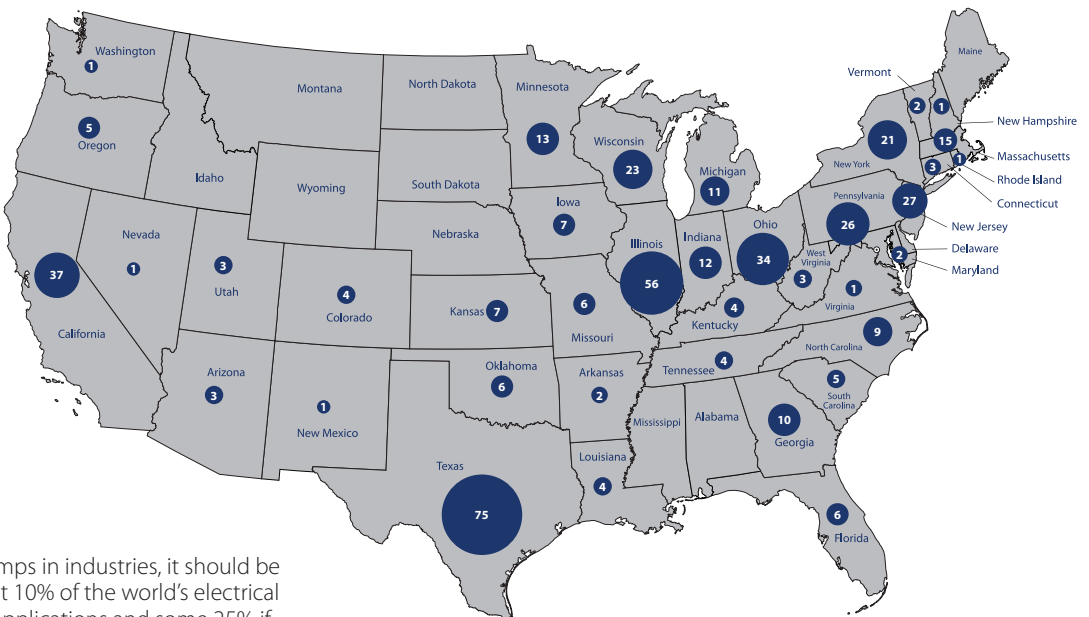
## Distribution of U.S. Pump & Pumping Equipment Manufacturers

### The U.S. Pump Industry

The U.S. pump industry is estimated to include **450+ manufacturers of various sizes operating in 38 states**. U.S. pump sales are estimated at over **\$6 billion** annually and involve motorized pumps used in these industries:

- Wastewater
- Petroleum Refineries
- Oil & Gas Production
- Building Services
- Power Generation
- Chemicals

In discussing the role of pumps in industries, it should be noted that pumps represent 10% of the world's electrical energy demand for motor applications and some 25% if the energy use in certain industrial plant operations.



### Hydraulic Institute Overview

Established in 1917, the Hydraulic Institute represents the pump manufacturing industry in North America. It is the recognized authority on pumps and pumping systems. The Institute represents 108 member organizations consisting of pump manufacturers and their suppliers as well as non-member organizations.

HI's mission is to be a value-adding resource for member companies, engineering consulting firms, and pump users by developing and delivering comprehensive industry standards, expanding knowledge by providing education tools for effective pump testing, installation, operation, maintenance and performance operation of pumps and pumping systems. HI, represents over 70% of the U.S. pump market, also serves as a forum for the exchange of industry information.