

**Pacific Gas and Electric Company  
Codes and Standards Program**

**Comments on  
Preemption Exemption Petition  
Docket Number EE-RM-PET-100  
United States Department of Energy**

**Prepared for:**

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**Introduction**

Pacific Gas and Electric Company (PG&E) is pleased to have this opportunity to provide input on the Preemption Exemption Petition (Petition) filed in late 2005 by the California Energy Commission. Pacific Gas and Electric Company, incorporated in California in 1905, is one of the largest combination natural gas and electric utilities in the United States. Based in San Francisco, the company has approximately 20,000 employees who carry out Pacific Gas and Electric Company's primary business—the transmission and delivery of energy. The company provides natural gas and electric service to approximately 5.0 million electric and 4.1 million natural gas customer accounts throughout a 70,000-square-mile service area in northern and central California. Our comments hereunder are funded by California Public Utility Commission-approved public purpose funds and are presented in the best interests of the approximately 15 million people PG&E provides with natural gas and electric service -- one in every twenty Americans.

The regulations that are the subject of the Petition, residential washer water efficiency standards adopted in 2003 by the California Energy Commission (Commission), are estimated to provide California customers with annual savings over 500 GWh, 50 million therms, and 66 billion gallons of water by 2025. PG&E advocated strongly for the Commission’s adoption of the residential washer standards in 2003. PG&E strongly encourages the U.S. Department of Energy (DOE) to approve the Petition and grant California the waiver from preemption. We provide more detailed discussions in support of the Petition in the following pages.

**General Comments**

The federal Register, Vol. 71, No. 24 (dated February 6, 2006) listed 18 specific

questions for which the DOE was interested in receiving comments. We respond to a number of these, while leaving other water industry stakeholders to respond in detail to the water policy-focused questions. Generally, however, PG&E concurs with the Commission's assessment that California's water interests represent an "unusual and compelling" situation compared to the Nation as a whole and to other states. Petition opponents may identify other localities that are experiencing one or more of the same challenges faced in California. The totality of the challenges for both water and energy supply, the environmental impacts, the connection of these factors with the California economy, and in fact, the sheer size of the California population ensure that the California situation can only reasonably be described as unique and compelling. Recently increased concerns (subsequent to the development of the Petition), such as the deteriorating condition of California's water delivery system (i.e., inadequate levees), add more urgency to the California situation.

The energy and water policy planning documents published by California agencies and referenced in the Petition clearly demonstrate that the adopted residential washer standard is an appropriate, consistent, and well-conceived tool for helping California attend to its needs. That the standards are one of several policy, program and supply options being deployed in California cannot be construed by the DOE as evidence that granting the Petition is unnecessary. All cost-effective tools are desperately needed to meet the manifold water and energy challenges. Ironically, many of the future alternative water supply options (desalination, recycling, etc..) are energy intensive and will serve to compound the State's energy woes if they are deployed over other conservation options. Efficiency is first on the "loading order" of solutions. Resources that are now being less efficiently spent on residential washer efficiency programs (relative to the cost efficiency of the preempted California standards) must be freed up to allow the State to develop new voluntary efficiency programs for different appliances and products for which regulation is not a viable strategy.

## **Specific Comments in Response to DOE Questions**

### **Market-Induced Improvements**

*Are there estimates of market-induced improvements in efficiency of all products subject to the California regulation?*

We note that the Petition provides a reasonable estimate of "natural" market induced improvements in efficiency of residential washers. PG&E shares similar expectations for reductions in shipment-weighted water factors over time between the implementation of the standard and 2040 (upper line in Figure 4 of the Petition). We note, however, that in our opinion, such market-induced changes are not truly "natural". In our opinion, such ongoing improvement would require ongoing incentive programs. Thus, these estimates reflect a presumption of ongoing investment of millions and millions of dollars by California IOUs and water agencies (ultimately funded by California rate payers) through voluntary rebate and education programs. Were such investments to cease, we believe

that the residual, “natural” market-induced efficiency gains would be well under the 1.5% per year assumption, if not flat. Thus, if anything, we believe the Commission’s portrayal of natural-market induced efficiency gains is optimistic.

Furthermore, DOE should not forget that recent improvements in baseline energy and water use beyond minimum federal requirements can in large part be attributed to sustained, annual, multi-million dollar expenditures by utilities and water agencies in California and around the country, the very parties now supporting the Petition. DOE should not take these investments for granted in future years.

### **Accuracy of Analysis of Savings**

*Is the analysis used in the California Petition accurate? For example, are the State’s savings estimates correct? How valid are the State’s assumptions?*

PG&E provided substantial analysis to the Commission’s proceeding in support of the residential washer standards. It may come as no surprise, therefore, that PG&E asserts that the savings estimates that the Commission articulates in the Petition are valid and reasonable. We note a substantial conservatism, however, in the analysis that the DOE should consider. Presumed shipment-weighted water factor baselines of 10.5 gallons per cubic foot were based on testimony of AHAM and manufacturers in the CEC proceeding. Whereas the Commission calculated water savings based on the difference between this baseline and the standards levels (e.g., water factors of 8.5 and 6.0), PG&E more realistically applied shipment-weighted average water factors below the standards levels in recognition of the large proportion of washers selling in California that already well exceed these standards levels. More specifically, PG&E estimated post-standard shipment-weighted average efficiencies of 8.10 and 5.75 gallons per cubic foot. For tier 2 (6.0 WF) of the standard that difference in approach leads to underestimating per unit savings of 220 gallons per washer per year. Whether PG&E’s estimates of 8.10 and 5.75 WF are low enough is uncertain. What is certain is that the Commission’s estimate understates the actual per unit savings (presuming that manufacturers comply with the standard and that AHAM’s baseline forecast is accurate).

Two significant factors were not captured in the estimates of statewide savings in tables 4 and 6 of the Petition. These savings estimates were presented in terms of technical potential—a freeze frame view of relative efficiencies. To investigate in more detail what savings would accrue over time under realistic standards versus non-standards scenarios—a subject that DOE is broaching in its previous question—we concur that one should assess natural market-driven changes to shipment-weighted average efficiency in calculating annual savings rates of each successive year’s cohort of new washers. As noted in the previous section, PG&E does not dispute the Petition’s estimate of 1.5% or less per year of “market-induced” improvement in water factor. Thus, by the time the full stock of washers had been replaced with tier 2 standard compliant washers, the difference in water use between a new washer in the absence of the standard and one under the standards scenario would have decreased relative to the early years (water factor under the standards scenario decreases at a slower rate of 0.7% per year). This

slow convergence in efficiencies would result in a 32% reduction in per units savings for new products sold in 2025 compared to base year 2010. This reduction over time in first-year annual savings is, however, overcome by the second factor.

The expected population growth in California is discussed in the Petition, but is not factored into the savings estimates. Population estimates from the US Census Bureau show a 36 percent increase in population by 2025. This growth suggests a commensurate increase in clothes washers. Thus, the population increase would lead to aggregate annual “first year” water savings for each successive year’s cohort of new washers that grow slightly over time despite significant forecasted relative per unit savings decreases. In conclusion, PG&E believes the Commission has reasonably estimated the saving impacts due to the standard, though they are likely understated on an aggregate, statewide basis by five to ten percent.

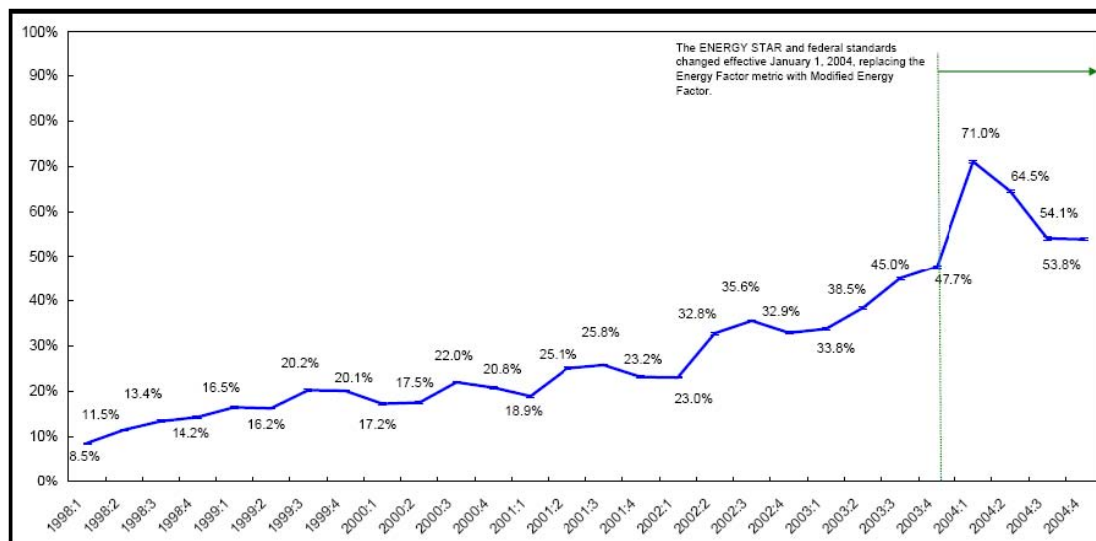
### **National Impacts on Industry**

*What impacts would the State standards have on manufacturing, marketing, distribution, sale, or servicing of covered products on a national basis? (42 U.S.C. 6297(d)(3))*

As was asserted in the Petition, the implications for manufacturing, marketing, distribution, sale and servicing of covered products on a national basis is clear: minimal impact. The market share for Energy Star clothes washers in California in 2004 averaged 62.7% (Figure 1 below). Lacking more updated information, we use the same ratios as were used in the Petition to determine what proportion of Energy Star washers qualified at the 8.5 and 6.0 water factors. We estimate that up to one-half of all washer sales in California in 2004 qualified at the 8.5 water factor level and as much as one-third qualified at the 6.0 level. Nationally, industry is clearly geared up for the sale of compliant products. If already half and one-third of the California sales comply for the 8.5 and 6.0 water factor tier, respectively, then as explained in the Petition, “converting” the rest of California sales represents a change in the washer performance levels in only five percent of national shipments.

We don’t see how industry can argue that such an impact is a significant problem for industry. We note for example that national market share for Energy Star washers moved from 20 to 27 percent between the first and fourth quarters of 2003 alone! That change in national market share is larger than the impact that this California standard could have on the national market and there was no advanced warning. Unlike natural market volatility, in the case of standards there will have been several year’s notice to allow orderly planning and accommodation by industry.

### **Figure 1. Clothes Washer Sales, Percent of ENERGY STAR Qualified Units**



Source: Itron, Inc., December 2005. "California Residential Efficiency Market Share Tracking: Appliances 2004"

The previous paragraph addresses the impact nationally of changes in the types of washers that must be manufactured and sold in California as result of the standard but not concerns about slackened demand. The Commission has already made a convincing case using DOE research on consumer elasticity that substantive reductions in total unit sales in California are unlikely. As the Commission noted, in the unlikely event that sales dropped, say 10 percent, this only represents a one percent reduction in national shipments and is within the noise of annual shipment variability. For those vendors in California that would face the hypothetical 10 percent drop in sales, the implications for increased per unit revenues (20% +) cannot be overlooked and would mitigate volume reductions.

Virtually all affected businesses have products qualifying at the 8.5 water factor level, including small and large manufacturers, distributors, and retailers alike. Years ahead of schedule many also have 6.0 water factor washers. We are, therefore, unaware of any national market actor who would necessarily be hurt by this standard. The market for inefficient washers will remain robust in the other 49 states and overseas. One set of industry players in California will almost certainly benefit: route operators and coin laundry stores. These stakeholders have been disadvantaged by the fact that California has water efficiency standards only for commercial (residential-sized) washers. The commercial washer standard may have shifted a fraction of customers on the margin from coin laundry toward in-home residential washers as a result of the increased relative cost of commercial versus residential washers. To the extent that that has happened, one can expect the increased purchase price for compliant residential washers under the California residential standard to shift a fraction of customers on the margin back toward coin laundry. This shift back to coin laundry would benefit the coin laundry industry materially.

PG&E believes that any industry stakeholder not already shifting their business strategy

to address the high efficiency washer market share is going to have trouble remaining competitive in the California market, regardless of whether a California standard is implemented. Thus, the incremental industry competitiveness impacts attributable to the California standards would be very limited.

### **Impacts and Distribution Costs**

*What impact will the California clothes washer standard have on manufacturing or distribution costs of manufacturers, distributors and others? (42 U.S.C. 6297(d)(3)(A))*

The cost implications of the adopted standards will be acceptable. Modestly featured washers that meet the new standard will become the new “commodity product” with commensurate cost reductions relative to today’s Energy Star washers. To be sure, we concur with the Commission that manufacturing costs and therefore wholesale and retail prices can be expected to increase ~20 percent as a result of the standard. We further concur that these increased costs are cost-effective as estimated.

Manufacturer claims that incremental costs should be forecasted on the basis of previous average costs for high-end washers (e.g., \$400-500 incremental costs) are misguided. Generally, one would expect a price conscious consumer to pay for the lowest cost washer that meets his or her minimum requirements. Consumers that pay more are by definition purchasing non-energy/water benefits. Such additional benefits need not be bundled in with a washer designed to just meet the California standards. Thus, as a result of the standard in California, manufacturers that are concerned with staying competitive with price conscious consumers will expand their offering of lower price, high-efficiency washers that meet the standard with a more modest feature package.

### **Disadvantages on Smaller Industry Actors**

*Will the California clothes washer standard disadvantage smaller manufacturers, distributors, or dealers or lessen competition in California? (42 U.S.C. 6297(d)(3)(B))*

We agree with the Petition that numerous manufacturers, many with products that qualify even at the 6.0 water factor level have come into the market in the last decade. So as the federal washer efficiency standards have been instituted and voluntary programs such as Energy Star® have increased the rigor of their requirements, competition--especially from manufacturers newly entering the market--has increased dramatically. In 2003, there were three manufacturers with products that have water factors less than 5.5. That number increased to nine in 2004 and thirteen (fifteen brands) by the end of 2005. We are not aware of any situations where smaller market actors will necessarily be disadvantaged from the California standard.

### **Burdens of Redesign**

*To what extent would the California standard cause a burden to manufacturers to*

*redesign their residential clothes washers? (42 U.S.C. 6297(d)(3)(C))*

Given that up to one-third of washers sold in California in 2004 qualified at the 6.0 water factor level and that most major manufacturers have qualifying products well ahead of the standards effective date, it is hard to see how the California standard will create a substantive, incremental design burden on manufacturers. Much of the major redesign work has been completed or initiated in response to the federal energy efficiency standards effective on January 1, 2007 and the various voluntary programs. Given the time between 2004 and the likely effective date of the second tier of the California standard, more than a complete design/amortization period will have elapsed. This allows manufactures to integrate design work associated with standards into their typical product redesign cycles, thereby minimizing costs attributable to the California standard. Thus, the incremental design burden costs will be minimal and recoverable.

### **Product Availability**

*Would the California standard result in a reduction in product availability? (42 U.S.C. 6297(d)(3)(C)(i))*

The Petition has convincingly addressed this matter on pages 38 through 40. Considering that one-third to one-half of California sales already qualify at the first standard tier as well as the growth in the variety and number of qualifying models in just the last several years as the federal standards took effect and voluntary programs increased in stringency, it is difficult to argue that product availability is going to be a concern in California. Clearly, the total number of distinct washer models for sale in California will be smaller than in the nation as a whole, but that does not equate to availability problems. As a point of reference, the numbers of active Energy Star®-rated models meeting 8.5 and 6.0 water factor requirements are currently 195 (170 if excluding discontinued products) and 122 (113 if excluding discontinued products), respectively. Again, it is clear from the analysis in a previous section that industry will have no trouble meeting demand in California because it represents a small shift (~five percent or less) in national manufacturing volume.

### **Sales Volume Impacts**

*Would the California standard result in a reduction in sales volume of clothes washers either in California or in the United States as a whole? (42U.S.C. 6297(d)(3)(C)(ii))*

As has been described in the Petition and earlier in these comments, the California standard cannot have a discernable impact on national sales. In a drastic, hypothetical case where the California standards slow demand in California by 10 percent, this represents only a drop by one percent in national shipments. Such a small percentage drop would be well within the year-to-year variations in washer sales, nationally. As noted in an earlier section, DOE's own market research shows that demand for residential washers is fairly inelastic with respect to price within the incremental price range that can reasonably be expected as a result of the standard. Small percentages of customers that



may otherwise have purchased a new washer may repair rather than replace their existing washer in response to higher first costs, but this effect would be limited in scope and duration. In previous sections, we have noted that while sales volume could drop slightly in the first years of each tier implementation, the ~20 percent higher cost estimated by the Commission would result in net increased revenues for market actors that greatly exceed any reasonably forecasted sales volume decreases. DOE's analysis for the federal standard that assumed migration to horizontal-axis washers suggested that industry may actually increase profit on a per unit basis.

### **Proliferation of State Standards**

*To what extent is the California regulation likely to contribute significantly to a proliferation of State appliance efficiency requirements? What cumulative impact would such requirements have? (42 U.S.C. 6297(d)(3)(D))*

PG&E is aware of no other states or local jurisdictions that have or are developing a residential clothes washer water efficiency standard. Since no standard similar to the adopted California standard may be implemented without a waiver from the DOE, DOE would control this proliferation in the event that other states came forward. Were other jurisdictions to develop, adopt and seek a waiver for such a standard, PG&E believes the cumulative impact would be negligible. It seems highly unlikely that such standard would be different than the California standard. There would be several years to plan for production and sales in such jurisdictions, and the additional market share represented by most other jurisdictions would be modest relative to California. Additionally, we concur with the Commission that the economies of scale from such an eventuality may in fact benefit industry.

### **Availability of Product Characteristics**

*Would the California regulation impact the availability in the State of any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the State? (42 U.S.C. 6297(d)(4))*

PG&E believes that the Commission's Petition has convincingly addressed this question. PG&E is not aware of any limitations in features, sizes, capacities or volumes that would result even after implementation of the 6.0 water factor standard. It is not clear to PG&E whether the vertical-axis attribute will be commonly available in California after the implementation of the 6.0 water factor tier. PG&E does not believe this attribute rises to the level of "product type" or "performance characteristic". In DOE's own research, the axis orientation attribute was only recognized as a distinct characteristic by 2 out of 429 respondents. Furthermore, we would expect that it was the horizontal-axis attribute that was being recognized in those two cases rather than the vertical-axis attribute, which to our knowledge provides no distinct performance characteristics whatsoever.

### **Availability of Product Characteristics (2)**

*Would the California standard affect the availability of classes of clothes washers or clothes washer performance characteristics, reliability, features, sizes, capacities and volumes that are generally available in California? (42 U.S.C. 6297(d)(4))*

Our response to this question is the same as the response to the previous, similar question.