DOCKETED

Docket Number:	17-AAER-01
Project Title:	Appliance Efficiency Pre-Rulemaking for Commercial Tumble Dryers and Air Filter Labeling
TN #:	222702
Document Title:	AHAM, CLA,TCATA, CH&LA, and CMTA Joint Comments
Description:	N/A
Filer:	System
Organization:	AHAM, CLA,TCATA, CH&LA, and CMTA/Kevin Messner
Submitter Role:	Public
Submission Date:	2/23/2018 1:27:48 PM
Docketed Date:	2/23/2018

Comment Received From: Kevin Messner
Submitted On: 2/23/2018
Docket Number: 17-AAER-01

AHAM, CLA,TCATA, CH&LA, and CMTA Joint Comments

The Association of Home Appliance Manufacturers (AHAM), Coin Laundry Association (CLA), Textile Care Allied Trades Association (TCATA), California Hotel & Lodging Association (CH&LA), and California Manufacturing & Technology Association (CMTA) submit these joint comments on the Pre-Rulemaking for Commercial Tumble Dryers (Docket 17-AAER-01). We have concerns with the California Energy Commission (CEC) effort to test, certify and require markings for commercial clothes dryers.

Additional submitted attachment is included below.

February 23, 2018

Via E-mail

California Energy Commission
Docket Unit, MS-4
1516 Ninth Street
Sacramento, CA 95814-5512

docket@energy.ca.gov

Re: Docket No. 17-AAER-01 for Commercial Tumble Dryers

Dear Commissioner McAllister:

The Association of Home Appliance Manufacturers (AHAM), Coin Laundry Association (CLA), Textile Care Allied Trades Association (TCATA), California Hotel & Lodging Association (CH&LA), and California Manufacturing & Technology Association (CMTA) would like to comment on the *Pre-Rulemaking for Commercial Tumble Dryers* (Docket 17-AAER-01). We have concerns with the California Energy Commission (CEC) effort to test, certify and require markings for commercial clothes dryers.

AHAM represents manufacturers of major, portable and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members employ tens of thousands of people and produce more than 95% of the household appliances shipped for sale. The factory shipment value of these products is more than $30 billion annually. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs. Specific to this pre-rulemaking proposal, AHAM represents commercial clothes dryers that are manufactured on a similar platform as residential clothes dryers and are used in generally by the occupants of more than one household, such as multi-family housing common areas and coin laundries.

CLA represents the owner-operators of self-service laundries across the United States as well as wholesale distributors and manufacturers of commercial laundry equipment. CLA's mission is to advance the self-service laundry industry by providing store operators with the industry research, connectivity, education and other resources required to be more successful business owners. These efforts enable the industry to professionally and efficiently provide the essential service of clean laundry to the millions of families relying upon neighborhood laundromats each week.

The Textile Care Allied Trades Association is an international trade association representing manufacturers and distributors of dry-cleaning and laundry equipment and supplies. It is the only trade

association dedicated exclusively to the interests of the allied trades. TCATA represents virtually every major manufacturer of commercial laundry equipment.

The California Hotel & Lodging Association is the indispensable resource for communicating and protecting the rights and interests of the California lodging industry, for providing educational training and cost-saving programs for all segments of the industry, and for supporting strategic alliances to promote the value of California tourism and travel.

The California Manufacturers & Technology Association works to improve and enhance a strong business climate for California's 30,000 manufacturing, processing and technology based companies. Since 1918, CMTA has worked with state government to develop balanced laws, effective regulations and sound public policies to stimulate economic growth and create new jobs while safeguarding the state's environmental resources. CMTA represents 400 businesses from the entire manufacturing community -- an economic sector that generates more than $230 billion every year and employs more than 1.2 million Californians.

On January 24, 2018, CEC held a workshop where the California Investor-Owned Utilities (IOUs) consultant presented technical information, supposedly in response to comments received. We are appreciative that after several months the consultants finally agree that increasing efficiencies of dryers generally leads to longer cycle times. However, we would like to note that this presentation did not address most of the other critical concerns that have been raised throughout the process. As such, we would like provide the following comments in relation to the overall process and the latest information provided at the workshop on January 24.

I. Scope, Premise and Claims of Proposed Test Procedure

The CEC staff presentation from the August 3, 2017, workshop states the scope of this test procedure is to provide consumers (in this case, operators) with information to aid decisions when purchasing new equipment. Further, survey data references in the T20 Commercial Dryer Test Protocol (IOUs CASE analysis) states that operators cited high utility cost as their primary cost. This is, however, understandable because the product the operator is selling is essentially heat, and as such, energy cost obviously will be one of the larger expenses. Moreover, the IOUs CASE analysis does not provide any information that shows operators do not have access to the energy use of a product or that they do not currently consider the energy costs of a potentially new product as part of their decision-making process.

If high utility costs were their primary costs, it would seem logical that the operators are considering this factor in their current purchasing decisions. In fact, laundromat and hotel owners do consider energy costs when making decisions to equip or re-equip their laundromats. CLA's annual survey indicates that rising utility rates constitute the biggest problem facing laundromat owners. As such, any decision to reinvest the capital required to purchase new equipment versus repair the current equipment is a complicated one with energy savings serving as one of many factors to be considered by the operators.

In addition, there has been no cost-benefit analysis done to justify the additional costs that the operators would likely incur, or what they would be willing to pay, if anything, for products that would need to comply with new regulations, especially for a California specific test procedure and marking. AHAM represents the single-load dryer manufacturers and these dryers are similar to residential dryers, which are currently regulated for energy efficiency by the US Department of Energy (DOE). However, the IOUs studies continue to resist performing any cost analysis for any theoretical technology that could improve efficiencies and how much energy would actually be saved.

Furthermore, the scope of the latest version of the test procedure developed by the IOU's consultant is very broad and incorrectly assumes that a single test procedure can be created and applied to all types of

commercial dryers such as single-load, multi-load and on premise laundry (OPL) with capacity under 210 lbs. Each one of these products have differing uses and designs. The number of unique stock keeping units (SKU's) in this segment is staggering due to different customer needs. As an example, there are commercial dryers in the market that are within the scope of the IOUs test procedure (<210 lbs.) that have multiple voltage configurations to accommodate different installation, which can impact efficiency. There are dryers with very specific cycle definitions as they can accommodate drying of clothes washed with fluids other than water that are also within the scope of the IOUs consultant's test procedure. AHAM does not believe this test procedure can be and should be applied to all configurations of commercial dryers that are within the broad scope of the proposed test procedure.

II. Energy Savings Overstated & Increased Cycle Times, Cost of Technologies

In earlier comments, AHAM noted that based on an AHAM analysis, cycle times increase as energy efficiency increases because it is energy over time. The IOUs consultant agreed with this (contrary to their previous position); however, they proceeded to present efficiency gains versus program time using the IOUs test method and showed a dot-chart that claims efficiency gains with certain technologies with reduced impact on cycle time. This is a dubious argument and is not a valid argument for the following reasons:

- The chart does not show the cost-benefit analyses of each of the lines that shows efficiency gains versus program time, which would give some understanding into the economic feasibility. The cost benefit analyses needs to include cost of technology, service, and maintenance, as well as opportunity cost such as revenue loss from longer cycle time (for operators) or increase in cost of drying for consumers. Put simply, cost of each of the technology options must be weighed against actual energy savings as well as cost of operation and cost to consumers and the data for each option needs to be transparent.
- AHAM has already provided comments noting significant drawbacks with the "number of energy saving technologies" presented in slide 3. These concerns are not addressed anywhere. Also, the CASE defined cost-benefit factors stated in the IOUs CASE analyses for "efficient dryer technology" is overly simplistic and optimistic. It is based on a single aspect when there can be many reasons (including feature differences) for cost difference. Section 6 describes "available" technologies for dryer efficiency. Distinction should be made between available, commercially viable, and desirable technologies. Just because a technology is available, does not necessarily mean it is commercially viable or even desirable for consumers. Below are some specific examples.

    - A heat exchanger is a niche technology and may not be commercially viable or feasible. According to the NEAA study that was docketed by CEC, this technology is in prototype stage and considerable development work is needed. It is unknown whether intellectual property protections could make it broadly available or whether licensing costs would be limited or cost prohibitive. Also, energy savings for this technology are wide ranging and, thus, it is difficult to quantify the energy savings that could be attributable to this technology. (8%-40%, per Table 6.1). In addition, heat exchangers have a high cost of installation and increase the equipment size footprint. Ultimately, this drives increased laundry space and higher capital costs, which runs counter to a laundromat or hotel operator's business objectives. If CASE so desires, a utility subsidized retrofit can be offered if the installation is suitable for such retrofits. In addition, it should be noted that exhaust recirculation has considerable issues with uncontrolled lint deposits. As deposits grow, efficiency drops below a "standard" machine.

- Another example are heat pumps. This technology has existed for a long time and it has not generally been commercially adopted in the commercial sector for many reasons (some of which is minimally referred to in the IOUs CASE analyses). It is expensive to add this technology, it makes the system more complex, and is costly to maintain/repair. Heat pump drying with or without heater assisted drying takes longer and the energy savings and drying time is dependent on the installation method. This is contrary to what both laundromat and hotel operators and users of these dryers want and expect. Table 6.1 shows the wide variation in energy savings: 15-60 percent. With such wide variation, it is difficult to quantify the savings opportunity or to reliably demonstrate that the customers who purchase these dryers are going to want to invest in the higher cost associated with these products. Also, the IOUs consultant failed to take into account that California's lower ambient temperature (which is being pushed into the test procedure) will actually increase the drying time even further with this technology as heat pump efficiency decreases with temperature decrease.

- Another technology referred to in the IOU CASE analyses is burner/fan modulation. Burner/fan modulation tends to be complicated and expensive, and has little benefit to energy efficiency, as drying technology is fairly straightforward. The load is heated to a given temperature and maintained at that level. Regardless of modulation, the required load temperature remains the same. Any decrease in temperature simply increases overall cycle time, which again runs counter to what these dryers are meant to do. Manufacturers who employ this technology, do so for different reasons other than efficiency as there is very modest energy benefit based on empirical evidence.

The IOUs consultant presentation shows efficiency gain using two dryers with "minimal" program time impact. AHAM has repeatedly requested information on dryers used for testing to verify the claims presented by the IOUs consultant. We only ask for simple transparency in the data, but none has been provided even after numerous request to PG&E and CEC. In this case, we would ask for same information along with the cost/age of each dryer as well as protocol used to measure the Energy Factor.

It should be noted that the energy used per pound of water removed is consistent across all sizes and types, which would be logical because it takes a certain amount of energy based on the laws of thermodynamics to change water from a liquid to a gas. Therefore, if cycle times were to increase and the commercial dryers need to reach the same throughput per day in terms of pounds of textiles dried, there could be no net energy savings. In fact, there could be an increase in energy use as the number of dryers increase to dry the same amount of cloth or linens. We do not see how this proposal would save any energy and could only serve to increase repairs of current, older, less efficient units.

The trade-off between efficiency, costs and longer cycle times is particularly important to the laundromat industry and its low-income customers. The average total dryer cycle times in a laundromat are less than 30 minutes. Among those laundromats running high-efficiency washers that have high extract spin cycles, cycle time can drop to 20-24 minutes. In other words, the huge efficiency gains in drying are achieved in large measure on the washer side. DOE's analysis in 2012 during the clothes washer standards development found that the max-tech units on the market already use extremely high spin speeds. This connection between the washer energy and dryer energy is also captured in the clothes washer energy rating (MEF), which includes the sum of machine electrical energy consumption, the hot water energy consumption, and the energy required for removal of the remaining moisture in the wash load. The ENERGY STAR program characterizes this rather succinctly:

"Efficient motors used in ENERGY STAR certified washers spin clothes two to three times faster during the spin cycle to extract more water. Less moisture in the clothes means less energy used by the dryer."[1]

The bottom line is that it will be difficult for laundromat businesses to attract and serve customers effectively with longer cycles and puts their businesses in jeopardy.

Further, the TRC survey indicated that large load OPL's are already managed and operated in full capacity as well as in conditioned space, which addresses two of CEC's own stated large drivers of "inefficiency." Since the two largest drivers of "inefficiency" are already being inherently addressed in the marketplace, the CEC should provide evidence as to the benefits that this test procedure and possible markings would provide.

In Table 5.1 of the IOUs CASE analyses, it is stated that the intended purpose of the test procedure is efficiency. As such, this intended purpose needs to be balanced with other factors, such as cycle time and its related costs to the consumer (operators and low-income households), benefits to the consumer, and an understanding of how people use these products. An analysis should not disregard the market segment's primary objective for these products, which is to dry clothes fast. People, generally low income, do not want to be forced by government standards to have to stay in a laundromat for hours.

III. Auto-termination Is Not Relatable to Timed Dryers

The IOUs consultant's presentation on January 24, 2018 again listed auto-termination as a potential technology for maintaining cycle time with increased efficiency. AHAM commented on this before and would like to reiterate that auto-termination for coin-operated dryers that are selling drying "time" is illogical. This is counter to what the consumers in this segment pay for: a specific amount of drying time in the machine with the expectation that the dryer will dry their clothes in the shortest and lowest cost timeframe. There are states with laws (*e.g.*, New York *CLS Gen Bus § 399-f* and Massachusetts *ALM GL ch. 93, § 18B*) that require laundromats to post signs stating how much drying time the consumer receives when they put in their coins to start the dryer. California Weights & Measures officials verify time that is purchased for products throughout the state. In California's Division of Measurement Standards Training Manual for Weights and Measures officials, it specifically states the example of buying time for clothes dryers –

Time is a commodity because we can buy things by units of time. Examples could be hiring a person to work for us by the hour, or ***buying a certain amount of time in a clothes dryer*** *(emphasis added).*

Thus, auto-termination technology, though effective to increase efficiency for residential clothes dryer, is not a viable solution for commercial clothes dryers and the test procedure need not account for it.

IV. Test Procedure is not Repeatable or Reproducible

We continue to challenge the repeatability and reproducibility of the IOUs consultant's test procedure. We had provided reference to international standards governing repeatability and reproducibility and would like to point out that repeatability and reproducibility studies carried out by reputable organizations such as IEC utilize multiple labs, which is not the case with this test procedure. Even DOE test procedure development employs multiple labs and multiple rounds of testing. So far, information provided by the IOUs consultant has not met the burden of proof for this.

[1] "ENERGY STAR Certified Products, Clothes Washers, Buying Guidance," EPA, https://www.energystar.gov/products/appliances/clothes_washers, Viewed August 28, 2017.

We would like to note that there are aspects of the IOU consultant's test procedure that are baffling and is contradictory to creating a repeatable and reproducible test procedure. One of the examples of this is the ambient temperature selection for the test procedure. Since the ambient temperature that the CASE team chose for testing is based off average California climate, which is low temperate compared to a large part of the country, this test procedure will not be applicable to most of the rest of the country. It is obvious that the low ambient temperature selection provides a larger energy efficient gain theoretically in the IOUs consultant proposed test procedure, but will not actually yield real energy savings in the field.

V. Estimated Useful Life

In the TRC survey for OPL dryers, it is stated that the useful life of OPL dryers are 15-30 years. This is an extremely wide range. It would be helpful if the data was provided to support this estimate, which should be based on waste audits from a variety of regions and/or consumer surveys from a wide variety of consumers that are statistically significant. The study provides no insights into what models were studied, how much they cost, or how old the units are. These data are important to understand and compare the technology used for these dryers and what is commercially available in the market.

The IOUs CASE analyses claims that "[g]iven the low production volume of these products, we assume that they are redesigned infrequently, and rarely in totality. Most of the new features being marketed and sold appear related to the control interface, but not necessarily to the full design of the product." However, this is an overly simplistic and inaccurate assumption. No data or evidence is provided to support this assumption. It is important to understand that frequency and breadth of redesigns are impacted by several factors, not the least of which are the economy and the price of energy. It appears that the assumption is based on a review of products that may have been sold when the economy was not doing very well or when natural gas prices were already high. Regardless, an assumption of the frequency of redesign based on historic models is not a viable indicator of future trends.

VI. Cost of Test Procedure is High - $40 Million

One of the primary drawbacks of the IOUs consultant's proposed test procedure scope of testing dryers up to 210 lbs. in capacity is that it fails to take into account the number of unique models that are included into that scope, creating a huge test cost burden for the manufacturers. The consultant presentation on January 24 does include the cost of the testing for dryers in the multi-load machines.

AHAM has reviewed these costs and have found them to be very low. An important cost is the costs of the test units, which cannot be resold after testing. There are an estimated 6,500 model variations (many custom configurations) to be tested and the cost to test can range from $3,000 up to $60,000 depending on the size of the unit. AHAM estimates the test cost for the appliance manufacturing industry to be $40 million just for the cost of the test units. There are also costs from technician time, laboratory modifications (temperature and humidity), scales to weigh large machines, water conditioner, and propane calorimeter.

As AHAM stated in earlier comments, for a manufacturer or third party laboratory to run this test a new lab would have to be built or significant modification will need to be done (as they have to count for multiple models and SKU's that will need to be run). In addition, because the test procedure would be required only in California, it is unlikely that manufacturers or third party laboratories would view that as a worthwhile investment, which could result in unavailability of labs to run the test. In addition to the laboratory set-up, running the test procedure itself will also have significant costs. Some examples of these cost increases, which are outlined below, were not considered by CASE team study nor were they addressed during the January 24 webinar:

- Since the ambient temperature that CASE team has chosen for testing is based off average California climate, which is temperate, this test procedure would not likely be adopted for general testing by the other 49 states. Therefore, a test lab would either have to do only California related testing and stop doing testing for the other requirements around the country or create a new lab /environmental chamber for CEC testing only. This is neither cost-effective nor efficient. It will also decrease lab availability because fewer tests for both California, and potentially other states, could be run. This could, in turn, increase time to market for products.
- Water conductivity is not currently measured for any clothes dryer testing. Having to do this for CEC testing only will be an incremental cost without any savings opportunity.
- Costs of additional test cloths for larger loads appears to be excluded.
- Costs associated with increased size of HVAC system to support tighter ambient regulation appears to be excluded. This is unreasonable as the cost of testing dryer loads of up to 210 lbs. is a significant cost increase for labs/manufacturers compared to what is done today for residential applications, which is around 35 lbs.

Further, the costs to certify and submit data to CEC is not considered. AHAM surveyed its members regarding the time to comply with existing Department of Energy reporting requirements across products under AHAM's scope. The average time for a company to comply with annual reporting requirements is 230 hours. Work hours for annual reporting by manufacturer depends on the number of models, and can be as high as 553 hours. This is above the 129 hours, on average; each manufacturer spends reporting new models, changed models, or deleted models throughout the year. That means that the total certification reporting burden, including ad hoc certifications and the annual report, is, on average, 359 hours and up to 732 total hours for a manufacturer with more models. Notably, the brunt of the burden falls on product/compliance/design engineers who play a significant role in research and development activities that could lead to improvements in efficiencies, thus demonstrating how much time is diverted from those activities to comply with reporting obligations.

During the January 24 webinar, the IOUs consultant presented a cost analyses of test cost versus California's total energy cost. It is not a valid data point. The cost analyses of test cost should be compared against a number of things including energy savings, any potential cost adder for product as well as cost to consumers from longer cycle time. No such data has been provided.

VII. RMC Levels Below 5 percent are not Feasible for Larger Loads

The CASE team presentation did not address the concerns related to Final remaining moisture content (RMC). The IOUs consultant proposed an RMC of two to four percent after the test cycle, which is not feasible, especially for the larger loads. The large loads will make it virtually impossible to weigh the final RMC with any real precision. As loads are unloaded, they absorb moisture from the surrounding air driving RMC up. Large loads can take considerable time to unload and move from the machine to the scale. RMC levels will creep up during this delay. The IOUs consultant suggested an "insulated vessel" to transport the clothing, but the method investigated used much smaller loads than the test procedure attempts to cover. DOE load materials and article sizes are tightly controlled and RMC levels vary widely even using a uniform test cloth instead of a mixed load. Mixed loads, as proposed, may tangle. This in turn shelters parts of the load from drying and increases RMC levels even when the majority of the load is dry. This will ultimately create over-drying situations, and will adversely affect repeatability. Although "real world" loads are mixed and loads may tangle in the field, the test procedure must be repeatable to be accurate. Without a repeatable test, the results are essentially meaningless and the energy efficiency of products cannot be meaningfully compared.

VIII. Standby Power/Low-power measurement

The IOUs CASE analyses suggests that there is wide variation and opportunities for improvement in the market for standby power or low power (i.e., factor of two, with ranges from 3.3 Watts to 17.7 Watts). However, this statement is not accompanied by information about the units that can attribute to the difference such as features, type of fuel, and type of dryer. This claim also discounts some basic attributes of commercial dryers such as:

1. These dryers are used continuously throughout the day with very little downtime meaning any energy saving from standby power improvement will be much lower than their residential counterparts.
2. These dryers need to be in constant "ready-to-operate" mode for consumers, thus, disallowing manufacturers to make design changes that takes advantage of low standby power consumption such as turning off display or control functions.
3. Even if it were to be feasible to make these changes, given the high usage cycle of these units (and subsequent lack of standby time), the cost to make these changes would likely not provide sufficient payback to operators.

IX. Test Procedure Development

AHAM would like to reiterate that the test development process has been neither transparent nor inclusive as industry participation has been minimal in the test development process, which has resulted in non-transparent data generated by the IOUs consultant. We contend that the scope of the proposed test procedure is too broad and too cumbersome geared towards artificially high energy savings that are theoretical and not attributed to anything more than changes in test conditions and not to any changes to a products design. AHAM would gladly participate in any constructive and reasonable discussion on test procedures that can deliver real energy savings without creating undue burden on manufacturers, owner/operators and consumers.

We appreciate the opportunity to comment on this proposal and look forward to discussing this further.

Sincerely,

Kevin Messner
SVP, Policy & Govt. Relations
AHAM

David Cotter
CEO
TCATA

Brian Wallace
President & CEO
CLA

Lynn S. Mohrfeld, CAE
President & CEO
California Hotel & Lodging Association

Michael Shaw
Vice President, Government Relations
CMTA