



## News from NATSO

FOR IMMEDIATE RELEASE

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# “Hot Fuel” Settlement Leaves Consumers Out in the Cold, says NATSO

*Agreement Likely to Achieve Little More Than Pay Day for Trial Lawyers*

ALEXANDRIA, VA. – A proposed settlement agreement with Costco over “hot fuel” is the latest attempt by trial lawyers to mislead the public, according to Lisa Mullings, CEO of NATSO, a national association representing travel plazas and truckstops.

Despite claims that the warehouse club will “fix hot fuel,” the only likely results from the 19-page settlement agreement are a payout for plaintiffs’ lawyers and an end to the litigation for defendant Costco.

The proposed class action lawsuit claims that when consumers buy gasoline in warm-weather states, they get less than they pay for because warmer fuel expands. According to comments made by trial lawyers and lawyer-funded groups such as Consumer Watchdog, Costco has agreed to “fix hot fuel” in at least 14 states within five years. By that time, they insist, devices installed on Costco fuel pumps will dispense more or less gasoline depending on the temperature.

Mullings says news of the settlement came as a surprise because a California government body, the California Energy Commission, concluded just weeks ago that automatic fuel temperature compensation devices would actually *increase* the retail cost of gas and diesel.

In 2007, California’s legislature directed the CEC to study the effects of mandating automatic fuel temperature compensation, or ATC. The report, released in March, concluded that “under all the options examined,” ATC presented a “net cost to society.”

In fact, transcripts reveal that one commissioner remarked during the release of the study that “hot fuel” was “a lot of hot air and big dollars.”

Yet another commissioner remarked, “I say this as a public interest lawyer. [R]econsider what are the most important public interests here. Rome is burning, the Titanic is sinking...this just does not seem like the highest and best use of the state of California...”

Mullings said, “The trial lawyers can continue their charade, but the cat’s out of the bag on ATC—it would cost consumers more.”

She continued, “Despite all the hype, the mere existence of this agreement does not require Costco to install these devices. We believe this is simply a ploy by trial attorneys to induce other defendants into settling frivolous litigation.” She noted:

- Automatic temperature compensation is not permitted by law. The settlement agreement puts the burden of obtaining legal approval for ATC squarely on the plaintiff’s lawyers, not on Costco.

- The agreement states that as long as Costco believes that the devices cannot be installed under any state’s law, they do not have to install them in that state.
- If the settlement agreement directly or indirectly results in higher fuel costs for Costco in any state (“determined *solely* in the good faith *subjective judgment* of *Costco*” in provision 4.8) (emphasis added), Costco is able to unilaterally rescind or cancel the agreement for that state.
- If any other defendant secures “a more favorable settlement,” Costco (“in its sole discretion”) can modify its agreement to take advantage of the more favorable terms, according to provision 4.7.

“The fact that these trial attorneys are willing to enter into this agreement tells me that they are desperate to secure a financial windfall while they still can. It is unconscionable that they will go this far to score a big settlement award,” said Mullings. “Costco will not pay one penny in damages to the proposed class of consumers. On the other hand, the agreement clearly requires Costco to pay the plaintiffs’ lawyer fees awarded by the court.”

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*NATSO is the trade association of America’s travel plaza and truckstop industry. Founded in 1960, NATSO represents the industry on legislative and regulatory matters; serves as the official source of information on the diverse travel plaza and truckstop industry; provides education to its members; conducts an annual convention and trade show; and supports efforts to generally improve the business climate in which its members operate.*



Arizona Petroleum Marketers Association

April 29, 2009

Mr. Steve Gill  
Chair  
Central Weights and Measures Association  
24<sup>th</sup> Annual Conference  
**RE: Automatic Temperature Correction**

Dear Mr. Gill & CWMA Attendees:

On behalf of the Arizona Petroleum Marketers Association, I would like to thank you and your colleagues in the Central Weights and Measures Association (CWMA) for your time and efforts in addressing the issue of automatic temperature correction (ATC) and whether the equipment should be recommended or required for use in the retail marketplace. While it may seem strange to be receiving comments from petroleum marketers in Arizona, the actions and recommendations that CWMA can make prior to the annual NCWM conference in July could significantly impact petroleum marketers in Arizona.

Given the latest development of a large big-box retailer, Costco, agreeing to install ATC equipment where it is not prohibited in southern states as part of a legal settlement, retailers across the country are justly concerned. The potential implementation of ATC devices at retail should not be adopted hastily. It is imperative that all of the potential costs, ultimately borne by consumers, be accounted for and carefully weighed against any perceived social benefit in the accuracy of measurement delivered with ATC devices at retail.

Having attended the NCWM's annual meetings since June 2007, I would like to offer the following observations for your consideration before this again becomes a voting issue at the annual NCWM meeting in 2009.

ATC Benefits

In determining retail consumer benefits from ATC, many have argued using the following formula: (fuel volume) x (retail fuel price) x (volume correction factor). APMA is concerned that basing the formula for consumer benefits using current retail fuel prices ignores the fact that fuel pricing will likely change with ATC installation and that fuel pricing is a fluid process.

Common sense dictates that if retailers selling in warmer climates are required to sell an additional amount of fuel with ATC equipment, that the retailer will adjust fuel pricing to take into consideration that he is now selling "larger" gallons to consumers.

Some proponents of ATC have assumed retail prices will remain the same with ATC versus without ATC. However, by making this assumption, it is easy to end up with an inflated retail consumer benefit number.

**The reality is that it is unclear if consumers will perceive ATC to be a benefit if they know that while they may get a larger gallon from an ATC dispenser they are also likely to pay more for that larger gallon.**

#### ATC Costs

The special committee on ATC within NCWM attempted to gather data on the business costs associated with the installation of ATC at retail back in 2007. These would include the costs of equipment, either new dispensers with ATC capability or retrofit kits for existing dispensers, and the cost of labor associated with installation. Additional costs to consider for retailers would be the maintenance and inspection of the ATC dispensers. The installation of ATC in states would also likely lead to new costs for Weights & Measures Departments to acquire the proper testing equipment and train their staff for inspecting ATC in the field. With current state budget deficits in Arizona, this would be particularly problematic.

Much of the estimates for ATC costs to date have come from manufacturers selling the equipment in Canada. On behalf of my membership I have repeatedly attempted to get pricing data from Gilbarco since they have equipment which was type-approved by the California Division of Measurement Standards. However, I am repeatedly told that the equipment is not available for sale in the US and therefore there is no pricing available.

Forced to use the Canadian numbers by default to calculate the estimated cost of the ATC equipment alone without calculating in the installation fees in Arizona, APMA has found the following: with over 2,000 retail outlets in Arizona, APMA estimates the cost just to purchase the ATC equipment to be at least \$30 million. These costs do not include the hidden costs of installation/labor, breaking concrete and additional costs related to new federal standards which will only add to the retailer's financial burden to install ATC. With over 40% of Arizona's retail outlets in rural areas, many gasoline retailers will be forced to purchase completely new dispensers at an enormous expense. It is important to note that the majority of motor fuel retail outlets are now independently owned—meaning they are not owned by major oil companies, so the costs associated with installing ATC will not be paid by big oil but rather by small businesses. In Arizona, over 90% of all retail is independently owned—not owned by a major oil refining company. This shift in retail ownership has occurred nationally as well.

Given the federal Energy Act of 2005, when retailers break concrete on the dispenser pad in Arizona, they will also be required to install double-wall piping and double-wall tanks which will add to the overall costs of implementing ATC for some retailers. For rural retailers this burden may not make sense financially for them to remain in business.

#### Cost Benefit Analysis

When discussing the cost benefit methodology used by the California Energy Commission, APMA is concerned that the comparison of retail station costs to consumer benefits just does not provide the full picture since the formula again assumes the same retail prices in a post-ATC installation scenario as in a pre-ATC marketplace.

It seems much more likely that fuel pricing already does in fact take into consideration temperature. It's also important to note that Arizona ranked last in retail margins in 2007 according to OPIS bringing in a measly 3.8 cents per gallon when compared to the national average of 14.2 cents per gallon. In 2008, while margins improved slightly, Arizona still ranked lower at 10.1 cents per gallon versus 18.1 cents per gallon nationally. With these retail margins being lower than other "cooler" parts of the country, many of the consumer driven arguments for ATC at retail don't seem to hold-up. If the consumer does not benefit from the installation of ATC, then whom does?

#### Permissive versus Mandatory ATC

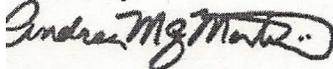
NCWM in the past asked industry to weigh in on the various scenarios in which retail ATC would be implemented and whether there should be a permissive phase and/or ultimately a mandatory phase. This is also how the vote at the annual meeting in July is set-up. While it is true that industry would prefer that the status quo remain in place and that retail ATC not be pursued for reasons outlined above, W&M officials need to recognize that a permissive retail ATC scenario will likely create major problems in the petroleum retailing market.

By allowing the installation of ATC to be permissive, NCWM would be essentially allowing large well-financed retailers to use the ATC regulation as a potential way to gain an unfair market advantage over smaller retailers. When coupled with the recent additional tank requirements under the federal Energy Act of 2005, many small retailers may decide that they can't afford to make these costly changes to their operation and close shop. Ultimately, this harms the consumer by decreasing their fueling options.

Permissive ATC also creates major confusion for the consumer because they can no longer compare station's pricing based on the same gallon being sold station to station. While the temperature in Arizona may very well be over the 60 degree standard—the temperature is constant corner to corner—consumers can easily compare price per gallon from the street—even if it is a gallon at 80 degrees. However, under a permissive retail ATC scenario, a consumer will be hard-pressed to compare stations selling ATC fuel v. retail sites selling traditional gallons. If some states decide not to implement retail ATC while other states do implement it—interstate commerce and taxes could be significantly impacted as well.

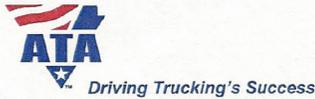
APMA truly appreciates the opportunity to share our concerns with CWMA officials. We intend to remain active and engaged on the issue of retail ATC and hope that the ultimate decision reached by any state legislature or regulatory agency will be one which balances science and the best interest of the consumer.

Sincerely,



Andrea M.G. Martincic  
Executive Director

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## American Trucking Associations

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**Richard Moskowitz**  
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May 4, 2009

Jack Kane, Chairman  
National Conference on Weights and Measures  
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*Via e-mail:* [jkane@mt.gov](mailto:jkane@mt.gov)

Re: Automatic Temperature Compensation Devices for Fuel Dispensers

Dear Chairman Kane:

The American Trucking Associations, Inc.<sup>1</sup> (ATA) is writing to provide comments on the issue of automatic temperature compensation (ATC) and its potential impact upon consumers of diesel fuel. As the national representative of the trucking industry, ATA is interested in the matters affecting the purchase and sale of diesel fuel, including the manner in which diesel is dispensed at retail fueling stations. Diesel fuel is the lifeblood of the trucking industry. Last year, the trucking industry consumed 39 billion gallons of diesel. For most carriers, fuel is the second largest expense after labor. As the largest diesel fuel consumer group, ATA members are keenly interested in any initiative that could impact diesel prices.

The trucking industry is the backbone of this nation's economy, accounting for more than 80% of the nation's freight bill and employing nearly 9 million Americans. The trucking industry delivers virtually all of the consumer goods in the United States, and over 80 percent of all communities in the United States receive their freight exclusively from trucks.

ATA has closely followed the debate over ATC and has previously provided comments to the National Conference on Weights and Measures (NCWM), opposing both permissive and mandatory ATC.<sup>2</sup> With the recent findings of the California Energy Commission (CEC) that implementation of ATC will result in additional costs for

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<sup>1</sup> ATA is a united federation of motor carriers, state trucking associations, and national trucking conferences created to promote and protect the interests of the trucking industry. Directly and through its affiliated organizations, ATA encompasses over 37,000 companies and every type and class of motor carrier operation.

<sup>2</sup> See Letter from Richard Moskowitz, ATA to Judi Cardin, NCWM (January 14, 2008).

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retailers and consumers with virtually no quantifiable benefit, we wish to again express our opposition to implementation of ATC at the retail level.

As we expressed to NCWM in our letter of January 14, 2008, ATA opposes a permissive standard for ATC. Permissive temperature compensation leaves the decision regarding whether to install temperature compensation equipment to the fuel retailer's discretion. A permissive temperature compensation regulatory environment could allow retailers to manipulate the system by installing the equipment where the average temperature of the fuel dispensed is below 60 degrees, and refrain from such installation where the average temperature of the fuel dispensed is above 60 degrees.

Permissive temperature compensation also could undermine fair trade and transparency in the retail marketplace. Many trucking companies rely upon daily price surveys to determine where and how much fuel to purchase at given points along a truck route. Other trucking companies rely on advertised prices to determine where to refuel. The use of ATC equipment by an unknown portion of fuel retailers will greatly complicate our members' ability to determine the most economic place to refuel. Retailers, whether located across the street from one another or across a state border, would no longer be selling comparable volumes of fuel, making it exceedingly difficult to make an educated purchasing decision.

ATA recognizes that the retail motor fuels industry is highly competitive with gas stations and truck stops competing fiercely to attract additional business on the basis of a penny per gallon. Fuel retailers price their fuel to cover the cost of the bulk fuel they purchase and include a reasonable return on their investment. In pricing diesel fuel, the retailer also must consider the prices that competing stations are charging, since a difference of as little as one penny per gallon could result in a substantial gain or loss of business. In this highly competitive environment, inventory expansion and shrinkage are accounted for in the retail price of diesel fuel, and any perceived advantage from temperature variation is eliminated through competitive pricing.

ATA does not believe that ATC technology will ensure that every gallon yields the same energy content. There are far more variables affecting the energy content of fuel other than temperature. BTU reductions from various renewable blends (e.g. ethanol and biodiesel) may have a greater impact upon energy content than temperature.

As we have commented previously, we are concerned that the trucking industry will bear the cost of installing ATC devices on fuel dispensers. The CEC's cost benefit analysis confirmed this. Therefore, we stand by our previous statement that the installation of ATC devices is a solution that is more expensive than the problem it is trying to address.

In a single day, a truck driver may travel through several states. We believe it would be detrimental to our industry if various states each adopt their own systems for

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measuring motor fuel. Therefore, we again recommend that the NCWM consider new language that prohibits states from adopting ATC at the retail level.

\* \* \* \* \*

If you have any questions concerning the issues raised in this letter, please contact the undersigned at (703) 838-1910.

Respectfully submitted,



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Vice President & Regulatory Affairs Counsel

cc: States Weights and Measures Officials

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ATC as a Better, More Comprehensive Form of Measurement  
By Henry Oppermann  
Weights and Measures Consulting, LLC

**I. Overview**

Over the past 5 years, much valuable information has been collected and diverse views presented as the issue of temperature compensation has been addressed by the NCWM. Several reports and the temperature data collected by state weights and measures programs are referenced in this document. They are:

1. Fuel Delivery Temperature Study, California Energy Commission, Transportation Committee, January 2009, Report No. CEC-600-2009-002-CTF
2. An Economic Analysis of the California Energy Commission Staff's Fuel Delivery Temperature Study and the "Hot Fuel" Allegations, by Michael A. Flynn, distributed at the NCWM Interim Meeting, January 2009. Several claims in Mr. Flynn's report are challenged in this paper.
3. Temperature Compensation of Liquid Fuels, A Study for National Weights and Measures Laboratory, Stanton Avenue, Teddington, Middlesex, Project No: NWM006, Report No: 184/99, Date: 21 July 1999
4. Temperature data collected by weights and measures programs.

The report by the staff of the California Energy Commission provides the best economic analysis that has been done on the subject. However, the economic analysis is not the only issue that should be considered. One issue has not yet been adequately addressed, namely, **does the benefit of more comprehensive measurement that results from temperature compensation justify the cost?** The answer to this question does not come from an economic analysis of these issues, but is a judgment of the value of better measurement. Weights and measures officials will have to make this judgment when they vote on the temperature compensation issue again. The benefit referenced should be considered in terms of:

- Equity in individual transactions;
- Transparency for consumers and in competition among companies in that unit prices are based on the same temperature;
- Better service station management of fuel inventories; and
- More accurate field tests performed by service companies and weights and measures officials.

To highlight these aspects of the debate, this paper looks at several issues that are relevant to making a decision on the value of automatic temperature compensation for retail motor fuel dispensers.

1. Are weights and measures officials interested in accurate measurement only on the basis of an annual average or are they interested in the accuracy of individual transactions? Product temperature data collected by weights and measures programs are presented to illustrate the significance of this issue. (See sections III and IV, in particular.)

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2. Several claims and conclusions contained in the report by Mr. Michael A. Flynn are challenged to address issues that are incorrect or not adequately substantiated.
3. Does selling gasoline on the basis of average temperatures and not addressing product temperature in individual transactions a good business practice or good for consumers?
4. Will service station owners achieve better inventory control by using temperature compensated dispensers? Most people recognize that inventory control will be improved by the use of temperature compensation.

## II. Oil Industry Justification for ATC at Wholesale

The oil industry has justified the use and need for ATC at wholesale, because the shipment and delivery of fuel products occur at different times and locations in the country. In his testimony before the Subcommittee On Domestic Policy Of The Committee On Oversight And Government Reform Of The United States House Of Representatives on July 25, 2007, Mr. Hugh Cooley, Vice President and General Manager, National Wholesale and Joint Ventures, *Shell Oil Company*, stated the following.

"Furthermore, the reasons that temperature adjustment makes sense for intercompany exchange transactions do not apply to retail sales: distance, time, quantity, and temperature. Gasoline marketers like Shell exchange large volumes of gasoline between terminals that are very far apart, often in markedly different climates, and at varying times of the year, all of which requires accounting for the impact of temperature variations. For example, Shell might deliver a specific number of gallons of gasoline to another company in Texas (where we have a refinery) in exchange for that company's near simultaneous delivery of gasoline in northern Minnesota (where we do not have a refinery). Similarly, in some instances a company may receive product in one season and repay the gallons at a later date when the weather is cooler or warmer. In contrast, retail gasoline sales occur at far smaller quantities under highly competitive conditions in a specific place, at a specific time, under specific conditions, which include the ambient temperature and large signs visible from the street posting prices. Unlike the exchange context, consumers do not buy and sell gasoline over a huge geographic distance and climate difference - in fact, they cannot do so. Likewise, consumers do not receive product in one season and repay it in another — nor is that possible."

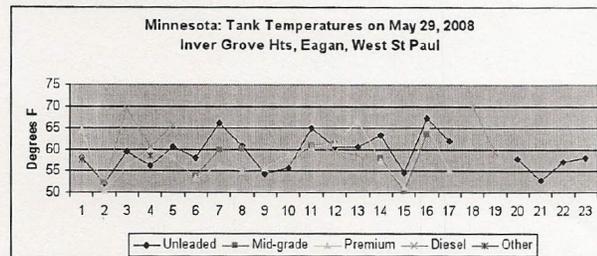
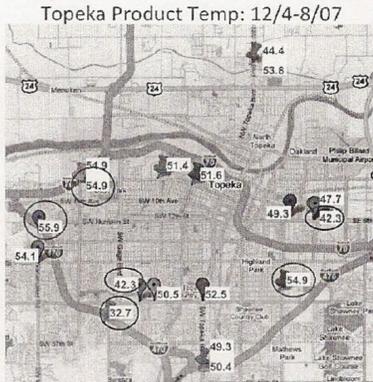
In reality, the only justification for the use of temperature compensation at wholesale is to address temperature changes in the product. The locations and times of delivery are not important, except for the fact that the temperature of the product is different based upon location or the time of the transaction. The oil industry makes temperature corrections to the volumes, because the temperature of the petroleum products usually varies from the source to the destination of delivery. Temperature differences are large for consumers as well, so the same considerations apply at retail as they do at wholesale. Why is temperature compensation justified because millions of gallons of fuel are bought and sold between two

large companies, but temperature compensation is not justified for millions of gallons of fuel sold to consumers?

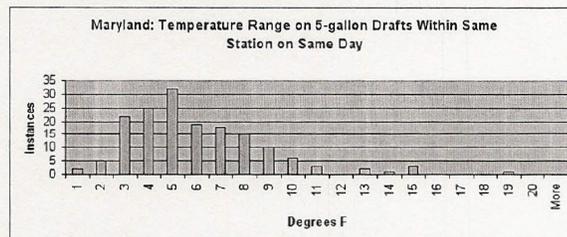
The fact is that the temperatures of retail gasoline and diesel fuel vary from station to station, from dispenser to dispenser within the same station, and may vary from transaction to transaction for the same dispenser. If the rationale of the oil industry to justify ATC at the wholesale level is essentially due to the fact that the product temperature changes, then the rationale and justification for the use of A TC applies equally well to retail deliveries of gasoline and diesel fuel at service stations.

### III. Variations in Product Temperature at Retail

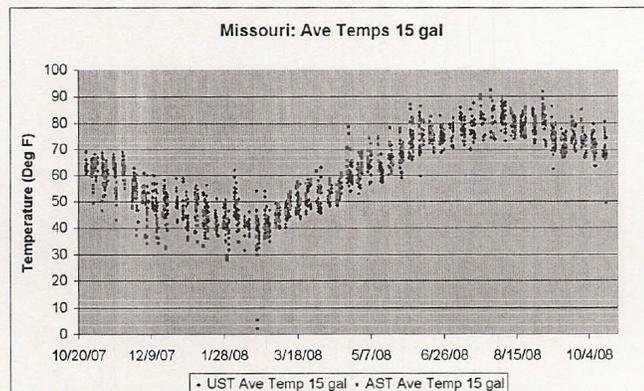
Product temperatures can vary greatly at retail. Consequently, temperature differences are significant at retail. Data presented to the NCWM for product temperatures in Topeka, KS, (below left) and for underground tank temperatures in Minnesota (below right) show that the temperatures of gasoline and diesel fuel vary from station to station.



Temperature data collected by Maryland demonstrate the extent to which product temperatures can vary on the same day within the same station.



Temperature data collected by Missouri show how product temperatures can vary across the state throughout the year. The temperatures are the average temperatures of three consecutive 5-gallon test drafts, which is equivalent to 15-gallon deliveries.



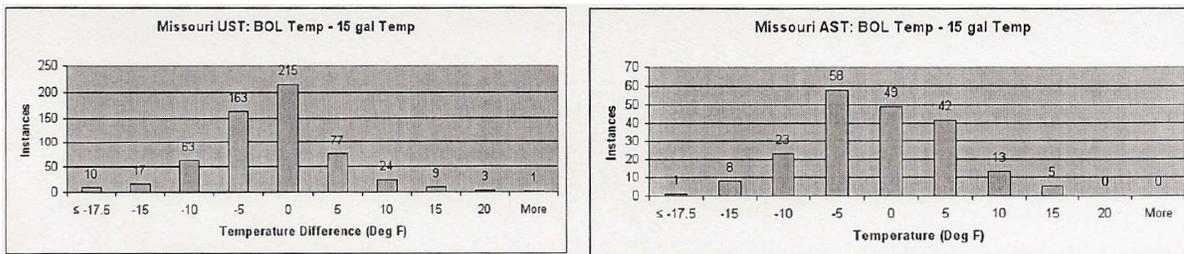
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corrected at retail? The technology exists and is in widespread use in Canada. The California study showed that the cost of ATC equipment per gallon of fuel dispensed is relatively small. There is no technical obstacle to performing temperature compensation at retail.

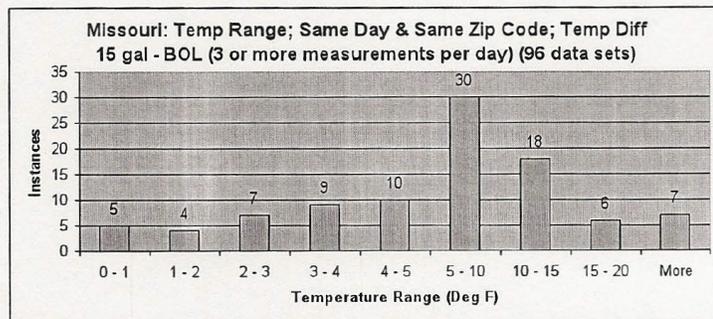
#### IV. Accuracy on the Average or Accuracy on Each Transaction

Mr. Michael Flynn explained in his report how service station owners establish the unit price for gasoline and diesel fuel based upon the number of gross gallons received at the temperature of the product as stated on the bill of lading. It is important to assess whether or not the stations actually sell the products at the temperatures for which the station owners compute the unit prices. Should product temperature variations be addressed in individual transactions or is the average of product temperatures over a year sufficient?

Several weights and measures programs collected significant amounts of temperature data that allow the comparison of the temperature on the bill of lading (BOL) for deliveries to the temperatures of the products actually delivered from the retail fuel dispensers. If one looks only at the average difference between the BOL temperatures and the temperatures of the product delivered over a period of a year, the average differences are relatively small, often less than 1.5 F. However, the temperature differences for individual transactions can cover the range from zero to over 20 °F. Below are histograms for the State of Missouri that show the variations in the product temperatures from the BOL for 15-gallon deliveries. The graph at the left is for deliveries from underground storage tanks and the graph to the right is from above ground storage tanks. Each value on the horizontal axis represents temperature differences that are  $\pm 2.5$  °F from the value on each axis (e.g., the column marked "5" is for temperatures from 2.5 to 7.5 °F).



The Missouri data were evaluated to see how much the delivery temperature varied from the temperature reported on the most recent BOL for the stations. The range of the temperature deviations of the delivery temperatures on each day was calculated when three or more “deliveries” (three consecutive 5-gallon test drafts) were run by Missouri inspectors. The distribution of the deviations is shown on the graph to the right. Sixty-one out of 96 tests (63.5%) had temperature deviations of 5 °F or more, which represents a



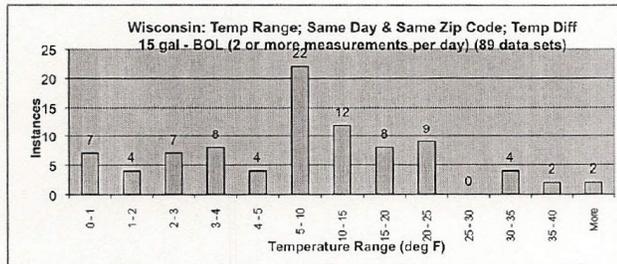
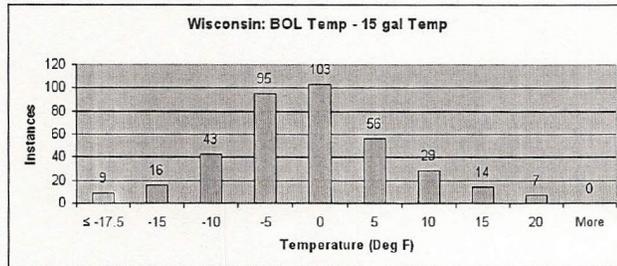
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change in volume of gasoline of about 0.33%.

The "peak" of the distribution (30 instances or 31 %) is centered at 5 to 10°F, which includes all values from 7.5 OF  $\pm$  2.5 °F and represents a temperature effect of 0.5% on the volume of gasoline. Approximately, 14% (13 of 96) had a temperature effect greater than 15 °F, which is more than 1% of the volume of gasoline.

Based on the information Mr. Flynn provided on how gas stations set the unit prices based on the gross gallons delivered to the station, that means the temperature effect on the unit price for gasoline causes the unit price to be in "error" by at least 0.5% from the target price in 63.5% of the transactions. Therefore, at a unit price of \$2.00 per gallon, this means that the variation in product temperature within the same zip code area amounts to at least 15 to over 30 cents on a 15-gallon delivery of \$30. Thirteen of those 96 "deliveries" (13.5%) have temperature deviations of 15 or more degrees, which represents a temperature effect of 1 % of the volume (and the unit price) of 30 cents or more on a 15-gallon or \$30 delivery. At \$4 per gallon, the money values in all of the examples double.

To show that the product temperature variations in Missouri are not unusual, to the right is a histogram of temperature variations for a 15-gallon "delivery" from data collected by the State of Wisconsin for three consecutive 5-gallon test drafts. The temperature range on the same day for the same zip code is even greater in Wisconsin than in Missouri. The maximum temperature range in Missouri was about 26 °F, but for Wisconsin, the maximum range was almost 46°F. For Wisconsin, 66% of the tests had temperature deviations of greater than 5 °F; 28% had temperature deviations greater than 15 °F (or 1% of volume); and 9% had temperature deviations greater than 30 °F (or 2% of volume). Based on how Mr. Flynn reported that service stations take temperature into consideration when setting unit prices, these deviations represent over 1% and 2% "errors" in the unit prices.



ATC would virtually eliminate the varying effect of temperature on individual deliveries. Why shouldn't the effect of temperature be addressed?

The net weight criteria in Handbook 133 for the accuracy of the net contents of prepackaged goods requires that packaged products comply with two requirements, namely, (1) the average net weight for the inspection lot and (2) the maximum allowable variation limit for individual packages. The temperature effect on the volume of gasoline combined with the temperature variations from station to station and transaction to transaction are analogous to the variations in

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the net contents of packages. Again, why shouldn't the effect of temperature on the delivery of gasoline and fuel oil be addressed through ATC?

#### **V. The Average Approach to Temperature Variations**

Mr. Michael Flynn explained that the average of random purchases of gasoline and diesel fuel made throughout the year at different service stations (which also applies to random purchases throughout the year at the same service station) will result in the average temperature of purchases to be very close to the average temperatures for the stations. Is this good enough? Does this reflect good business practices?

To illustrate this point, we can apply the random sampling concept to the purchase of hamburger from different supermarkets using an extreme example. Suppose that there are five supermarkets in an area and a consumer, using a random sampling plan, is going to pay for 1 lb of hamburger during each visit to these five supermarkets throughout the year. Suppose at Supermarket #1, the consumer pays for a package labeled as 1 lb of hamburger, but the consumer actually receives 2 lb of hamburger. Suppose that at Supermarket #2, the consumer pays for 1 lb of hamburger, but receives 1.5 lb of hamburger. Continuing this example, at Supermarket #3, the consumer pays for 1 lb of hamburger and receives 1 lb of hamburger. At Supermarket #4, the consumer pays for 1 lb of hamburger, but receives 0.5 lb of hamburger. At Supermarket #5, the consumer pays for 1 lb of hamburger, but receives an empty package (0 lb) of hamburger. If the consumer makes 10,000 purchases of hamburger (and all of the packages are labeled with 1 lb) at these supermarkets during the year using a random sampling plan, then the average net weight of the consumer's annual purchases will be 1 lb. Are all of these transactions equitable? Are all five supermarkets following good business practices? The net content of packaged goods is based on both the average requirement and accuracy limits (maximum allowable variations) on individual packages.

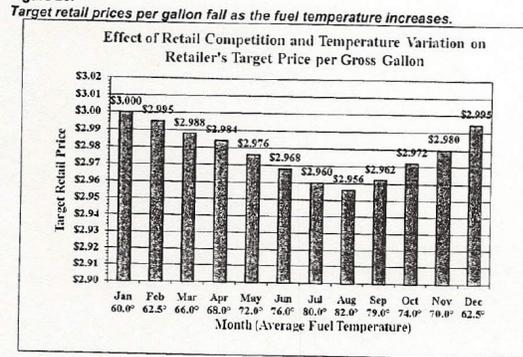
The temperature of the gasoline and diesel fuel at the gas pump cannot be controlled, but the effect of temperature on the volume of gasoline is often greater than the tolerance applied to retail fuel dispensers. Does the consumer deserve more comprehensive (temperature corrected) measurement in individual purchases of gasoline? This brings us back to the question, "Should the product temperature be addressed for purchases of gasoline and diesel fuel for individual transactions or only to the annual average?"

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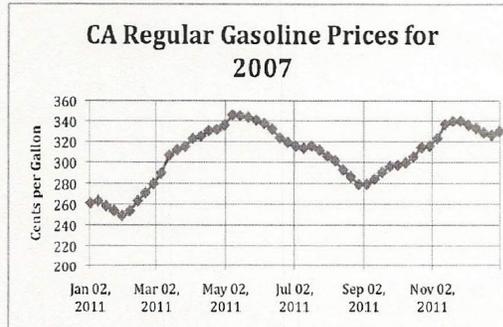
**VI. Does Competition Automatically Correct for Product Temperature?**

Mr. Flynn states, “Competition in retail fuel markets already adjusts pump prices to compensate for the seasonal effect of temperature on the volume of gasoline and diesel fuel.”<sup>1</sup> Mr. Flynn explains in great detail how service station dealers can use the monthly product temperature to set the target price of the retail product. However, on page 50 of his report, Mr. Flynn states that “...dealers themselves do not consciously and explicitly change their pump prices to achieve this result...” and “...anyone looking for the specific notes and calculations by which individual retailers determined the appropriate changes in their pump prices will do so in vain.”

Furthermore, the method to calculate the target price of service stations carefully explained in his report and illustrated in the graph at the right (taken from page 57 of his report) are not reflected in the actual retail prices for California. Consequently, Mr. Flynn cannot substantiate his claim with the actual gasoline prices in California (graph at the right) over the time period covered by his report<sup>2</sup>. Mr. Flynn admits in his statement during the December 9,



2008, meeting of the California Energy Commission, “Now, this is not to suggest that these are what wind up as the street prices, because there’s lots of other factors that go into the determination of the competitive retail price.”<sup>3</sup> Mr. Flynn is correct on this point, because the actual retail prices in California do not follow the target retail prices that he has computed. One can reasonably question if the temperature of the product has any effect on how the prices of gasoline at service stations are established.



<sup>1</sup> An Economic Analysis of the California Energy Commission Staff’s Fuel Delivery Temperature Study and the “Hot Fuel” Allegations, by Michael A. Flynn, page 4.

<sup>2</sup> Department of Energy, Energy Information Administration web site, [http://www.eia.doe.gov/oil\\_gas/petroleum/data\\_publications/wrgp/mogas\\_history.html](http://www.eia.doe.gov/oil_gas/petroleum/data_publications/wrgp/mogas_history.html)

<sup>3</sup> Transcript of the December 9, 2008, , Committee Workshop Before The California Energy Resources Conservation And Development Commission, page 155, web sites [http://www.energy.ca.gov/transportation/fuel\\_delivery\\_temperature\\_study/documents/2008-12-09\\_workshop/2008-12-09\\_TRANSCRIPT.PDF](http://www.energy.ca.gov/transportation/fuel_delivery_temperature_study/documents/2008-12-09_workshop/2008-12-09_TRANSCRIPT.PDF) and [http://www.energy.ca.gov/transportation/fuel\\_delivery\\_temperature\\_study/documents/index.html](http://www.energy.ca.gov/transportation/fuel_delivery_temperature_study/documents/index.html).

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In short, Mr. Flynn says that market competition automatically corrects for all factors that affect the price of gasoline and diesel fuel. Therefore, Mr. Flynn claims that whatever factors affect the fuel products that service stations sell, even the effect of temperature, have already been factored into the unit prices that stations have set in the past by virtue of the fact that the unit price is based upon the gross volume of fuel delivered to the station. However, the temperatures of the majority of fuel sold through the fuel dispensers are different from the temperature on which the station owner has set the price for selling the fuel. Some could argue that the multitude of pricing errors that occur, average out over the course of a year, so the cost of using ATC equipment is not justified. However, selling gasoline on a temperature compensated basis would provide a uniform and definite basis for service stations on which to set the unit price of gasoline and allow consumers to make better price comparisons, since temperature is no longer an unknown variable in the transaction.

Regarding Mr. Flynn's approach that competition addresses all market factors that affect the price of gasoline at retail, another analogy can be provided from the net weight of packaged goods. If competition is the "cure all," then when the concept of competition is applied to the net weight of packaged commodities, then packagers could be allowed to sell packaged goods on the basis of gross weight, because competition would drive the unit prices down to the level where the tare weight is automatically considered in the (gross) weight and item price. Is this what weights and measures officials are willing to accept?

## **VII. Inventory Control**

The variation in product inventory for service stations is affected to a significant extent by temperature changes in the gasoline and diesel fuel sold. The shrink of gasoline inventory is a problem that is pervasive in the industry. The study done for the for National Weights and Measures Laboratory (NWML) in the United Kingdom documented the extent of shrink and gain in inventory at service stations in their country. The amount of shrink varied depending upon the source of supply of the product. The report (which should not be interpreted as the position of the NWML) recommended that ATC at retail be allowed to improve inventory control.

## **VIII. Net Versus Gross Volume Delivery Systems**

Mr. Flynn illustrates four relationships for how the price of fuel is expressed at retail and how the quantity of fuel is measured at retail (pages 9-14 of his report). Mr. Flynn states that Scenarios II and III are problematic, because the systems for pricing and measurement are different. Mr. Flynn states, "In particular, the total dollar cost to a motorist for a given quantum of fuel would be identical under either *Scenario I or Scenario IV*."<sup>4</sup> Scenarios I and IV have the pricing and measurement methods based on gross-to-gross gallons and net-to-net gallons, respectively. Mr. Flynn continues, "It is the core assumption of this paper that no dispute or problem arises as long

<sup>4</sup> An Economic Analysis of the California Energy Commission Staff's Fuel Delivery Temperature Study and the "Hot Fuel" Allegations, by Michael A. Flynn, page 10.

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as retail fuel sales are conducted according to *either Scenario I or Scenario IV.*<sup>5</sup> However, Scenario I is valid only if the service stations are selling the products at the same temperatures at which they price the product. We know from the data collected by weights and measures programs that this is not the case, so the legitimacy of Scenario I is lost. Consequently, the only remaining and reliable approach to pricing and selling fuel at retail is Scenario IV, which is pricing and measuring retail fuel on the basis of net (temperature compensated) gallons.

### **IX. More Accurate Field Tests of Dispensers**

When testing retail fuel dispensers without temperature compensation capability (gross volume), weights and measures officials and service company representatives do not correct for (1) the change in volume of the fuel due to any change in temperature of the product from the meter to the prover or (2) the capacity of the volume standard for the difference of the temperature of the standard at the time of test from its 60 OF reference temperature. It isn't possible to correct for a change in temperature from the meter to the standard when testing a temperature uncompensated dispenser, because there isn't a thermometer well adjacent to the meter to get the temperature of the product at the meter. The change in capacity of the volume standard is very much smaller than the temperature effect on the gasoline or diesel fuel during a test.

If the proposed changes to Handbook 44 for temperature compensated fuel dispensers are adopted, then temperature compensated dispensers would indicate the temperature of the product passing through the meter during the tests of the meters, there would be a thermometer well at the meter and temperature corrections could be made to any temperature change from the meter to the standard and to the capacity of the standard. If these corrections would be made during a field test, then the accuracy of the field test would be increased.

### **X. Conclusions**

Automatic temperature compensation provides a more comprehensive measurement at retail and therefore a more accurate and equitable measurement. Changes in the temperature of gasoline and diesel fuel have a greater impact on the volume of the fuel than does the Handbook 44 tolerance allowed for retail fuel dispensers. Automatic temperature compensation would provide greater equity in retail fuel measurement. Hence, automatic temperature compensation should be used at the service station level for the retail sales of gasoline and diesel fuel.

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<sup>5</sup>An Economic Analysis of the California Energy Commission Staffs Fuel Delivery Temperature Study and the “Hot Fuel” Allegations, by Michael A. Flynn, page 10.