

DEPARTMENT OF FOOD AND AGRICULTURE
PROPOSED CHANGES IN THE REGULATION

Title 4. Business Regulations
Division 9. Division of Measurement Standards
Chapter 1. Tolerances and Specifications for Commercial Weighing and Measuring
Devices
Chapter 6. Automotive Product Specifications
Chapter 7. Advertising of Gasoline and Other Motor Vehicle Fuels

REVISED INITIAL STATEMENT OF REASONS

PROBLEM STATEMENT

The Department of Food and Agriculture (Department) is responsible for applying uniform accuracy standards and method of sale requirements to all commercial transactions. This establishes fair competition in the marketplace and provides all Californians a basis of value comparison for their purchasing decisions. For motor vehicle fuels, this responsibility includes enforcement of quality specifications, dispenser standards, advertising, labeling, and method of sale requirements. Enforcement of these standards provides both buyer and seller an assurance of equity and transparency, which is the foundation of an efficient and free market economy.

Division 5 Chapter 14 of the Business and Professions Code (BPC) establishes the authority of the Department for oversight and regulation of motor vehicle fuels sold commercially in the state. The Department establishes motor vehicle fuel quality specifications and requirements for method of sale, labeling, and advertising. BPC § 13440 requires the Department to establish specifications for automotive spark-ignition engine fuels. BPC § 13446 establishes the authority of the Department to adopt specifications for alternative spark ignition motor vehicle fuels such as compressed natural gas (CNG) and liquefied natural gas (LNG).

In this rulemaking, the Department proposes to adopt requirements for CNG and LNG method of sale, labeling, and advertising and an interim standard for natural gas fuel quality. The proposed regulation addresses three problems:

Problem 1: National Institute of Standards and Technology (NIST) Handbook 44 conflicts with the requirements of AB 1907.

Assembly Bill 1907 (AB 1907) (Ridley-Thomas, Statutes of 2014, Chapter 805), specifies the method of sale for CNG and LNG in California as units of gasoline gallon equivalent (GGE) and diesel gallon equivalent (DGE), respectively. AB 1907 also defines the GGE to mean 5.66 pounds of CNG, and DGE to mean 6.06 pounds of LNG.

BPC § 12107 requires the Secretary to establish tolerances and specifications and other technical requirements for commercial weighing and measuring devices. In doing so, the Secretary must adopt by reference the latest standards recommended by the National Conference on Weights and Measures (NCWM) and published in NIST Handbook 44 *“Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices.”* The Secretary may specifically modify, amend, or reject sections of NIST Handbook 44 through regulatory action. The current language in NIST Handbook 44 is not consistent with AB 1907. Rulemaking is necessary so that CNG and LNG dispenser labeling and testing conforms to the requirements codified by AB 1907.

Problem 2: The Department has not adopted fuel quality specifications for natural gas motor vehicle fuels.

BPC Chapter 14 Articles 5 and 6 make clear the intention of the Legislature that the Department establish and enforce motor vehicle fuel quality standards. Fuel quality standards ensure that vehicles will meet the performance, durability, and emission standards of engine manufacturers. Currently, there is no regulation for LNG motor vehicle fuel quality California. Sales of natural gas motor vehicle fuels in California continue to expand without proper oversight and regulation. Between 2009 and 2016, the number of public and private natural gas fueling stations increased from 216 to over 350.^{1, 2}

The proposed interim natural gas fuel quality regulation is necessary for the Department to carry out its legislative mandate to adopt and enforce appropriate quality specifications for CNG and LNG fuels. Uniform and transparent fuel quality standards throughout the state are necessary to protect both consumers and retailers. Motor vehicle fuels not meeting quality standards may impair vehicle performance, mileage, and durability. They may increase tailpipe emissions of certain regulated toxic and climate change pollutants.

The California Health and Safety Code Division 26 authorizes the California Air Resources Board (CARB) to regulate motor vehicle fuels to protect public health by reducing air pollution from toxic tailpipe emissions. In 1992, CARB adopted specifications for CNG fuel in California Code of Regulations (CCR) Title 13, Division 3, Chapter 5, Article 3 § 2292.5 (CCR § 2292.5) . This regulation was based on data generated with engine and emissions control technologies available at that time. Over the decades, these technologies have evolved, as have codes governing vehicle performance and emissions. The CARB regulation also references outdated versions of ASTM International test methods.

¹ California Energy Commission *2015 Natural Gas Vehicle Research Roadmap (draft)*, CEC-500-2-15-091-D, July 2015, page 12.

² California Energy Commission Energy Almanac website, *Transportation Natural Gas in California*, http://www.energy.ca.gov/almanac/transportation_data/cng-lng.html accessed 2/17/2017.

Since 2010, CARB has not enforced its regulation CCR § 2292.5 uniformly throughout the state. Instead, it has granted a blanket exemption throughout southern California. This exemption includes over 200 commercial CNG stations. This situation leaves many natural gas fuel purchasers without adequate information on fuel quality to use in making value comparisons for both fuel and vehicle purchases.

Problem 3: The Department has not adopted a regulation for the method of sale, labeling, and advertising of natural gas motor vehicle fuels. The labeling requirements of Federal Trade Commission rules 306 and 309 for alternative fuels and AB 1907 (Ridley-Thomas, Statutes of 2014, Chapter 805) are not met by a majority of the natural gas dispensers inspected by the Department.

CCR Title 4 Division 9 Chapter 7 establishes regulations for the method of sale, advertising, and labeling of motor vehicle fuels for California. Chapter 7 does not currently include regulations for CNG and LNG fuels.

Currently, both state and federal codes set labeling requirements for natural gas fuel dispensers. Department staff have inspected CNG dispensers throughout the state and have found many labeling violations. As a result, purchasers of natural gas fuels may not have complete and accurate information on fuel quality to use in making value comparisons for fuel and vehicle purchases. Fuel purchasers may not be informed that the fuel offered for sale does not meet the state's quality specifications. A lack of consistency in the labeling of fuel dispensers will lead to confusion in the retail fuel marketplace for both fuel buyers and sellers. Many CNG dispensers are unattended, making clear and consistent labeling essential information for consumers. Adoption of advertising and labeling regulations for CNG and LNG fuels by the Department will enable enforcement of current codes and provide purchasers of these fuels with the same protections now in place for buyers of gasoline and diesel fuel.

STATUTES AND RECENT LEGISLATION

BPC § 12107 requires the secretary to “adopt, by reference, the latest standards as recommended by the National Conference on Weights and Measures and published in the National Institute of Standards and Technology Handbook 44 “Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices,” except as specifically modified, amended, or rejected by regulation adopted by the secretary.” BPC § 12107 also states that, “It shall be unlawful for any person to violate any of the rules, regulations, tolerances, specifications, or standards established under this section.”

BPC §§ 12500-12515 establish requirements for commercial weighing and measuring devices including testing, sealing, and return to service following repairs.

BPC § 12500 (e) defines “commercial purposes” as used in BPC Chapter 5:

(e) "Commercial purposes" include the determination of the weight, measure, or count of any commodity or thing which is sold on the basis of weight, measure, or count; or the determination of the weight, measure, or count of any commodity or thing upon which a charge for service is based. Devices used in a determination upon which a charge for service is based include, but are not limited to, taximeters, odometers, timing devices, parcel scales, shipping scales, and scales used in the payment of agricultural workers.

BPC Chapter 5.5 Service Agencies for Weighing and Measuring Devices §§ 12531-12544 establishes requirements for registered service agencies and agents.

BPC § 13440 (a) requires the Department to adopt by reference the latest versions of quality specifications for spark-ignition motor vehicle fuels established by consensus standards writing organization. § 13440 (a) also stipulates that no specification can be less stringent than one required by any California state law. Assembly Bill 808 (Ridley-Thomas, Statutes of 2015, Chapter 591) added BPC § 13440 (i), which specifies that natural gas "motor vehicle fuel shall meet the latest specification set forth by ASTM International or SAE International."

BPC § 13400 (b) (9) was added by AB 808 to define "Alternative fuel" to include natural gas fuels. AB 808 also added BPC § 13446 to authorize the Department to adopt interim specifications for an alternative motor vehicle fuel such as CNG or LNG when a standards development organization accredited by the American National Standards Institute (ANSI) has not published a standard. ASTM International or SAE International are both ANSI-accredited standards development organizations. Like § 13440 (a), § 13446 also stipulates that no specification can be less stringent than any California state law.

BPC §13404.5 requires the secretary "to adopt, by reference, the latest method of sale for motor vehicle fuels and lubricants adopted by the National Conference on Weights and Measures and published in the National Institute of Standards and Technology Handbook 130 "Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality," except as specifically provided by the Legislature or modified, amended, or rejected by regulations adopted by the secretary."

BPC § 13405 establishes the authority of the Department to grant a developmental engine fuel variance under specified terms and conditions.

Assembly Bill 1907 (Ridley-Thomas, Statutes of 2014, Chapter 805) amended BPC §§ 13404 and 13470 and established the method of sale at retail for CNG and LNG by persons not considered a public utility. The amended statutes also prohibit businesses from selling CNG or LNG at retail to the public unless there is displayed and labeled on the dispenser in a conspicuous place "Gasoline gallon equivalent" (GGE) or "Diesel gallon equivalent" (DGE), respectively. Revenue and Taxation Code (RTC) § 8651.6 was amended to add the conversion rates of 5.66 pounds of CNG per one GGE, and 6.06 pounds of LNG per one DGE.

REGULATION OF MOTOR VEHICLE FUELS IN CALIFORNIA

BPC Chapter 14 gives the Department authority to oversee and regulate all motor vehicle fuels in California. The Department's policies are designed to support a transparent, fair, and balanced marketplace that provides fuel purchasers with information they need to make value-based comparisons. The Department does not favor or promote any fuel type over another. Regulations adopted by the Department are intended to provide transparency and consistency to the marketplace to protect both fuel buyers and sellers.

Natural gas fuels are subject to regulation by the Department and CARB. To date, neither the Department nor CARB has adopted a regulation for LNG fuel quality in California. As noted above, CARB has adopted CNG fuel quality specifications. According to CARB policy, these specifications are waived throughout the service areas of the Southern California Gas Company (SoCalGas) and the San Diego Gas and Electric Company (SDGE). With this rulemaking, the Department is proposing to adopt a uniform, statewide interim standard for CNG and LNG fuel quality.

BPC § 13446 as amended by Assembly Bill 808 authorizes the Department to adopt an interim fuel quality standard for an alternative motor vehicle fuel when there is no standard published by an ANSI-accredited standards development organization. Currently, no such standard has been published. Both SAE International and ASTM International have workgroups developing a national standard for natural gas fuels. If one of these organizations does publish a standard, BPC § 13446 requires that it be adopted by the Department by reference if the standard is no less stringent than any existing state law.

PIPELINE GAS AND NATURAL GAS FUELS IN CALIFORNIA

A large network of pipelines distributes natural gas throughout California. The California Public Utilities Commission (CPUC) oversees and regulates the transport and sale of pipeline gas through tariffs. Most natural gas is sold by California's three major gas utilities (Pacific Gas and Electric Company, Southern California Gas Company, and San Diego Gas and Electric Company). CEC data show that electricity generation, residential use, and industrial applications account for over 90 % of the natural gas use in the state.³ Only a small fraction of California's natural gas is used to produce motor vehicle fuels.⁴

Most natural gas vehicles use CNG fuel. LNG fuel is a cryogenic liquid and has additional storage and safety requirements, as well as additional controls to limit fugitive methane

³ California Energy Commission Energy Almanac website California Energy Commission Energy Almanac website, *Supply and Demand of Natural Gas in California*, http://www.energy.ca.gov/almanac/naturalgas_data/overview.html, accessed 1/5/2017.

⁴ California Energy Commission Energy Almanac website, *Transportation Natural Gas in California*, http://www.energy.ca.gov/almanac/transportation_data/cng-lng.html accessed 2/17/2017.

emissions. Because of these factors, there is limited availability of LNG fuel in many parts of the state.

It is important to distinguish pipeline natural gas from natural gas motor vehicle fuel. Pipeline gas is low-pressure natural gas that must be transformed before it can be delivered to a natural gas vehicle as fuel. Natural gas motor vehicle fuel differs from pipeline gas in both its chemical and physical properties. It is manufactured from pipeline gas through processing that includes, at a minimum, filtering, drying, and compressing. Other processing such as blending or membrane filtration to further condition raw pipeline gas may be done. Finished CNG fuel is the processed natural gas product, compressed and ready for delivery to a CNG-powered vehicle through an approved dispenser. Finished CNG fuel is typically produced and stored at the point of sale with dedicated equipment owned by the station owner/operator. CNG fuel may also be delivered to a point of sale by tank truck or other specialized vehicle.

Finished LNG fuel is the processed cryogenic natural gas product, liquefied and suitable for delivery to an LNG-powered vehicle through an approved dispenser. Because of the specialized requirements for producing and handling cryogenic liquids, LNG fuel may not be produced at the point of sale. LNG fuel may be delivered to a point of sale by a specialized cryogenic tank truck.

Because natural gas fuels are such a small part of the market for pipeline gas, the CPUC has specifically declined to consider the requirements of CNG engines in setting specifications for pipeline gas. The CPUC rejected a request from the South Coast Air Quality Management District (District) and the Southern California Edison Company (SCE) to include such requirements in its tariffs specifications. Its decision, PUC D0609039, states:

The District and SCE argue for incorporating CARB's CNG specifications into the SDG&E/SoCalGas tariffs. SDG&E/SoCalGas, BHP, Exxon, the Producers, Sempra, and Shell are opposed. We are concerned about the impact that the CARB CNG specifications could have on supply. According to the Producers testimony, only five percent of California production could meet the current CARB CNG specifications. The specific constituent requirements could also limit LNG supplies. The impact on supplies would likely raise costs for all the state's gas consumers. The public benefits that would accompany these costs appear to be quite small. Natural gas vehicles consume only a small fraction of the total volume of gas consumed in the state. Furthermore, the current CARB CNG specifications are only necessary for a small subset of vehicles within the current natural gas vehicle fleet. Therefore, we do not adopt the CARB CNG specifications as part of the SDG&E/SoCalGas tariff.

Since this decision was published, natural gas motor vehicle fuels have grown very little in relation to the total natural gas market in California. The CPUC has not reconsidered this issue and the Department believes that it would find no reason to change its previous decision.

Natural gas-powered vehicles may also be fueled by tank trucks equipped with nozzles for dispensing fuel into the vehicle's storage tank.

BPC § 13400 (p) defines "motor vehicle fuel" as follows:

"Motor vehicle fuel" means an engine fuel intended for consumption in, including, but not limited to, an internal combustion engine, fuel cell, or electric motor to produce power to self-propel a vehicle designed for transporting persons or property on a public street or highway.

Pipeline gas is sold for applications such as water heaters and other residential appliances and for use in stationary engines for power generation or industrial applications. Pipeline gas cannot be delivered to the on-board storage reservoir of a vehicle powered by natural gas fuel. It must be transformed before it is usable as a motor vehicle fuel. Therefore, pipeline natural gas does not meet the statutory definition of "motor vehicle fuel" in BPC §13400(p) and so is not a motor vehicle fuel.

This distinction is made in the tariffs of the three major gas utilities. PG&E GAS SCHEDULE G-NGV1⁵ CORE NATURAL GAS SERVICE FOR COMPRESSION ON CUSTOMERS' PREMISES states under 'APPLICABILITY':

"Service is primarily for uncompressed natural gas for the purpose of compressing it for use as a motor vehicle fuel. Compression of natural gas to the pressure required for its use as motor-vehicle fuel will be performed by the Customer's equipment at the Customer's designated premises only."

The SCHEDULE G-NGC tariff for both SoCalGas⁶ and SDG&E⁷ contain the following language:

Compression of natural gas to the pressure required for its use as motor-vehicle fuel will be performed by the customer's equipment at the customer's designated premises.

These provisions make clear that the utility customers are the producers of CNG fuel at their points of sale. The utilities supply only low-pressure pipeline gas that must be transformed before it meets the statutory definition of 'motor vehicle fuel' in BPC § 13400 (p).

As noted above, pipeline gas quality is regulated solely by the CPUC. The composition of pipeline gas that meets CPUC specifications may not be suitable for use in all natural gas-powered vehicles. In particular, the latest technology for heavy-duty engines such as

⁵ PG&E GAS SCHEDULE G-NGV1 Cal. P.U.C. Sheet No. 33185-G filed January 25, 2017.

⁶ SoCalGas Schedule No. G-NGV NATURAL GAS SERVICE FOR MOTOR VEHICLES Cal. P.U.C. Sheet No. 53729-G filed February 8, 2017.

⁷ SDG&E Schedule No. G-NGV NATURAL GAS SERVICE FOR MOTOR VEHICLES Cal. P.U.C. Sheet No. 22441-G filed February 7, 2017.

the Cummins-Westport ISL-G require higher methane content than is found in some pipeline gas.

CPUC tariffs recognize that some applications of pipeline gas require specifications more stringent than its requirements for pipeline gas. Gas Rule No. 2 Description of Service, included in the tariffs of each of California's major natural gas utilities, specifically makes utility customers responsible for ensuring the fitness of purpose of natural gas products sold for such applications. Natural gas fuels are examples of such applications. Gas Rule No. 2 states:

From PG&E Cal. P.U.C. Sheet No. 23062-G filed March 21, 2005:

... Customers using gas supplied by PG&E for processes that are affected by impurities in excess of specified minimum levels are responsible for testing gas supplied and for rendering the gas suitable for their intended uses.

Except as provided in this Rule, the utility makes no warranties as to the nature, composition, or properties of the natural gas supplied, and the obligations set forth in this Rule are exclusive and in lieu of all other warranties, guaranties, or liabilities, express or implied, arising by law or otherwise (including without limitation any obligations of the utility with respect to fitness, merchantability [sic], and consequential damages).

From SDGE Cal. P.U.C. Sheet No. 19179-G filed January 19, 2012 and SoCalGas Cal. P.U.C. Sheet No. 45832-G filed February 26, 2010:

... Customers using gas supplied by this Utility for processes which are affected by impurities in excess of specified minimum levels are responsible for testing gas supplied and for rendering the gas suitable for their intended uses. Customers using gas supplied by this Utility should also take reasonable steps to prevent Odorant Fade, as defined in Rule No. 1, that may result in Consumer Equipment, as defined in Rule No. 1. This requirement does not apply to Odorant Fade occurring upstream of Consumer Equipment.

EXCEPT AS PROVIDED IN THIS RULE, THE UTILITY MAKES NO WARRANTIES AS TO THE NATURE, COMPOSITION OR PROPERTIES OF THE NATURAL GAS SUPPLIED AND THE OBLIGATIONS SET FORTH IN THIS RULE ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, GUARANTIES OR LIABILITIES, EXPRESS OR IMPLIED, ARISING BY LAW OR OTHERWISE (INCLUDING WITHOUT LIMITATION ANY OBLIGATIONS OF THE UTILITY WITH RESPECT TO FITNESS, MERCHANTABILITY, CONSEQUENTIAL DAMAGES, AND WARNINGS INCLUDING THOSE RELATED TO ODORANT FADE IN CONSUMER EQUIPMENT).

OVERVIEW OF NATURAL GAS MOTOR VEHICLE FUELS

Natural gas is a combustible mixture consisting mainly of simple hydrocarbon gases. When burned, natural gas is a valuable source of energy for many applications, including motor vehicle fuel.

The chemical composition of natural gas can be highly variable. The primary component of is methane. Depending on the source and treatment, the methane concentration in pipeline natural gas in California can range from below 80 to over 97 mole percent. Other simple aliphatic hydrocarbons such as ethane, propane, and butanes are also present in pipeline gas.

Natural gas also contains various other minor components in concentrations ranging from parts per million (PPM) to a few percent. These include compounds such as water, nitrogen, oxygen, carbon monoxide, and carbon dioxide. These minor components may affect the performance of a natural gas mixture for particular applications by changing the combustion properties.

According to recent data from the California Energy Commission (CEC), roughly 90% of the state's natural gas supply is imported.⁸ This imported gas generally has a very high concentration of methane, with correspondingly low levels of heavier hydrocarbons. Most of the in-state production is associated gas, that is, natural gas produced from fields associated with oil fields. Associated gas contains natural gas liquids (NGLs), or hydrocarbons heavier than methane. NGLs increase the energy content of associated gas, which is also called "hot" gas or "wet" gas.

Natural gas fuels offer public health and environmental benefits compared to diesel and gasoline. Natural gas vehicles produce about 30 % lower CO₂ emissions than gasoline or diesel vehicles. Natural gas vehicles also emit reduced levels of ozone precursors and very low levels of particulate pollution. Most of the particulate emissions from natural gas engines arise from small amount of engine lubricants that reach the combustion chamber.

The South Coast Air Quality Management District (SCAQMD) has adopted regulations requiring fleet owners to replace diesel trucks and transit buses, and vocational vehicles with cleaner alternative fuel vehicles. CNG and LNG vehicles meet the requirements of these regulations. Many school districts and waste and recycling haulers in southern California have converted parts or all of their vehicle fleets to CNG fuel.

NATURAL GAS MOTOR VEHICLE FUEL QUALITY

An appropriate metric for fuel quality is essential for oversight and regulation. A clear and transparent measure of quality protects both buyers and sellers as an indicator of value. The quality of a motor vehicle fuel affects vehicle performance and mileage, engine durability, and tailpipe emissions of toxic and climate pollutants. Vehicle engines and

⁸ California Energy Commission website, *Supply and Demand of Natural Gas in California*, http://www.energy.ca.gov/almanac/naturalgas_data/overview.html accessed January 5, 2017.

emissions systems are designed and certified based on a set of fuel quality specifications. Manufacturers design engines and vehicles to meet both customer expectations and state and federal requirements.

The inherently variable composition of pipeline gas poses challenges for control of CNG fuel quality, especially in southern California. Varying amounts of non-methane hydrocarbons are present in “hot” gas produced locally in southern California from wells associated with oil production. These hydrocarbons add energy content to natural gas fuels. However, they have combustion properties that can lead to engine knock if concentrations are too high. Engine knock can lead to reduced performance and engine damage. Modern engine control systems can adjust the operating conditions of a CNG engine to reduce knock when operating on hot gas. This may avoid the engine damage suffered by older engines operating with hot gas. However, this adjustment may also reduce vehicle power and mileage and increase tailpipe emissions.

LNG fuel has less variation in composition than CNG when it is produced. Most of the minor components of pipeline natural gas are in the process of liquefaction removed before the gas is liquefied. However, the composition and quality of LNG fuel may change with long storage times.

There are two general approaches to characterizing natural gas fuel quality. The first is prescriptive, based on the compositional profile, with minimum and maximum limits set for specified components. The second approach is performance-based, using a parameter called the methane number (MN) as a measure of the combustion properties of a fuel mixture. The MN is a measure of the tendency of a natural gas fuel to cause engine knock. The MN is thus analogous to the octane rating of gasoline. Engine knock adversely affects vehicle performance and can cause engine damage and even premature failure.

The chemical composition of a natural gas fuel can be readily determined by gas chromatographic analysis using established methods with a high degree of precision and accuracy. It is possible to determine the MN of a fuel sample experimentally using a special natural gas test engine. However, only a handful of these expensive engines exist and their use requires considerable training and skill. In addition, these engines are not standardized in design, so results can vary from one engine to another. This means that the direct measurement of MN is not practical for the regulation of fuel quality.

As an alternative, various mathematical models to calculate MN from natural gas composition have been developed. Some of the earliest work was done at AVL⁹ in the 1970s. The proprietary AVL method has been refined and is in widespread use in Europe. A related algorithm was developed by SAE International and is used by CARB. The SAE/CARB method does not account for the effects of the inert gases N₂ and CO₂. More

⁹ Anstalt für Verbrennungskraftmaschinen (AVL) is the successor company to Ingenieurbüro List (List Engineering), which was founded by Hans List in 1946.

recently, engine manufacturer MWM¹⁰ developed an algorithm that does account for these inerts. MWM has made its algorithm (the MWM method) freely available. It is the method used in the European standard for natural gas fuel, CEN EN16726 standard “Gas infrastructure - Quality of gas - Group H”. The MWM method calculator is available for download at no charge at http://euromot.org/media_and_events/publications/mn.

SCOPE OF THE PROPOSED REGULATION

BPC § 12011. defines “person” to include a firm, corporation, or association.

BPC § 13404. (a) The sale of compressed natural gas by persons who sell compressed natural gas at retail to the public for use only as a motor vehicle fuel, and who are exempted from public utility status by subdivision (f) of Section 216 of the Public Utilities Code, is a sale of a motor fuel for the purposes of this chapter.

When adopted, the proposed regulation will apply to all commercial sales of natural gas fuels subject to the authority of the Department. Attorney General’s opinion SO 77-13, November 22, 1977 holds that the Department does not have jurisdiction over the sales and commercial devices of a public entity. This means that the proposed labeling regulation would not apply to natural gas fueling stations owned and operated by counties, cities, school districts, public transit and waste management districts, publically regulated utilities, and other such entities.

The proposed dispenser labeling regulation would apply to commercial sales of natural gas fuels by a station owned by a public entity but operated by a private firm, corporation, or association.

The proposed natural gas fuel quality regulation is an interim standard as authorized in BPC § 13446. If a consensus national standard is published by either SAE International or ASTM International, §13446 requires the Department to adopt it by reference, “except that no specification shall be less stringent than required by any California state law.”

BENEFITS OF THE PROPOSED REGULATION

The proposed regulation is intended to support continued expansion of CNG and LNG fuels in California. Californians will benefit from the increased use of CNG and LNG motor vehicles. Natural gas fuels are a low-carbon alternative fuel with significantly lower toxic and GHG emissions than traditional petroleum fuels. The growth of CNG and LNG fuels throughout the state will promote California’s goals of improved air quality, public health, and energy independence. Natural gas can be produced from agricultural waste and other biomass. As a carbon-neutral transportation fuel, renewable CNG may help meet California’s biofuel production mandate and low carbon fuel standard.

¹⁰ MWM, originally named Motorenwerke Mannheim, was acquired by Caterpillar in 2011.

These proposed regulatory changes to CCR Title 4 Division 9 Chapter 1 and Chapter 7 are intended to interpret and make specific the recent statutory changes incorporated under AB 1907 and AB 808. This will provide fuel purchasers with consistent and easily understandable unit pricing of CNG and LNG motor vehicle fuels that allows direct comparison with the prices per gallon of gasoline or diesel fuel. Provided with this information, consumers will be better able to make informed value comparisons in both vehicle and fuel purchasing decision.

This regulation is also intended to clarify the Department's authority to sample natural gas engine fuels and test the quality of these fuels. This testing will ensure that CNG and LNG fuels will not impair engine performance and durability or result in excessive tailpipe emissions. Fuel meeting minimum quality and performance standards helps to prevent engine damage that may result in costly repairs. Finally, fuel quality standards help ensure that tailpipe emissions are within applicable limits.

ECONOMIC IMPACT ASSESSMENT/ANALYSIS

Currently, natural gas is sold at retail as a motor vehicle fuel in California on a limited but increasing basis. The volume of CNG and LNG fuels sold does not significantly impact the volume of conventional liquid petroleum fuels sold. In its *2015 Integrated Energy Policy Report*¹¹, the California Energy Commission forecast a growth of more than 20 percent in natural gas demand in the transportation sector over the next five years. However, CNG and LNG sales are not expected to have any negative impact on the businesses selling gasoline and diesel fuels. Even with the anticipated growth, the total volume of natural gas fuels will remain a small fraction of the state's overall fuel mix.

As demand and production of CNG and LNG fuels continue to increase, existing fuel retailers will have the opportunity to expand into the natural gas fuel market. New stand-alone natural gas fueling stations may also be built. The growth of natural gas infrastructure will increase demand for registered service agencies working with natural gas fuel dispensers. As natural gas refueling infrastructure expands, dealers of natural gas-fueled vehicles may benefit from increased demand. Dealers of conventionally fueled vehicles may expand their offerings to include natural gas-fueled cars and trucks.

The anticipated economic impact on existing natural gas fuel retailers of the proposed amendments to each chapter of the CCR will be considered separately.

Chapter 1 Tolerances and Specifications for Commercial Weighing and Measuring Devices:

The proposed changes to CCR Title 4 Division 9 Chapter 1 are technical amendments to existing regulation that are required for compliance with AB 1907 (Ridley-Thomas,

¹¹ California Energy Commission *2015 Integrated Energy Policy Report*, Figure 26, page 115, CEC-100-2015-CMF.

Statutes of 2014, Chapter 805). These changes do not impose any costs on California businesses.

Chapter 7 Advertising of Gasoline and Other Motor Vehicle Fuels:

The proposed labeling regulation in CCR Title 4 Division 9 Chapter 7, along with existing state and Federal law, require posting of three labels on each customer side of natural gas fuel dispensers.

1) Natural gas fuel retailers are already required to post the minimum methane concentration of their fuels on dispensers by Federal Trade Commission (FTC) 16 CFR Parts 306 and 309. Many CNG dispensers in California do not currently do not currently comply with the FTC rules. The proposed regulation in § 4207 incorporating the FTC rules by reference does not create a new economic impact.

2) AB 1907 (Ridley-Thomas, Statutes of 2014, Chapter 805) requires CNG and LNG fuel dispensers be labelled with their respective methods of sale, "Gasoline Gallon Equivalent" and "Diesel Gallon Equivalent". AB 1907 defines these terms as 5.66 pounds and 6.06 pounds of natural gas, respectively. The proposed regulation in § 4206 (c) and (d) implements the statutory requirement and also provide the statutory definition of "Gasoline Gallon Equivalent" or "Diesel Gallon Equivalent" for fuel buyers who may not understand the meaning of these terms.

Although AB1907 was enacted in 2014, many natural gas fuel dispensers inspected by the Department do not comply with its requirements. For these dispensers, the proposed regulation § 4206 does not create a new economic impact. Retailers whose dispensers do comply with AB 1907, but do not include the definitions of gasoline or diesel gallon equivalent will need to obtain an additional label for each dispenser.

3) The proposed regulation in § 4206 (b) creates a new requirement for a label on each dispenser stating the minimum MWM method methane number of the fuel.

The Department believes that these labeling requirements do not impose a significant economic impact on fuel retailers. They represent a one-time cost comparable to that associated with the labeling required on gasoline dispensers. The dispenser stickers are widely available at low cost, both on-line and from brick-and-mortar printing shops. The Department believes that the minimal new cost to comply with § 4206 (b) is offset by the value of the information of fuel quality provided to consumers. The other two labeling requirements are in existing law. They are not new economic impacts resulting from the proposed regulation in § 4206.

Chapter 6 Automotive Product Specifications:

The Department believes that the proposed compositional fuel quality requirements CCR Division 9 Chapter 6 would not have a significant economic impact on most California natural gas fuel stations. The Department believes that all LNG stations will meet the proposed specifications. As discussed above, information from the CEC and CARB shows that approximately 90% of the pipeline gas throughout the state meets the proposed requirements. The Department believes that this includes all of the service area of PG&E. Therefore, there will be no impact on existing CNG stations in northern California, as well as areas in central California such as Bakersfield served by PG&E.

The Department recognizes that there may be some impact on the existing CNG stations in southern California served by SoCalGas and SDGE. At the public hearing held August 11, 2016, May Lew, Principal Engineer for SoCal Gas, testified that 24 stations in twelve SoCalGas BTU districts could not consistently meet the a specification of minimum methane number 75 as calculated by the MWM method. These stations represent approximately 10% of CNG stations statewide. The latest proposed prescriptive fuel quality specification is roughly comparable to a minimum methane number 75. Therefore, the Department believes that these 24 stations cited by Ms. Lew are a reasonable estimate of the number of stations served by SoCalGas that currently may not meet the proposed quality specification. The Department is aware of over thirty existing CNG stations in the service area of SDGE. Some of these may also not consistently meet the proposed specification. While the Department recognizes that there could possibly be a significant impact on an individual station because of the proposed fuel quality regulation, the total statewide impact is limited.

To fully analyze the economic impact, if any, on an individual station, the Department would require data on the composition of pipeline gas delivered to that station, as well as the proportion of retail and contract sales of its business. CARB has collected compositional pipeline data over several years. However, this data is considered confidential business information. None of this data has been made available to the Department even in a redacted format. Therefore, the Department cannot reliably calculate the economic costs that would likely be incurred by vehicle owners and operators currently purchasing CNG and LNG at specific stations in any specific region.

There are several options available to retail CNG stations that cannot meet the proposed fuel quality specifications. Mobile refueling trucks or refueling pods dispensing CNG fuel meeting the specifications can be located at existing stations to provide compliant fuel.

Station operators in the SoCalGas service area may also choose to condition the pipeline gas they buy so that the natural gas fuel they produce for sale will meet the proposed quality specifications. This might be accomplished by the removal of excess levels of heavy hydrocarbons or by blending with high purity methane to raise the methane concentration in the finished fuel. Blending has been used in the past in the SoCalGas service area to address problems with hot pipeline gas in specific locations. This blending

is discussed in the Initial Statement of Reasons prepared by CARB staff for the proposed 2002 Rulemaking *Proposed Amendments to the Compressed Natural Gas and Liquefied Petroleum Gas Specifications in the Alternative Fuels for Motor Vehicle Regulations*.¹² Biomethane, which has a high methane concentration, is increasingly available throughout California and could be used for blending in some locations.

Cost estimates for conditioning equipment to remove heavy hydrocarbons from pipeline gas have been received by the Department from two established companies. Edmond Loh of EML Manufacturing, LLC, estimated the cost of the equipment alone would be in the range \$40 – \$70,000 depending on the flow rate requirements. There would be additional site preparation, permitting and installation costs estimated between \$25 and \$40,000. Kaaeid Lokhandwala, of Membrane Technology and Research, Inc., estimated a minimum installed cost of \$100,000 for the company's membrane separation technology. During the first public comment period for this rulemaking, some stakeholders stated that the Department's estimated cost for installed conditioning equipment is low. However, none has offered an alternate amount and so the Department stands by its estimate.

The Department recognizes that these options may not be economically feasible for every station receiving non-compliant fuel. CNG stations that cannot implement one of the above strategies by the effective date of the fuel quality specifications may apply to the Department for a developmental engine fuel variance. The Department does not charge any fees for a developmental engine fuel variance. Each station applying for a developmental engine fuel variance will incur minor one-time costs for the application process and on-going costs for reporting requirements of the variance. These reporting requirements depend on the specific terms and conditions of a station's variance. Based on its experience with developmental engine fuel variances for other motor vehicle fuels, the Department believes that the reporting requirements will not be unduly burdensome to the affected stations.

The Department recognizes that CNG stations are not evenly distributed throughout the state. There are dozens of stations in the Los Angeles area. In less densely populated areas, retail stations may be 50 miles or more apart. Private individual and small business customers of an isolated station could suffer serious economic harm if they were to lose access to their one source of CNG fuel. Stations located at the junction of two or more state highways may also provide essential refueling services to vehicles moving through an area.

In adopting the proposed interim fuel quality specification, the Department is committed to working with individual stations to maintain service to their customer base. The proposed effective date of July 1, 2018 will allow the Department to conduct a survey to

¹² CARB staff Lesley E. Crowell, Cherir M. Cotter, Kim K. Nguyen, and Victoria E. Davis, Initial Statement of Reasons 2002 Rulemaking *Proposed Amendments to the Compressed Natural Gas and Liquefied Petroleum Gas Specifications in the Alternative Fuels for Motor Vehicle Regulations*, pages I-1 and I-4.

identify stations and customers that could be adversely impacted. The Department will then work with each of these stations to establish terms and conditions of a developmental engine fuel variance that will minimize adverse economic impacts on both the station owner/operator and the customer.

Depending on the results of this survey, the Department may consider future amendments to the proposed fuel quality specifications to reduce impacts that cannot be otherwise mitigated.

ESTIMATED COST OR SAVINGS TO THE PUBLIC AGENCIES OR AFFECTED INDIVIDUALS OR ENTITIES

1. Public Agencies

There is no immediate cost or savings to the Department or county weights and measures offices associated with the adoption of this regulation.

2. Natural Gas Retailers

As discussed above in the economic impact assessment section of this document, existing businesses offering CNG or LNG for commercial sale or distributing natural gas fuels with supplied natural gas not meeting the proposed specifications may incur costs to ensure their product meets the proposed fuel quality specification. Impacted retailers may apply to the Department for a developmental engine fuel variance to mitigate these costs.

The Department concludes that the proposed regulation: (1) may create new jobs within California; (2) may create new businesses within California; (3) may affect the expansion of businesses currently doing business within California; and (4) is unlikely to eliminate any jobs or existing businesses. The Department estimates that between one and 10 new businesses in the RSA and engine mechanics sectors could be created as a result of increasing use of CNG and LNG fuels. These new businesses could add between 10 and 100 new jobs.

PURPOSE OF THE PROPOSED REGULATION

The proposed regulation is intended to: 1) Amend the Department's regulations in CCR Chapter 1 Article 1 §§ 4001 and 4002 to conform to the language of AB 1907; 2) inform and protect consumers by ensuring that CNG and LNG motor vehicle fuels offered for sale in the state meet minimum quality and performance standards; 3) clarify and apply the motor vehicle fuel labeling and advertising requirements established by AB 1907 for CNG and LNG; and 4) provide a transparent marketplace and level playing field for natural gas motor vehicle fuel retailers.

Natural gas fuels not meeting minimum quality standards adversely affect the performance, efficiency, and durability of vehicles. Poor quality natural gas may also

cause increased emissions of toxic chemicals and short-lived climate pollutants. The proposed regulation is intended to establish an interim fuel quality standard that protects public and environmental health and ensure that natural gas–fueled vehicles can meet manufacturers’ specifications for performance and durability.

SPECIFIC PURPOSE AND RATIONALE FOR EACH REGULATORY PROVISION

Amend CCR Chapter 1, Article 1, § 4001. Exceptions.

BPC Chapter 2, § 12107 authorizes the Department to modify, amend, or reject by regulation the requirements in NIST Handbook 44. The proposed regulation rejects the sections of NIST Handbook 44 listed below in order to comply with the provisions of AB 1907.

The Department proposes to add the following rejected sections from NIST Handbook 44 to the list found in § 4001 Exceptions:

S.1.2. Compressed Natural Gas Dispensers. The Department proposes that this requirement be removed. The Mass Flow Meters code in NIST Handbook 44 does not include LNG as a natural gas motor vehicle fuel that is currently recognized in BPC § 13404(c).

S.1.3.1.1. Compressed Natural Gas Used as an Engine Fuel. The Department proposes that this requirement be removed. NIST Handbook 44 recognizes *both* U.S. customary units (gasoline gallon equivalent units) and metric units (gasoline liter equivalent units), but BPC § 13404(b) mandates using only U.S. customary units in California.

S.5.2. Marking of Gasoline Volume Equivalent Conversion Factors for Compressed Natural Gas. The Department proposes that this requirement be removed. NIST Handbook 44 lists 5.660 lb as the conversion factor for natural gas to one GGE, but the language in BPC § 13404(b) mandates 5.66 lb as the conversion factor for one GGE in California.

UR.3.8. Return of Product to Storage, Retail Compressed Natural Gas Dispensers. The Department proposes that this requirement be removed. NIST Handbook 44 only addresses CNG (and not LNG) in the return of product to storage.

Appendix D. Definitions. *gasoline gallon equivalent (GGE)*. The Department proposes that this definition be removed. NIST Handbook 44 lists 5.660 lb per GGE, whereas AB 1907 mandates 5.66 lb per GGE.

Appendix D. Definitions. *gasoline liter equivalent (GLE)*. The Department proposes that this definition be removed. NIST Handbook 44 recognizes both U.S. Customary and SI (metric) units but AB 1907 does not authorize the sale of compressed natural gas in SI units (liters).

Amend CCR, Chapter 1, Article 1, National Uniformity, Exceptions and Additions.
§ 4002. Additional Requirements

BPC § 12107 of the Business and Professions Code provides for the Department to modify, amend, or reject by regulation the requirements in NIST Handbook 44. The regulation adds or replaces the sections listed below in order for the Department to comply with the provisions of BPC § 13404.

The Department proposes to amend Chapter 1, Article 1, § 4002 by adding the following subsection 4002.10. Mass Flow Meters (3.37) to the list found in § 4002 to comply with BPC § 13404:

S.1.2. Compressed Natural Gas Dispensers. The Department proposes that this requirement be added to replace NIST Handbook 44 Paragraph S.1.2., to include CNG and LNG price computing and mass display requirements.

S.1.3. Liquefied Natural Gas Used as an Engine Fuel. The Department proposes to add Paragraph S.1.3.1.2. to include the diesel gallon equivalent units of measure that is not part of NIST Handbook 44.

S.5.2. Marking of Gasoline Volume Equivalent Conversion Factors for Compressed Natural Gas. The Department proposes that this Paragraph be added to replace NIST Handbook 44 Paragraph S.1.2. to include CNG gasoline gallon equivalent conversion rate.

S.5.3. Marking of Diesel Volume Equivalent Conversion Factors for Liquefied Natural Gas. The Department proposes that Paragraph S.5.3. be added to include the LNG diesel gallon equivalent conversion factor, which is not currently part of NIST Handbook 44.

UR.3.1.1. Marking of Equivalent Conversion Factors for Compressed Natural Gas. The Department proposes that Paragraph UR.3.1.1. be added to include that the retailer is responsible to ensure that the necessary required CNG conversion factor statement is marked on the dispenser.

UR.3.1.2. Marking of Equivalent Conversion Factors for Liquefied Natural Gas. The Department proposes that Paragraph UR.3.1.2. be added to include that the retailer is responsible to ensure that the required LNG conversion factor statement is marked on the dispenser.

UR.3.8. Return of Product to Storage, Retail Compressed Natural Gas Dispensers. The Department proposes to adopt a new paragraph that is not part of NIST Handbook 44, since LNG is not referenced in NIST Handbook 44.

Appendix D. Definitions. *diesel gallon equivalent (DGE)*. The Department proposes to adopt a new section that is not part of NIST Handbook 44. The Department proposes to recognize the diesel gallon unit of measure and conversion rate mandated by AB 1907.

Appendix D. Definitions. *gasoline gallon equivalent (GGE)*. The Department proposes that this definition be added to replace the conflicting definition NIST Handbook 44. This addition is necessary because AB 1907 mandates 5.66 lb per one (1) GGE, instead of the 5.660 lb per one (1) GGE currently specified in NIST Handbook 44.

Chapter 6. Automotive Products Specifications, Article 10. Specifications for Natural Gas Used as a Motor Vehicle Fuel.

BPC § 13446 establishes the authority of the Department to establish interim specifications for alternative motor vehicle fuels until a standards development organization accredited by the American National Standards Institute (ANSI) such as ASTM or SAE formally adopts a standard for the fuel for use in motor vehicles. Neither ASTM nor SAE have published specifications for natural gas fuels. CARB has adopted a regulation for CNG fuel quality; however, by policy, it does not enforce this regulation in southern California. There is currently no regulation for LNG fuel quality in California.

The Department proposes to add Article 10 Sections 4192 and 4193 to comply with BPC § 13404:

New § 4192. Definitions Used in This Article. The Department proposes to define the terminology used in Chapter 6 by adding eight definitions related to natural gas motor vehicle fuels that are necessary to clarify the specific meaning of terms used in Article 10.

New § 4193. Specifications for Natural Gas Used in Internal Combustion Engines. Because no ANSI-accredited standards development organization has published specifications for natural gas motor vehicle fuels, the Department proposes to adopt a new section that establishes interim fuel quality specifications for commercial sales of natural gas motor vehicle fuel.

Chapter 7. Advertising of Gasoline and Other Motor Vehicle Fuels.

BPC §13404.5 requires that, “The secretary shall establish the method of sale of motor vehicle fuels and lubricants sold at retail to the public. In doing so, the secretary shall adopt, by reference, the latest method of sale for motor vehicle fuels and lubricants adopted by the National Conference on Weights and Measures and published in the National Institute of Standards and Technology Handbook 130 “Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality,” except as specifically provided by the Legislature or modified, amended, or rejected by regulations adopted by the secretary.”

The Department proposes to amend Chapter 7 as follows to conform to the requirements of BPC §13404.5 and AB 1907:

§ 4200. Advertising Medium. The Department proposes to amend this section to correct incorrect references to the BPC in the Authority and Reference cited section.

§ 4201. Price Sign Display on Dispensing Apparatus. The Department proposes to amend this section, which is necessary to clarify that GGE and DGE units of measure must be displayed on retail dispensers for the sale of natural gas to the public as required by AB 1907.

New § 4206. Labeling and Price Sign Advertising Requirements for Compressed Natural Gas and Liquefied Natural Gas. The Department proposes to add this section to: 1) require the display on natural gas fuel dispensers of the minimum methane number of the fuel offered for sale; 2) require the display on natural gas fuel dispensers of the minimum percent methane of the fuel offered for sale; and 3) to ensure that labeling of natural gas fuel dispensers conforms with the language required by AB1907.

NECESSITY OF THE PROPOSED REGULATION

BPC § 12107 of the BPC requires the Department to adopt by reference, the latest standards in NIST Handbook 44 except as specifically modified, amended, or rejected by regulation. To be consistent with amended BPC § 13404, it is necessary for the Department to amend CCR § 4001 in NIST Handbook 44, 3.37. Mass Flow Meters, to add the prescribed legal units for sale.

There are currently no ASTM or SAE specifications for natural gas motor vehicle fuels. However, BPC § 13446 provides authority for the Department to establish interim specifications for alternative fuel such as natural gas until a standards development organization accredited by ANSI, such as ASTM or SAE, formally adopts a standard for the fuel for use in motor vehicles. The use of CNG fuel continues to expand throughout the state without effective oversight and regulation. Regulation is required to protect consumers and provide transparency, consistency, and balance in the marketplace.

BPC § 13404.5 requires the Department to adopt, by reference, the latest method of sale for motor vehicle fuels and lubricants adopted by NCWM and published in NIST Handbook 130 *Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality* (Handbook 130), except as specifically provided by the Legislature. Recently, AB 1907 established GGE and DGE as the method of sale in California for CNG and LNG, respectively. NIST Handbook 130 allows other methods of sale for both CNG and LNG. Regulatory action is needed to implement the mandated methods of sale for natural gas motor vehicle fuels specified by AB 1907.

CCR, Title 4, Division 9, Chapter 7 establishes requirements for the dispenser labeling and advertising of retail motor vehicle fuels. Regulatory action is needed to add a section applicable to natural gas fuels to Chapter 7.

ESTIMATED COST OR SAVINGS TO PUBLIC AGENCIES OR AFFECTED PRIVATE INDIVIDUALS OR ENTITIES

There are minimal immediate costs to the Department associated with the adoption of the proposed fuel quality specifications. The Division would be required to obtain specialized sampling equipment to collect natural gas fuel samples at retail dispensers. Two sampling apparatus would be required, one for the Sacramento laboratory and one for the Anaheim laboratory. The Department estimates the cost of this equipment to be roughly \$20,000 each, for a total cost of \$40,000

The Department can accommodate the anticipated costs of initial sampling and testing with existing resources. As the number of retail CNG and LNG locations is expected to grow slowly over the near term, there will not be a significant increase in the cost to the Department for inspection or enforcement activities.

The Department has initially determined that the proposed regulations:

- Will not impose a mandate on local agencies or school districts.
- Will not result in any cost or savings to any other state agency.
- Will not result in any reimbursable costs or savings under Part 7 (commencing with Section 17500) of Division 4 of the Government Code to local agencies or school districts.
- Will not result in any nondiscretionary costs or savings to local agencies or school districts.
- Will not result in any cost or savings in federal funding to the state.

The Department has made an initial determination that the action will not have a significant statewide adverse economic impact on housing costs or on California businesses, including the ability of California businesses to compete with businesses in other states.

REASONABLE ALTERNATIVES TO THE REGULATIONS AND THE AGENCY'S REASONS FOR REJECTING THOSE ALTERNATIVES

Alternatives Considered for Proposed Changes to Title 4, Division 9, Chapter 1, Article 1, National Uniformity, Exceptions And Additions

The Department has determined that there is not a reasonable alternative to the proposed changes to CCR Title 4, Division 9, Article 1, Chapter 1, Part 3, Section 3.37. Mass Flow Meters and Article 1, Chapter 1, Part 7, NIST Handbook 44, Appendix D Definitions. These changes are necessary to bring existing regulation into compliance with the statutory changes to BPC § 13404 made by AB 1907.

Alternatives Considered for Proposed Addition of CCR Title 4, Division 9, Chapter 6, Article 10. Specifications For Natural Gas Used in Internal Combustion Engines.

Based on information gathered through its pre-rulemaking workshop and three follow-up webinars, as well as comments received from stakeholders, the Department believes that the proposed quality specifications in sections 4193 of Article 10 are the most cost-effective and least burdensome solution available that will protect consumers from substandard fuel.

Alternative 1 – Do nothing:

The Department has determined that doing nothing is not a reasonable alternative to adopting fuel quality specifications for natural gas motor vehicle fuels. AB 808 amended BPC § 13531 to exempt natural gas sales from certain street advertising and other requirements. However, these amendments did not remove the requirements for fuel quality regulation. BPC §§ 13440 (i) and 13446 make clear the legislative intent to regulate natural gas fuels. When no standards have been developed by a recognized consensus organization such as ASTM International or SAE International, BPC § authorizes the Department to adopt its own interim standard for alternative fuels, including CNG and LNG. To date, no such consensus organization standards have been published for natural gas fuels.

All commercial motor vehicle fuels except CNG and LNG are subject to quality standards in California. The Department must treat all fuels on an equal basis to provide clear information to fuel purchasers and to guard against substandard fuels in the marketplace.

Vehicles equipped with new CNG engine technology with very low toxic tailpipe emissions are now available. Manufacturers have specified minimum fuel quality requirements for these engines. Fuel purchasers need information on fuel quality to make informed purchasing decisions. The Department believes that it is in the best interests of the state to maintain equity in the regulation of motor vehicle fuels by adopting interim quality specifications for CNG and LNG motor vehicle fuels. Therefore, the Department rejects the “Do nothing” option.

Alternative 2 – Adopt a natural gas fuel quality specification of minimum MWM method methane number 75.

The Department believes that specifying natural gas fuel quality using the methane number is the best approach. First, this approach is functional and performance-based, not prescriptive. It gives fuel retailers flexibility in adjusting fuel composition. Engine manufacturers currently use methane number to specify requirements for their engines (although several different algorithms are widely used). Finally, a specification of methane number provides consumers with a basis for value comparisons in fuel purchases.

However, BPC §13446 states that the Department may not adopt any specification that is less stringent than CARB’s CCR § 2292.5. The Department first proposed a fuel quality

specification of a minimum methane number of 75 according to the MWM method. The Department believes that this specification is nearly equivalent to the CARB requirements. However, CARB staff have indicated that there are natural gas fuel compositions that have an MWM method methane number 75 but do not meet the minimum methane content of 88% established in CCR § 2292.5. The Department has used the MWM methane number calculator to confirm that such natural gas composition is possible. Three examples are shown on the following page:

MWM MN FOR NATURAL GAS COMPOSITION IN PERCENTAGES								
Methane	Ethane	Propane	C6+	N2	CO2	O2	TOTAL %	MWM MN
87	5.3	2.2	0	1	3.5	1	100	80
87	5.5	1.9	0.1	1	3.5	1	100	76
86	6	2.4	0.1	1.5	3	1	100	76

The Department is not suggesting that these compositions correspond to a natural gas mixtures found in California pipeline gas. The Department does not have access to the confidential business information collected by CARB on the composition of pipeline gas throughout the state. However, these numbers show that a natural gas fuel may have both a methane number greater than 75 and a methane content of less than 88%. The Department must therefore conclude that a minimum MWM method methane number specification of 75 may not be adopted since it is less stringent than existing state law.

Alternative 3 – Adopt a natural gas fuel quality specification of minimum MWM method methane number 80.

A minimum MWM method methane number of 80 would be more stringent than the CARB standard in CCR § 2292.5 and therefore could be adopted. However, the Department believes that such a specification would be unduly restrictive without offering any additional benefit for vehicle performance, durability, or emissions.

Alternatives Considered for Proposed Amendment to CCR Title 4, Division 9, Chapter 7, Section 4200, Advertising Medium.

The Department has determined that there is no reasonable alternative to making correct the authority and references for this section.

Alternatives Considered for Proposed Amendment to CCR Title 4, Division 9, Chapter 7, Section 4201, Price Sign Display on Dispensing Apparatus.

The Department has determined that there is not a reasonable alternative to the proposed amended language for § 4201. This change is required for consistency with BPC § 13470 as amended by AB 1907 and to prevent misleading labeling of natural gas fuel dispensers.

Alternatives Considered for Proposed Addition of CCR Title 4, Division 9, Chapter 7, § 4206 Labeling and Price Sign Advertising Requirements for Compressed Natural Gas and Liquefied Natural Gas.

Alternative 1 – Do nothing.

If the Department chooses to do nothing, there would be no specific or enforceable requirements for the dispenser labeling and price sign advertising of natural gas motor vehicle fuels. The Department believes that regulations for the retail sale of natural gas fuels should be consistent with those that apply to other motor vehicle fuels sold in California. These regulations ensure that retailers provide accurate information to consumers, give buyers a basis for making value comparisons for their purchases, ensure minimum quality and performance specifications, and provide a basis for fair competition among suppliers and retailers. In addition, the proposed regulatory changes are necessary for consistency with BPC § 13470 as amended by AB 1907, which requires CNG and LNG dispensers be labeled with their respective methods of sale, “gasoline gallon equivalent” and “diesel gallon equivalent.”

For these reasons, the Department cannot accept the “Do nothing” alternative.

Alternative 2 – Add § 4206, Labeling and Price Sign Advertising Requirements for Compressed Natural Gas and Liquefied Natural Gas without the requirements as stated in § 4206 subsections (c) and (d) for labeling dispensers with the minimum methane number and minimum percent methane of the fuel offered for sale.

The Department has determined that the minimum methane number and minimum percent methane are key qualities of natural gas fuels, comparable to the specification of an octane rating for gasoline fuel. The posting of these values on fuel dispensers would provide transparency in the sale of natural gas fuels and give buyers a basis for making value comparisons for their purchases without imposing an undue burden on retailers.

Alternatives Considered for Proposed Addition of CCR Title 4, Division 9, Chapter 7, § 4207, Additional Posting and Labeling Requirements for Compressed Natural Gas and Liquefied Natural Gas.

The Department has determined that there is not a reasonable alternative to the proposed additional language for § 4207. All fuels must comply with the Federal Trade Commission (FTC) labeling requirements. FTC regulations 16 CFR 306 and 309 require retailers to post the minimum percentage of the primary component of alternative motor vehicle fuels. The proposed requirement would benefit fuel buyers by giving California weights and measures officials’ clear authority to enforce the FTC regulations as they apply to natural gas fuels. As part of its research to write the proposed regulations, the Department discovered that some natural gas fuel retailers are not complying with the FTC posting requirements.

DUPLICATION OR CONFLICT WITH FEDERAL REGULATIONS

The proposed regulations are not in conflict with any federal regulations contained in the Code of Federal Regulations (CFR). The proposed regulations are not mandated by federal law or regulation.

The proposed regulation incorporates by reference the Federal Trade Commission (FTC) 16 CFR 306 and 309 labeling regulations for alternative fuels. This will provide Department investigators with the authority to enforce these requirements and so ensure that fuel buyers will be informed of the fuel rating of the CNG and LNG offered for sale. For natural gas motor vehicle fuels, the FTC has defined the fuel rating as the percent methane. This fuel rating is an important figure of merit and provides purchasers with a basis for value comparisons.