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Fuel Blending Revisited: Domestic Production Deduction and Excise Tax Considerations

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Fuel blending is the process of combining two or more ingredients to create a consumer-ready motor fuel having materially different chemical properties, uses, and market value. Despite a common misperception, fuel blending is not as simple as pouring crystals into a container and stirring. Fuel blending instead requires considerable training and skill to ensure that the final product is a commercially viable commodity meeting specific operational and regulatory requirements. As such, companies engaged in qualifying fuel blending activities may qualify for the domestic production deduction of section 199. Companies engaged in this activity also need to be mindful of potential federal excise tax liability and penalties, as well as possible excise tax incentives, arising from this production activity.

This article expands upon an earlier What's News in Tax article discussing the application of the domestic production deduction of section 199 to fuel blending. This article includes that earlier discussion, but expands the discussion to include important excise tax considerations of which fuel blenders should be mindful.

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Background of Fuel Blending

Modern combustion engines are engineered to operate using precision fuels containing (among other things) specific octane levels for performance and "oxygenates" to meet federal environmental requirements. Introducing into a vehicle's engine a motor fuel containing an incorrect ratio of the required chemical elements exposes the engine to performance problems and even long-term damage.

To achieve the precise chemical properties required by modern engines, the producers of motor fuels must carefully determine the correct proportions of base fuels and special additives, such as ethanol or other biofuels, required to produce a consumer-ready product. Due to the corrosive and other problematic chemical tendencies of ethanol, however, consumer-ready motor fuels must be produced relatively close to the point of sale, rather than at a central location and transported in bulk through interstate pipelines. As a result, the motor fuels dispensed to consumers generally are produced not at large refineries, but instead in smaller batches either by terminal operators or by retail fuel outlets that purchase the building block ingredients from refineries and biofuel producers and transport those ingredients to the place of final production.

The final stage in the production of motor fuels generally begins at a distribution terminal (sometimes referred to as "the rack"). Terminals may be located either at a refinery, or as stand-alone facilities. Retail fuel outlets, including traditional gas stations, convenience stores, and truck stops, offer a variety of gasoline and diesel fuels to their customers. The retail fuel outlets generally purchase the required fuels from a terminal operator, either as "pre-blend" or "splash-blend."

With respect to pre-blend fuel, the retailer acquires the desired fuel blend directly from the rack at the distribution terminal, with title and risk of loss transferring to the purchaser only after the fuel is properly blended. The retailer is purchasing a consumer-ready product, ready for resale.[1]

Alternatively, the fuel outlet can purchase two or more individual ingredients from the terminal and combine these raw materials through a manufacturing process sometimes referred to as splash blending. In that case, the risk of loss for incorrectly selecting and combining the ingredients and failing to produce a viable final product rests entirely with the fuel outlet.[2]

Unlike the purchase of pre-blend fuel, splash blending requires the fuel outlet to select specific quantities of individual components (e.g., base fuel such as the gasoline blend-stock RBOB or CBOB, ethanol, or other biofuels). The purchased ingredients are metered individually through product flow meters at the rack and loaded separately into a holding vessel such as a stationary holding tank, rail car, or tanker trailer. Due to their being loaded individually (i.e., unblended) and the differing physical and chemical properties of the raw materials, the components will often remain stratified (layered) until

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[1] For purposes of this discussion, "pre-blend" fuel refers to transactions in which the purchaser specifies the desired fuel blend (e.g., E10 or E85), and the terminal operator is responsible for providing the correct ingredients and ratios required to produce the specified fuel. The mixture is fully created before the fuel blend is removed from the distribution terminal.

[2] For purposes of this discussion, "splash blending" refers broadly to any transaction in which the purchaser or its agent is responsible for determining the specific ingredients and ratios required to produce the desired fuel product. The purchaser buys the individual ingredients separately and bears the benefits and burdens of correctly blending the purchased components into its desired product.

they are combined mechanically. This is most commonly achieved through use of a static mixer for stationary tanks or through excitation of non-stationary tanks such as tanker trailers or rail cars. In the most common fact pattern for retail fuel outlets, tanker trailers are used to produce and deliver the finished motor fuel to retail stores, with the mixture process, including any temperature and volumetric changes, producing the new fuel from the individual ingredients occurring in transit.

The primary difference between pre-blend and splash-blend fuels relates to which party (i.e., the distribution terminal or the retail fuel outlet) owns the base fuels, ethanol, or other blended ingredients during the manufacturing process, and which party has the risk of loss if the process fails to result in the desired end product.

Section 199

Section 199 provides a domestic production deduction ("DPD") computed (roughly) as a percentage of the lower of the taxpayer's net income from qualifying production activities occurring in the United States or its taxable income for the year.[3] Most members of the oil and gas industry fall squarely within the scope of the DPD—those engaged in traditional exploration and production activities (in the parlance of the industry, the "upstream" sector), oil field services companies (including those engaged in engineering and constructing wells to be owned and operated by third parties), as well as traditional refiners. In contrast, section 199[4] excludes most activities performed by traditional retailers, including the re-sale of products purchased from third parties. Section 199 also typically excludes from its scope most forms of transportation and distribution.

Many owners and operators of retail fuel outlets have assumed the DPD is inapplicable to their splash blending activities. Depending on the company's specific facts, however, it may be entitled to hitherto unclaimed benefits for gross receipts derived from splash blending activities. As discussed below, the potential availability of the DPD also may be a means to offset all or a portion of federal excise tax liabilities the retail fuel outlet may incur by reason of its splash blending activities.

For purposes of section 199, "production" is far broader than the common connotation of traditional manufacturing. Instead, as relevant for this discussion, production includes a wide range of activities by which the taxpayer "manufactures, produces, grows, or extracts" ("MPGEs") specific types of tangible property, including oil and gas, in the United States.[5] Each of several requirements must be satisfied independently, and each is described in detail in the applicable Treasury regulations. Nonetheless, two requirements are particularly germane when considering the application of section 199 to fuel blending: (1) Who is "the taxpayer" engaged in producing the "item"? and (2) Is that production sufficiently "substantial in nature" to satisfy the requirements of the applicable regulations?

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[3] The precise rules, requirements, and limitations are many and complex; a detailed discussion of the minutia of section 199 is beyond the intended scope of this discussion. A comprehensive analysis of the DPD can be found in Beth M. Benko, 510-2d T.M., *Section 199: Deduction Relating to Income Attributable to Domestic Production Activities*.

[4] Unless otherwise indicated, section references are to the Internal Revenue Code of 1986, as amended (the "Code") or the applicable regulations promulgated pursuant to the Code (the "regulations").

[5] *See generally* section 1.199-3(e).

By the Taxpayer

Only "the taxpayer" engaged in the qualifying production activity may claim the DPD with respect to the gross receipts generated by that activity. More than one taxpayer may be involved in the overall production of a final product, but only one taxpayer may claim the deduction with respect to a specific activity. For example, the suppliers manufacturing individual components, as well as the manufacturer assembling the components into the final product each get the DPD from the net income derived from their respective activities. Under the current section 199 regulations, the taxpayer having the benefits and burdens of ownership during a particular production activity will be "the taxpayer" engaged in qualifying production with respect to that activity.[6]

For purposes of this discussion, the relevant activity is the blending of a base fuel with ethanol or other biofuels in order to produce a final, consumer-ready motor fuel, and the "item" for purposes of section 199 is the consumer-ready fuel resulting from that activity. Even though the basic production process resulting in the blended fuel generally is the same for both pre- and splash-blended fuel, the contractual relationships between the parties at the time the fuel is dispensed from the terminal rack will largely determine which of them is potentially entitled to the section 199 benefit.

Pre-Blend

Pre-blend refers to selecting a pre-programmed gasoline or diesel blend from the distribution terminal. The input selections available to the fuel purchaser are limited to quantity and finished product type. The retail fuel outlet's drivers are unable to change the fixed blend ingredients or proportions of a pre-blend product. For instance, a common type of a pre-blend terminal selection might be 3000 gallons of 87 Octane with 10 percent Ethanol. The bill of lading will indicate that the purchase is of a completed fuel mixture suitable for retail. The pre-blend supplier will receive "Blender of Record" designation for this transaction, including benefits associated with the Renewable Identification Numbers ("RINs") attached to the bio-fuel blend ingredients, as described in greater detail below.

When a pre-blend purchase is made, the mixture has already been created inside the distribution terminal before removal into the truck or railcar. Because the terminal operator is selling a final product fit for sale to the end consumer, manufacturer-level responsibility to ensure the octane and volatility standards are met resides with the supplier, not the retail fuel outlet. As such, the distribution terminal rather than the fuel purchaser has the benefits and burden of the manufacturing activity with respect to pre-blended purchased fuel, and would be entitled to the DPD for that production activity.

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[6] In August 2015, the government proposed regulations that would shift this analysis away from a "benefits and burdens" analysis in certain situations, and focus instead upon which party "performs the qualifying activity." Prop. section 1.199-3(f)(1). See also the discussion of this topic in the preamble to the proposed regulations, at 80 Fed. Reg. 51978, 51982 (Aug. 27, 2015).

Splash Blend

Splash blending refers to selecting individual suppliers, types, and quantities of each ingredient required to make a motor fuel that meets motor vehicle and regulatory specifications and producing a consumer-ready product with those ingredients. In some cases, the purchaser obtains batch quantities of base fuels and ethanol from a third-party terminal and has the components loaded directly into the purchaser's tanker. In other situations, the retail fuel outlet makes bulk purchases of base fuels from a large refiner, separately purchases bulk quantities of ethanol from one or more ethanol producers, and has the individual components delivered via pipeline, rail, or truck directly to tank farms owned and operated by the retail fuel outlet. In those situations, rather than having a third-party terminal operator dispense batch quantities of base fuel and ethanol into the purchaser's tanker, the retail fuel outlet itself dispenses the required components from its own terminal facilities.

In a splash blending arrangement, the retail fuel outlet bears all the risks associated with producing the final product. Unlike pre-blend fuel, once the retail fuel outlet or its agent selects the type and quantity of blend components to purchase, the benefits and burdens of the raw materials immediately transfer to the retail fuel outlet, including the responsibility for calculating the final blend ratio required to produce the consumer-ready fuel. As such, a much greater level of professional judgment and decision making must be applied prior to the fuel outlet's selection of raw materials required for the blending process. For instance, the driver's discretion in selecting the type and quantity of individual components occasionally results in the purchase of incorrect components or an incorrect calculation of the required ratios. In the event of an improperly blended mixture, the retail fuel outlet—not the distribution terminal—is financially responsible for the commercial repercussions.

Environmental Protection Agency ("EPA") and RINs

Underscoring that the splash blender is "the taxpayer" producing the consumer-ready fuel, the EPA considers the tanker trailer an "ethanol blending plant" and the tanker's owner an "ethanol blender" for purposes of applicable federal environmental regulations.[7] These regulations place the compliance burden on the retail fuel outlet as the blender of record, since it—rather than the terminal operator—is the owner and operator of the blending facility under these facts.

The EPA's classification of the splash blender as the producer of the consumer-ready fuel underlies one of the principal commercial reasons retail fuel outlets perform their own blending operations—acquiring the commercially valuable RINs.

The EPA's Renewable Fuel Standard ("RFS") was enacted by the Energy Policy Act of 2005 (and later expanded under the Energy Independence and Security Act of 2007) to establish minimum renewable fuel content requirements in transportation fuels. Under the RFS rules, retail fuel outlets cannot legally sell fuels to consumers without the proper blending of gasoline with ethanol or diesel with biodiesel.

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[7] U.S. Environmental Protection Agency, *Enforcement of Volatility Regulations: Questions and Answers,* EPA420-F-93-006 at p. 12 (1993).

RFS quotas are imposed upon companies that refine, import, or blend fossil fuels based on the volume of fuel they introduce into the market. To ensure compliance, obligated parties must demonstrate that they have met their RFS quotas by submitting a certain number of RINs to the EPA. A RIN is a 38-digit serial number assigned to a batch of biofuel for the purpose of tracking its production, use, and trading. Under applicable federal law, the "producer" of a volume of biofuel becomes entitled to the RIN attached to that volume (such as any motor fuel containing ethanol). As a result, similar to carbon credits, RINs have an inherent value for companies that do not blend sufficient quantities of biofuel and hence cannot otherwise satisfy their RIN quota through their own manufacturing operations.

RINs are actively bought and sold through public exchanges, and the EPA monitors the transactions. Because only the producer of the fuel becomes entitled to the RIN generated by that production, the rights and responsibilities of the distribution terminal vis-a-vis the retail fuel outlet regarding the nature of what is being purchased at the rack, who bears the benefits and burdens of ownership during the final blending process, and who ultimately is the producer of the final fuel product are carefully negotiated and agreed upon before the purchase. While this is a non-tax consideration, the commercial terms and conditions between two independent parties having conflicting interests should help establish which of them bears the benefits and burdens of ownership, and so is the "the taxpayer" producing the fuel for purposes of section 199 as well.

Substantial in Nature

For purposes of the DPD, qualifying production includes extracting oil and gas from the subsurface, as well as the activities of traditional refiners. Traditional refining involves the use of heat and chemical processes to break and then rearrange the chemical bonds of hydrocarbons found in crude oil and in natural gas to create an entirely new chemical compound having different chemical properties and characteristics. Through these chemical reactions, the refiner converts crude oil into gasoline, diesel fuel, aviation fuel, and a wide variety of other products, each of which has a specific use and market.

Traditional refining requires massive investments of capital, extensive training of operations personnel, and extraordinary measures to ensure the safety of all those involved in or within the vicinity of the production activity. As a result, traditional refining is "substantial in nature" and thus eligible for the DPD.[8]

The "substantial" nature of the refiner's production activity is integral to the activity's qualification for the DPD. Under section 199, it is not enough to simply "produce" something—not all production activity is created equal for purposes of section 199. Instead, section 199 requires the production activity to have been undertaken "in whole or significant part" in the United States. The applicable Treasury regulations interpret this phrase to mean that the production activities must either be "substantial in nature," or else satisfy a "20 percent safe harbor."

[8] Section 1.199-3(g)(5) Example 1.

Satisfying the safe harbor requires the taxpayer to demonstrate that at least 20 percent of the cost of goods sold of the product result from the taxpayer's direct labor and overhead.[9] In other words, if the taxpayer undertakes a labor-intensive activity to create a new product, the government is willing to accept those efforts as qualifying "production" for purposes of section 199.

Activities involving the conversion of expensive raw materials into a new product typically will not satisfy the safe harbor. The taxpayer instead must demonstrate that its efforts in producing the new goods were "substantial in nature," as with the refinery discussed earlier. Here, the regulations impose a subjective, facts and circumstances test. Under this standard, the erstwhile producer must consider such factors as:

- The relative value added by the taxpayer's MPGE activity that the taxpayer performs within the United States;
- The relative cost of the taxpayer's MPGE activity that the taxpayer performs within the United States;
- The nature of the qualified production property; and
- The nature of the MPGE activity that the taxpayer performs in the United States.[10]

Design and development activities generally are not considered for purposes of this subjective standard (except for software and sound recordings).[11]

Due to the inherently factual nature of this standard, each taxpayer must carefully consider its own facts before concluding that its fuel blending activities satisfy the "substantial in nature" requirement. Supportive factors include that the splash blending process transforms raw ingredients (such as gasoline blend-stocks and ethanol) into a product that can be used in a typical motor vehicle engine and that has a materially greater commercial utility and market value, and meets motor vehicle operational and regulatory requirements.

A common misconception exists that splash blending is nothing more than pouring two liquids or a packet of chemicals into a container and stirring. Some mistakenly analogize it to making a popular flavored beverage using powered flavoring, sugar, and water. The reality is far different. Instead, motor fuels containing ethanol or other biofuels must be prepared in conformance with exacting tolerances to avoid an end product that is not only unusable, but potentially hazardous.

While the correct use of ethanol helps satisfy federal environmental regulations, introducing ethanol into motor fuel can have serious consequences for a consumer's engine if the blending is not conducted

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[9] Section 1.199-3(g)(3)(i).

[10] Section 1.199-3(g)(2).

[11] *Id.*

correctly and within exacting tolerances. Due to ethanol's corrosive properties, internal combustion engines are engineered to operate only using motor fuels containing specific ratios of ethanol (e.g., 10 percent, 15 percent, or 85 percent). Insufficient ethanol can adversely affect the vehicle's fuel economy, while excess ethanol can cause irreversible engine and fuel system damage.

As a result, companies engaged in splash blending undertake considerable efforts to train personnel in how to correctly choose and precisely calculate the ratio of base fuels and ethanol to be purchased at the terminal, to correctly load the purchased materials into the vehicle in a manner that will result in the correct blending of the components into a fuel having the desired chemical properties, and to ensure that the blending process occurs for a sufficient period of time to produce the desired product. Only through this carefully structured and managed process can the splash blender combine two or more individual commodities into a chemically and commercially distinct end-product with a significantly different utility and market value. Simply pouring and stirring indiscriminately would produce a commercially worthless concoction.

Federal Excise Tax Consequences of Splash Blending[12]

Also underscoring that the splash blender is the "taxpayer" for DPD purposes are the federal excise tax ("FET") rules applicable to splash blending. Companies engaged in splash blending need to be aware of these FET rules, including certain IRS registration requirements. In addition, there may be a federal excise tax incentive generated during the splash blending transaction.

FET is imposed on certain removals, entries, and sales of "taxable fuel" (that is, gasoline (including gasoline blend-stocks), diesel fuel, or kerosene). Generally, tax is imposed on removals of taxable fuel from the terminal. The person liable for tax is the "position holder" (that is, the person who holds an inventory position in the fuel on the terminal operator's books and records). The rate of tax is generally $.184 per gallon of gasoline and $.244 per gallon of diesel fuel or kerosene.

The removal of unmixed biofuel (such as ethanol) from a terminal is not a taxable event for purposes of FET. However, when this biofuel is mixed with taxable fuel outside the terminal, tax is imposed on the resulting "blended taxable fuel." The "blender" (that is, the person who owns the mixture immediately after it is produced) is the person liable for tax on the previously untaxed gallons of biofuel. For example, when 10 percent ethanol is splash blended with 90 percent gasoline in the retail fuel outlet's tanker truck, the retail fuel outlet is liable for federal excise tax on the gallons of ethanol used to produce the blend.[13]

Moreover, IRS requires that certain persons, including blenders, be registered by the IRS in advance of engaging in this activity. Failure to be registered as required may result in imposition of a penalty of $10,000 plus $1,000 per day for each day the person is not registered, starting from the first day the activity began.

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[12] The federal excise tax consequences of the pre-blend transaction are beyond the scope of this article.

[13] Special rules apply to the federal excise taxation of E-85.

One more consideration is whether a federal excise tax incentive may apply to the splash blending transaction.[14] Certain renewable fuel excise tax incentives may be available for production of a qualifying mixture of biofuel and taxable fuel. The person producing the qualifying mixture is the person eligible to claim these credits. While the incentive for alcohol fuel mixtures (including ethanol mixtures) is currently expired, in 2016 incentives may be available for production of qualifying mixtures of taxable fuel and neat biodiesel (including renewable diesel) or alternative fuel. For example, a blender of B-100 and diesel fuel may qualify for a $1.00 per gallon incentive on the gallons of neat biodiesel used.

Summary

Fuel blending is a commonly overlooked activity potentially qualifying for the DPD. As with all other areas of the DPD, eligibility for the deduction requires a close examination of a taxpayer's specific production activities to confirm that each of the many independent requirements of section 199 has been satisfied. In general, however, a taxpayer considering whether its fuel blending activities qualify for the deduction should ask the following questions:

- Does the purchase invoice reflect that taxpayer purchased pre-blended fuel?
- Does the purchase invoice reflect that taxpayer separately purchased base fuel, ethanol, or other biofuels?
- Which party has the risk of loss if the fuel dispensed at the retail fuel outlet fails to meet regulatory standards?
- How is the fuel physically loaded into the tanker trailer or railcar and where is the blend actually created?
- To what extent does the taxpayer train and rely upon its personnel to correctly compute the proper ratios of base fuels and ethanol or other biofuels and correctly load the fuel into the blending equipment (such as a transport trailer)?
- Does the taxpayer operate its own fleet of transport trucks, or does it contract with a third-party common carrier?
- If the taxpayer contracts with a common-carrier, at what point does the taxpayer have the risk of loss with respect to the fuel if it fails to satisfy commercial and regulatory standards?
- Does the taxpayer obtain a RIN? Is the taxpayer treated as the fuel blender under applicable EPA requirements?

[14] The incentive must first be claimed as an excise tax credit against fuel excise tax liability. Any additional amounts may be claimed as an excise tax payment or as a refundable income tax credit.

- Is the taxpayer registered with the EPA for purposes of participating in the commercial exchange of RINs?
- How is the transaction taxed for FET purposes?

Retail fuel outlets also should carefully review the federal excise tax implications of their blending activities. When available, claiming the DPD for splash blending activities may be an attractive means of reducing or eliminating this potentially significant tax obligation.

As a result, companies already incurring federal excise tax liabilities for their blending activities should consider the potential availability of the DPD as a means of reducing or eliminating this liability. Likewise, retail fuel outlets claiming the DPD for their fuel blending activities must carefully review their potential liability for federal excise taxes upon their blending activities. In some cases, the facts may indicate that the actual physical blending occurs in the truck or rail car, despite the terms stated in the purchase contract or delivery ticket. These situations should be evaluated carefully in terms of both the DPD and FET consequences.

The application of the DPD is rarely a bright-line, one-size-fits-all proposition. So too with fuel blending; companies engaged in the production of consumer-ready motor fuels should carefully assess the potential application of section 199 to this commonly overlooked production activity.