Office of Chief Counsel
Internal Revenue Service
Memorandum

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to: Director, Specialty Tax

from: Associate Chief Counsel
(Passthroughs & Special Industries)

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subject: Black Liquor; Calculating the Claim

This responds to your request for advice whether the alternative fuel mixture credit in § 6426(e) of the Internal Revenue Code (the Code) should be allowed for the entire volume of black liquor in an alternative fuel mixture, or whether the Service should disallow any portion of the volume of black liquor attributable to inorganic solids, chip water, or process water, as described herein?

FACTS

Black liquor, a byproduct of the paper milling process in kraft mills, is a liquid fuel derived from biomass under § 6426(d)(2)(G). To make black liquor, wood chips from debarked tree logs are pulped by using inorganic pulping chemicals ("white liquor"), process water, heat, and pressure to separate lignin and other components of the wood from the cellulose fibers in the wood chips ("kraft milling process"). The wood chips consist of approximately 50 percent

water (“chip water”) and 50 percent wood, by weight. The process water is added at one or more stages during the kraft milling process. White liquor and process water are necessary to create black liquor.

The resulting weak black liquor (including the lignin, spent chemicals, and water) is an aqueous solution. The weak black liquor is concentrated into heavy black liquor by removing much of the water. The removed water (including both chip water and process water) is generally recycled back into the kraft milling process. After being concentrated, the resulting heavy black liquor has a molasses-like consistency and its chemical composition includes organic matter, inorganic solids, and water. At this stage, heavy black liquor is approximately 60 percent dissolved solids and 40 percent water, by volume. The producer then adds a small amount of diesel fuel to the black liquor to produce an alternative fuel mixture, as described in § 6426(e) of the Code.

In the recovery boiler, the diesel fuel, organic matter, and water are burned away from the alternative fuel mixture, generating steam to produce electrical energy that powers the paper mill. The inorganic solids, however, are not burned away but remain in the recovery boiler as smelt (sometimes called “green liquor”). The chemical transformation that changes the inorganic solids into smelt/green liquor consumes energy in the recovery boiler. Despite this energy consumption, however, burning black liquor results in a net production of energy. Originally, the recovery boilers were explicitly designed to recapture the inorganic solids. Currently, the industry recaptures and reuses more than 95 percent of the inorganic solids. Through additional processing, the chemical

composition of the green liquor is changed into white liquor, which in turn is recycled into the pulping process.

LAW AND ANALYSIS

Section 6426(e)(1) of the Code allows a $.50 credit against a claimant's taxable fuel liability for each gallon of alternative fuel used to produce an alternative fuel mixture that the mixture producer sells for use or uses as a fuel in its trade or business. Any excess is allowed as a payment under § 6427(e) or a refundable income tax credit under § 34. The alternative fuel mixture credit expired December 31, 2009, for sales and uses after that date.

Under § 6426(d)(2)(G), a liquid fuel derived from biomass is an alternative fuel. Section 2(f)(1) of Notice 2006-92, 2006-2 C.B. 774, provides that a mixture is "used as a fuel" when it is consumed in the production of energy, including in a furnace to produce heat.

You have asked whether process water and the inorganic solids in black liquor "derive from" biomass for purposes of the § 6426(d)(2)(G) definition of alternative fuel. The IRS does not have published guidance defining the broad expression "derived from." The necessary components of black liquor are wood chips, water, and the inorganic solids. Wood chips are biomass. Process water and the inorganic solids themselves are not biomass and do not "derive from" biomass. Nevertheless, the § 6426(d)(2)(G) definition of alternative fuel is for a liquid fuel derived from biomass. This language suggests a process for deriving a liquid fuel, a primary component of which must be biomass.

In Rev. Rul. 86-96, 1986-2 C.B., the IRS concluded that for purposes of the coal tax imposed by § 4121, the term "coal" includes the coal's inherent moisture content (following A. J. Taft Coal Co. v. U.S., 605 F.Supp. 366 (N.D. Ala. 1984), aff'd without opinion, 760 F.2d 280 (11th Cir. 1985)). Wood chips have inherent water content. The processing of black liquor, including the concentrating, significantly reduces the amount of water in the liquid fuel. Further, if black liquor were a taxable fuel, the entire volume of the black liquor would be taxable, without taking into account its component parts, such as process water and inorganic solids. Thus, consistent with the tax treatment of inherent water in coal, the volume of black liquor should not be divided into component parts to calculate the alternative fuel mixture credit and the entire volume of the heavy black liquor is a liquid fuel that is "derived from" biomass.

You have also asked whether the inorganic solids in black liquor are "used as a fuel" as contemplated by Notice 2006-92. In the recovery boiler, burning black liquor produces energy (from heat and steam), exhaust, and smelt. At the end of the process, although smelt remains in the recovery boiler, there is nothing left that is identifiable as black liquor. The inorganic solids in the black liquor actually consume fuel while undergoing the chemical transformation into smelt/green liquor. Nevertheless, burning black liquor in the recovery boiler results in a net production of energy. Thus, the mixture of black liquor and taxable fuel is "used as a fuel."

CONCLUSION

The alternative fuel mixture credit in § 6426(e) of the Code is allowed for the entire volume of black liquor, without reduction for inorganic solids, chip water, or process water.

This advice may not be used or cited as precedent.

CONTACT INFORMATION

If you have any questions about this, please contact Taylor Cortright at (202) 622-3130.