DAIRY INSTITUTE
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April 18, 2016

Hearing Panel
Dairy Marketing Branch
California Department of Food and Agriculture
1220 N Street
Sacramento, CA 95814

RE: April 11, 2016 Consolidated Stabilization Plan Hearing on Class 4b Whey Valuation -- Post Hearing Brief

Mr. Hearing Officer and Members of the Panel:

Dairy Institute appreciates the opportunity to submit the following post-hearing brief to respond to hearing panel questions and to amplify portions of our testimony presented in Sacramento on April 11, 2016. The paragraphs that follow build on the propositions that we put forth in our testimony.

Derivation of Manufacturing Allowance Used in the Formula Underlying Dairy Institute's Proposed Whey Scale.

The manufacturing allowance used in the formula from which our whey scale is derived is actually a summation of several costs associated with a cheese plant's marketing of liquid whey to an aggregator or other cheese plant that will eventually dry the liquid whey into a finished product that can be sold to end users. Because the whey product will need to be dried, the cost of drying will be borne by the plant purchasing the liquid whey and will be a determining factor in what the purchasing plant will be willing to pay. We have no publically available data on current whey drying costs, but an estimate can be obtained by taking the extra cost associated with drying whey as compared to another dry product, nonfat dry milk (NFDM), and adding that difference to a current cost estimate for making nonfat dry milk.

Whey drying costs are generally higher than NFDM drying cost because liquid whey has a higher water content (and a lower solids content) than NFDM. The extra cost associated with drying whey was calculated as the difference between the current FMMO make allowance for dry whey ($0.1991 per pound) and the current FMMO make allowance or NFDM ($0.1678 per pound). These costs were established at a hearing held in 2007, but were based on data mostly from 2006. The difference of $0.0331 was added to the NFDM weighted average manufacturing cost released by CDFA in late 2014 of $0.1997 per pound to obtain an updated dry whey manufacturing cost of $0.2310 per pound. Given that the last whey manufacturing cost explicitly used in the Class 4b formula was $0.2670 per pound and the last survey cost was $0.3099 per pound. The estimate we have used here ($0.2310 per pound) is very conservative and likely understates that cost of drying whey in California.

For a cheese plant selling liquid whey, the additional costs, beyond whey drying, that must be included are the cost of cooling the whey and the cost of transporting whey to a nearby manufacturing plant. The cost of cooling whey is estimated at about $0.03 per pound of whey solids comes from data supplied as part of the Wisconsin Whey Study (which was included with our testimony as Appendix E).

The transport cost to a nearby plant is estimated for a distance of 50 miles at $3.00 per loaded mile on 6% whey or $0.05 per pound of whey solids ((($3.00/(50,000lb. load*0.06))*50) = $0.05 per pound). These costs are fairly representative of current haul costs reported by our members. Given the large distances between cheese plants in California, the assumption that a cheese plant will be able to sell his liquid whey to a plant only 50 miles away is unlikely, although a few might be able to do so. Testimony at past CDFA hearings suggests that the average distance that liquid whey moves in California is greater than in the Midwest. The transport cost assumption of $0.05/lb. that we have used is, therefore, quite conservative as the cost is likely higher.

So the sum of the costs described above, $0.2310/lb. whey drying cost + $0.03/lb. cooling cost + $0.05 transport cost, is $0.3110 per pound. The values in our proposed whey contribution table were derived by evaluating the formula presented in our testimony, (((((WPC-34 Price/0.34)*0.12)-0.3110)*1.03)*5.9)*0.965)*(8.8/8.7), at the WPC-34 price listed at the top end of the price range for each step of the proposed scale. As noted in our testimony, the proposed whey contribution is floored at $0.25 per cwt. and capped at $1.50 per cwt.

Dry Whey Protein Content Assumptions Used in the Graphs Included with Dairy Institute's Testimony and in Our Proposed Formula.

A panel member asked about the assumption that was used in constructing the graphs of the protein equivalent values for dry whey and WPC-34 in Figures D-1 and D-2 of Appendix D of our testimony. The assumption used by CDFA staff in Figure D-1, which was prepared for the CDFA Whey Review Committee in 2008, was that dry whey had a protein content of approximately 13%. Figure D-2 was meant to be an extension of Figure D-1, and so we used the same assumption. However, in preparing our proposal, we discussed the appropriate assumption for a protein value in dry whey with a number of cheesemakers and whey experts and concluded that a value of 12% is more representative of an industry standard protein content for dry whey.

WPC-34 Prices are Superior to Dry Whey at Representing the Value of WPC-80, WPI, and Other High Protein Whey Products.

Products such as WPC-80 and WPI are valuable to the entities that purchase them because of their functionality as an ingredient in the final product in which they included. It is their functionality as a protein that is of value to the buyers of the product, as their composition is mostly protein. As an indicator of the value of whey protein, WPC-34 is superior to dry whey because of its much higher protein content. It is also produced using the same underlying technology (fractionation through membrane filtration) as the more highly concentrated whey protein products and can be produced as an alternative to the

higher protein concentrates if needed. The price of dry whey, on the other hand is sometimes driven more strongly by the value of its carbohydrate component, and so it is less representative of the price of a protein product than WPC-34.

Under Regulated Minimum Prices that are derived from End-Product Pricing Formulas, it is Essential that the Commodity Prices Used in the Formulas be Representative of the Value of the Products Actually Produced by the Regulated Plants.

A hearing witness noted that cheddar cheese was not the dominant cheese product made in California, yet the Class 4b price formula uses cheddar cheese. From this fact, the witness argued further that the whey product used in the Class 4b price need not be representative of the value cheesemakers receive from whey. The witness's statement ignores the fact that cheddar cheese prices are well correlated with those for Mozzarella, the type of cheese produced in the greatest volumes in California. Cheddar prices also correlate well with Monterey Jack cheese prices.

Testimony at past CDFA and Federal Order hearings has established that cheddar cheese prices tend to drive pricing for the other major commodity-type cheeses. Therefore, the fact that cheddar cheese represents a minority of the cheese produced in the state does not negate its appropriateness for end-product formula used to establish regulated minimum prices. However, the dry whey price is not particularly representative of the prices received by California cheese plants for the whey products they actually make, and has become less so over time (See Appendix D of Dairy Institute's Testimony). WPC-34 is more related to the other whey protein concentrates and isolates, both functionally and technologically, and is a better, more representative price for use in establishing the value of milk used to make cheese in California.

Regulated Prices Established by End-Product Pricing Formulas Effectively Result in Regulation of Plant Margins.

Regulated minimum prices that are set by end-product pricing formulas effectively establish the margins that can be attained by the commodity cheese plants of the type represented in the formula. If we consider the case of a commodity cheddar cheese plant, the regulated prices established by CDFA define the margin that can be attained by a plant with the same costs and yields that are included as factors in the pricing formula. The plant might be able to improve its efficiency (by lowering costs or increasing yields) as a means of increasing its margin, but such changes have technical limits and can often be made only through additional capital (or labor) investment. Plants that are already operating near or at the efficient production frontier can do little to improve their margin through efficiency gains.

The ability of a plant to improve its margin by increasing its output price is likewise limited. Dairy commodity plants compete in a national and international marketplace with products that are sold according to established specifications. As such, the demand curve that these plants face for their product is highly elastic and downward sloping. A small increase in the plant's output price relative to its competitors will lead to a large

reduction in its sales as buyers shift their business to other suppliers. A downward sloping, highly elastic demand curve would also be faced by other dairy commodity makers, not just those that make the representative product in the formula (i.e. by mozzarella and jack cheese makers, not just cheddar makers). All would likely lose sales if they attempted to adjust their margins by increasing their product price.

In the case of the plant making the representative product, there is another factor limiting its ability to adjust its margin by increasing its output price. If, for example, a commodity cheddar cheese plant were able to increase its output price, that new, higher price would influence what other cheddar plants charge for their product, likely leading to an overall increase in the market price for the commodity. This price-follower behavior, which is a characteristic of less than perfectly competitive markets, would drive the market price for the reference product higher. Transmission of the plant's price increase through the market would eventually raise the regulated milk price because the end product formula used to set the milk price would be employing the new, higher cheddar cheese price. The circularity in the cheese price and the regulated milk price determination limits the ability of a cheddar plant to increase its margin by adjusting its output price.

The situation faced by cheese plants operating under regulated minimum prices that are set using end product pricing formulas is thus highly analogous to that faced by regulated utilities when output prices are controlled by regulatory agencies. Margins earned by the utilities are limited in those cases by what the utility is allowed to charge its consumers. The utility has limited ability to influence its costs. In the case of milk, the margins of plants are limited by the minimum prices that the state requires plants to pay for the milk they use. The plants have limited ability to influence their achievable output price.

Plant margins must be adequate for the plant operator to cover its cost and make a profit. If it cannot, it will have no incentive to purchase dairy farmers' milk. Under the case that a price cannot be found at which dairy farmers and plant operators are both financially viable over the long run, then the industry will contract. In such a case, the most natural place for the contraction to begin is in the producer sector where the dairy supply chain begins. That way, as the milk production declines, the market will determine which plants will be able to secure the available milk supply based on their ability to generate enough product revenue in order pay the necessary milk price. The plants that survive will be those that are able to pay the most for milk. CDFA does not have sufficient information to anticipate or circumvent the market's determination of which plants should be the ones that survive and which ones should be forced out by a rising competitive milk price. For this reason, the Department should use caution, as they have historically done, and set regulated prices so as to maintain adequate plant margins in the state and allow market-based premiums to work to allocate milk among the different plants.

Regulated Milk Prices <u>Should Not</u> be set at Levels that Make California Plants Uncompetitive.

One witness noted that the alternative proposal put forth by the producer trade associations (Western United Dairymen (WUD), Milk Producers Council (MPC) and

California Dairy Campaign (CDC)) would still leave the California Class 4b price lower than the comparable (Class III) price for milk used to make cheese under the Federal Milk Marketing Orders (FMMOs). We noted that strict comparisons between these prices are fraught with problems because of the different market conditions and different pooling structures faced by the plants that operate under FMMOs as compared to those that operate under California's system. However, we noted in out testimony (Appendix C) that, based on a survey of our members, the cost of moving cheese from California to Chicago was $0.10 per pound, while the costs of moving milk from California to the East Coast was as much as $0.15 per pound. This survey of our members cost to ship cheese was conducted about 10 months ago.

According to the CDFA analysis undertaken for this hearing, the Class 4b price generated by the WUD/MPC/CDC proposal would have averaged $0.46 per cwt. (or $0.046 per pound of cheese) below the Class III price over the past five years. Based on the shipping costs shown above, and the fact that cheese products produced in California are being sold as far as the East Coast in order for all of California's milk supply to be marketed, a Class 4b price that is only $0.46/cwt. below the federal Class III price is unjustifiably high.

Thank you for your consideration of our comments.

Sincerely,

William A. Schiek, Economist

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