**Specification**

**Review of Market Indicators 2024: Industry study**

**Background**

AHDB is a statutory levy board, funded by farmers, growers and others in the food supply chain. Our purpose is to make our agriculture and horticulture industries more competitive and sustainable through factual, evidence-based advice, information and activity.

AHDB wishes to conduct a review of our [dairy market indicators](https://ahdb.org.uk/dairy/ampe-and-mcve). The \*AMPE and MCVE market indicators are used in farmgate price formulas and negotiations but need to be kept up to date to ensure accuracy.

Reviews have been conducted at roughly three yearly intervals. Following the last review in 2020 estimated factory costs have been kept up to date by applying relevant inflationary indexes to energy costs including gas and electricity, and labour).

**AMPE** (Actual Milk Price Equivalent) is an indicator of the factory gate value of a litre of milk used for butter and SMP while **MCVE** (Milk for Cheese Value Equivalent) assesses returns from mild Cheddar and whey powder/butter.

Processor costs and yields in the calculation of them are subjects to change over time due to factors such as economies of scale, more efficient factories, improvements in milk solids and changes in energy sources.

In order to address this, AHDB wish to commission a review of AMPE and MCVE to ensure representativeness. The review will seek to establish how UK processor costs and yields have changed and what representative figures for these would be. The conclusions of the review will be reported in the spring of 2025.

Although they are not intended to be correct for every plant – there are instead designed to

be typical of the industry – it is important that they are updated from time to time as

technology and costs develop. It is important to note that milk price indicators are indeed, “indicators”. There is no intention to provide an absolute value. There is variability in costs across different processing plants and factors such as milk composition, plant utilisation, and efficiency will affect this. The value of market indicators is as a basis for identifying trends and to attempt to use them for more precise purposes goes beyond the limits of their scope and accuracy.

**Review Objectives**

The objectives of review are outlined below:

Review the existing AMPE/ MCVE formulas, specifically checking:

1. Are the estimated production costs in the formulas accurate and representative across the breadth of the industry?

2. Are the yield conversion factors within the formulas representative of what is

achieved by industry across the UK and Europe?

3. We expect that the utilisation of capacity within plants will have a significant bearing

on efficiency. What level of utilisation is there across plants for the different products?

Should there be an assumed level of utilisation going forward?

4. Does the use of UK (general spot) wholesale prices for butter, powder, whey and

Cheddar provide a helpful measure of the market? Are there alternatives to these

prices, such are using a blended price to factor in those companies who sell product

forward on contract? Should we be looking at other dairy products?

5. Are the current sources of prices for whey and lactose the best ones? For example, prices reported by the EU milk observatory (incumbent) for whey deviate significantly from the Netherlands price

6. Should the indicators include or exclude estimations of profit margin (return on capital)?

Finally:

7. Make recommendations on whether, and if so how, the market indicators should be

changed.

**Include section on proposal including a clear methodology on how you would gather evidence and check results with processors.**

**Review Outputs**

A written report will be produced outlining findings and recommendations from the study. We

intend to make the report available to an external audience.

**Timescales**

The review itself will run from October 2024 to January 2025, with the report made available in March 2025. If recommendations for changing the current indicators are made these will need to be considered by AHDB. We will not change the AMPE and MCVE calculation without consultation with the industry.

**Award Criteria**

Evaluation of the tender will be undertaken in accordance with the following criteria and weightings:

**60% of the evaluation weighting will be based on the quality of the proposal.** This will entail:

* Demonstrating a clear understanding of the brief and research objectives (5%)
* A sound methodological approach to gathering relevant information and collecting views from industry (20%).
* Demonstrate extensive experience of the dairy processing sector (20%)
* Demonstrating how a process for quality control will be followed, including fieldwork management procedures, data capture and handling as well as time-planning. You must provide examples of previous projects undertaken of a similar nature. (15%)

**40% of the evaluation weighting will be based on the cost of the proposal.**

* To enable comparability of proposals, a full breakdown of costs on a per annum basis with costs, must be provided. (40%)

**Your proposal should be no more than 15 sides of A4**

AHDB will review tenders following the closing date, and may consult with interested parties as part of the selection process. AHDB reserve the right to seek clarification of tender submissions.

**Annex 1 - Actual Milk Price Equivalent Calculation**

**IMPE/AMPE Calculation (historical)**

The calculation for IMPE (Intervention Milk Price Equivalent) was created by the OFT in

conjunction with Wye College as part of the investigation into Milk Marque. The aim was to

create a pricing formula that represented the returns from selling Butter and SMP into

intervention. With the collapse of Milk Marque, its direct use in milk pricing became less

important.

When the Dairy Market Information team was created, the IMPE and subsequently the

AMPE (Actual Milk Price Equivalent) were seen as useful indicators of **changes** in support

prices and market prices for butter and SMP. Comparing **trends** in these indicators

with **trends** in farmgate prices provided one of several useful ways of seeing how well and

quickly transmission of price changes were feeding down the milk supply chain.

Although the manufacturing margin within the IMPE and AMPE calculations has not been

changed (to reflect changes in inflation etc.) and is highly variable between manufacturers,

this does not matter because it is the **trends** being looked at and not the **absolute**

**values**. The exact processing margin calculated by Wye College was the subject of much

debate within the industry before the figure below was finalised.

**IMPE Calculation**

IMPE = (Intervention price of butter in ppl + Intervention price of SMP in ppl) - Margin

To calculate intervention prices in ppl for butter and SMP

Take 90% of the unsalted butter intervention price, convert into pounds using the month in

question's average Euro/£ exchange rate and then multiply by 100 to get a pence value.

Divide this by the yield factor for butter (20,273). For the ppl price for SMP take the SMP

intervention price, convert into pounds using the month in question's average Euro/£

exchange rate and then multiply by 100 to get a pence value. Divide this by the yield factor

for SMP (10,855).

• Intervention price of butter in ppl = ((90% unsalted butter intervention price \* € to £

exchange rate)\*100) / 20,273

• Intervention price of SMP in ppl = ((SMP intervention price \* € to £ exchange

rate)\*100) / 10,855

Margin = A figure corresponding to estimated production costs, profit, time lags in receiving

payment for finished product etc.

Assuming an interest rate of 7% and that there is a delay in payment of 45 days a year for

butter and 120 days a year for SMP.

• In addition there is a static 2.646ppl removed to cover overheads, variable cost etc

along with 5.4% of the total ppl for intervention butter and SMP which comprises

overheads and a 2% profit margin

Margin = (Intervention price of butter in ppl \* 45 / 365 + Intervention price of SMP in ppl \* 120

/ 365) \* 0.07 +2.646 + (Total Intervention ppl \* 0.054)

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**AMPE Calculation**

The AMPE calculation uses the same formula as IMPE but wholesale prices for Butter and

SMP are substituted in for intervention prices. The margin calculation is done in the same

way as the IMPE calculation.

AMPE = (Wholesale butter ppl + wholesale SMP ppl) - Margin

Butter ppl = (Wholesale price for butter (in £/tonne)\* 100) / 20,273

SMP ppl = (Wholesale prices for SMP (in £/tonne) \* 100) / 10,855

Margin = Margin for IMPE formula.

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**Annex 2 - MCVE Calculation**

**What is MCVE and what is its purpose?**

The purpose of the MCVE page is to provide a benchmark for the value returned from milk

used for mild cheddar. The Milk for Cheese Value Equivalent, or MCVE, provides an

indication of the value returned by processing milk into mild cheddar and its associated byproducts, allowing farmers supplying cheese-makers to track changes in the market. It is

based on the mild cheddar wholesale price and is hence calculates the returns from the

bottom of the cheese market.

**How does MCVE work?**

MCVE works in a similar way to current measures - Actual Milk Price Equivalent (AMPE) and

Intervention Milk Price Equivalent (IMPE). But rather than calculating the returns on butter

and skimmed milk powder, it takes the income from mild cheddar, whey powder and whey

butter. The processing costs and profit margins are then removed to calculate the returns

from milk when it arrives at the cheese processor's factory gate. MCVE is a useful way for

farmers to track how returns from the products their milk goes into are changing, even

though the milk price paid will also depend on factors such as milk supply, returns for mature

cheddar and competitor prices.

**How is MCVE calculated?**

It takes the value of mild cheddar and whey butter from the Wholesale survey, and whey powder from public sources, removes typical processing costs and, by dividing all these figures by the

appropriate yields, you are left with the equivalent value of the milk at the factory gate.

Income - Costs - Profits = Potential value of milk

**MCVE calculates the value of milk at the 'factory gate'. What is this, and Why?**

MCVE is calculated as a 'factory gate' value, meaning the value on arrival at the cheese

processor's factory gate as there are significant variations in transport costs from farms to

processing factories. These costs can vary between 1ppl for a tight ex-farm milk field to

more typically 1.5ppl for directs and can increase further if the milk has to be re-loaded or

shipped long distances. AMPE uses similar formulas for butter and skimmed milk

powder, which are also factory gate prices, so in this way they are more comparable.

**Is MCVE exactly correct?**

MCVE is never going to be exactly correct for every mild cheddar processor due to the

different costs, utilisation rates, efficiencies and product ranges of every factory. In addition,

cheese yields will vary from factory to factory on both a geographic basis and seasonal

basis. But we believe it to be as accurate and representative as possible.

**Is MCVE the price processors should pay for milk?**

No. MCVE calculates the value of the milk on the basis of the value various product markets

are returning at any point in time, but does not say what should be paid for raw milk. For a

start, most factories are making significant amounts of mature cheddar as well as mild

cheddar, giving higher returns and allowing processors to pay more than MCVE. The price

for raw milk will also be affected by more than just the change in the value of the products it

6 is made in to, eg. milk supply, processor efficiency & profitability, and competitor prices will

all play a significant role in establishing the actual milk price paid to farmers. In addition, not

all companies can dry their whey and therefore may not directly benefit or lose from changes

in the whey powder price.

What is of real importance is not the absolute level of MCVE, but the amount by which it

rises and falls, as this will be very accurate. Therefore if MCVE increases or decreases by

one pence per litre (1ppl), this will be an accurate representation of the change in value a

mild cheddar processor will be able to realise from the market.

**What are the yields and cost used in the formula?**

The following yield and cost factors:

**PRODUCT Processing Cost £/tYield (Litres per t)**

**Cheddar** 453 9,400

**Whey Butter** 342 130,000

**Whey Powder** 547 17,000

Profit Margin of 0.75ppl - roughly 3% return on sales as finance costs are included in the

formula and mild cheddar is a commodity product.

Price of Whey butter: Standard butter price - £300/t

From December 2021 processing costs are updated quarterly based on changes in the cost of labour, energy and general inflation.

**How accurate are the yields and costs used in this calculation?**

We are confident these yields and costs are typical achievable by for the UK Cheddar

processing sector although there will be processors turning out both better and worse

production costs and yields. Yields and costs will also vary from plant to plant, as they will

also do through the year due to differing milk composition. We have consulted the industry

and independent experts and, generally speaking, the figures have been confirmed as

realistic, although there is a significant shortage of information in the public domain. We will

naturally review these figures if any further information is received.

**What about time lags/maturation periods of cheese?**

There is a time lag between milk being made into cheese and the cheese being sold, as it

needs time to mature. This cost is included in the formula. However what is not included in

the formula is any time lag effect to try and equate when milk is bought and when it is sold.

Including this effect could have made the formula overly complex. The time lag issue is why

mature cheddar is not included in the equation and hence why MCVE is based on mild

cheddar at the bottom of the cheese market. Including mature cheddar would be difficult

because of the six month maturation period.

Responses by NOON 15th November 2024 to be returned to [susie.stannard@ahdb.org.uk](mailto:susie.stannard@ahdb.org.uk)