FOOD STANDARDS Australia New Zealand
Te Mana Kounga Kai – Ahitereiria me Aotearoa

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Supporting document 5 – Costs and benefits

Proposal P1056 – Caffeine review

Executive summary

This supporting document contains the impact analysis for the proposal P1056 – Caffeine review, including a consideration of the costs and benefits that are expected to arise.

The proposal would make amendments to the Australia New Zealand Food Standards Code (the Code), which are expected to have costs and benefits. The most significant amendments (in terms of costs and benefits) are listed below.

The Code would be amended to expressly prohibit the addition of caffeine to foods for retail sale, unless a specific permission exists. As a result, businesses will need to apply to amend the Code to add caffeine to a food for retail sale (where a permission does not exist). Foods such as coffee, tea and chocolate that naturally contain caffeine will not be impacted.

The proposal would also expressly permit the addition of caffeine to Formulated Supplementary Sports Foods (FSSF), up to a 200 mg one-day quantity[1]. Where caffeine is added to FSSF, consumers would be provided with standardised information on product labels about the caffeine content of the food.

Other amendments in the draft variation (that are expected to have no more than a minor impact) include:

- prohibit the retail sale of caffeine as a food unless expressly permitted by the Code
- in light of the above prohibitions, remove the current Code prohibition on a food for retail sale containing caffeine in a concentration of:
  - 5% or more of the food for sale if that food is a solid or semi-solid food; or
  - 1% or more of the food for sale if that food is a liquid
- set new compositional, packaging and labelling requirements for FSSF, including a requirement that a FSSF must not contain caffeine at a concentration of:

[1] The Code defines one-day quantity in Standard 1.1.2—2(3), in relation to a formulated supplementary sports food, as 'the amount of that food which is to be consumed in one-day in accordance with directions specified on the label'.

- 5% or more for a FSSF in a powdered form; or
- 1% or more for a FSSF in a liquid form.

This supporting document:

- describes the problem relating to the current regulation of caffeine in the Australia and New Zealand food supply,
- outlines why government action is required to address the problem, and the objectives of government action,
- summarises the proposed approach and how it meets the proposal objectives,
- identifies the costs and benefits that may arise from the proposed approach and whether there is a net benefit,
- gives opportunities for stakeholders to provide feedback to be considered in the final approach,
- outlines the consultation that has taken place prior to the 2nd CFS and
- explains the processes for implementation and evaluation of changes to the Code.

The analysis found that the most significant impacts of this proposal are:

- Quantified costs[2]
  - reformulating foods that contain caffeine (mostly sports foods) – A$1.3m to $2.5m
  - relabelling foods that contain caffeine (mostly sports foods) – A$1.8m to $3.7m
- Unquantified benefits
  - improved health and wellbeing outcomes for consumers
  - greater regulatory certainty for industry and governments, with flow on benefits to consumers.

The total cost of the proposal is A$3.1m to $6.2m. Some or all of these costs may be passed on to consumers.

Little costs are assumed for the reformulation of products in the general food supply as few examples of these products currently exist.

FSANZ expects the proposal will lead to a net benefit to society. A break-even analysis shows that daily users of caffeinated sports foods will need to receive benefit of only $1 to $2 per year for the benefits of the proposal to exceed the costs.

Stakeholders are invited to comment on this analysis. Information received from this 2nd CFS may result in FSANZ arriving at a different conclusion.

[2] *The quantified costs take into account the proposed two year transition period*

Table of contents

1 Introduction

The purpose of this document is to:

- outline the costs and benefits of P1056, as required by the FSANZ Act
- present the impact analysis of this proposal, including;
  - a description of the problem
  - objectives of the proposal
  - impacts of the proposal on different groups (including the costs and benefits mentioned above)
  - the preferred option, and its net benefit
  - a summary of consultation
  - implementation and evaluation of the proposal.
- elicit information from stakeholders to help improve the above analysis.

FSANZ is now seeking submissions in relation to proposed amendments to the Australia New Zealand Food Standards Code (the Code) and the following cost and benefit assessment, including its conclusion that the costs arising from those amendments will not outweigh their direct or indirect benefits. The assessment of costs and benefits in this document is based on the best available information to FSANZ at the time of writing. However, if alternative information is provided to FSANZ, the conclusions of this analysis may change at the next stage of assessment.

As always, some challenges exist around qualification of some of costs and benefits and the analysis, by necessity, relies on several assumptions. These challenges in relation to quantification and assumptions are explicitly identified.

FSANZ has not developed a Consultation Regulatory Impact Statement (CRIS) for this proposal because the function of the CRIS has been achieved by this document and the statutory consultation that has been undertaken by the 1st CFS and this 2nd CFS. The Office of Impact Analysis (OIA) has agreed with this decision and provided an exemption[3].

While a formal CRIS has not been prepared, this document has been drafted in a similar format to a CRIS (OIA, 2023a). It also follows related guidance from the Office of Impact Analysis, including the Cost Benefit Analysis guidance note (OIA, 2023b) and the User Guide to the Australian Government Guide to Policy Impact Analysis (OIA, 2023c).

FSANZ will prepare a Decision Regulation Impact Statement (DRIS) at approval stage to the FSANZ Board ahead of their consideration on the proposed changes to the Code. The DRIS will be submitted to the OIA for assessment against OIA guidance (OIA, 2023a). The DRIS will be based on the analyses presented in this document, and extended where possible based on stakeholder feedback. FSANZ is also likely to perform further research to improve the analysis.

2 What is the problem?

The purpose of this proposal is to consider whether additional measures are required in relation to caffeine in the Australian and New Zealand food supply in order to protect public health and safety.

[3] The OIA reference number for this Proposal is OIA24-07750

This proposal was prepared following consideration of Urgent Proposal P1054 – Pure and highly concentrated caffeine products (P1054). P1054 was prepared to prohibit the retail sale of pure and highly concentrated caffeine products due to an unacceptably high risk for consumers and a need to act quickly to protect public health and safety. Amendments to the Code were implemented in December 2019.

For more information on the reasons for preparing the proposal, refer to section 1.2 of the 2nd CFS.

In summary, FSANZ has assessed the evidence regarding caffeine in the food supply and found:

- Excess consumption of caffeine can have negative health consequences
- The safe level of consumption (for a non-pregnant, 70kg adult person) is;
  - 210 mg per dose
  - 400 mg per day
- Most people consume less than this level
- However, the following problems have been identified:
  - Single intakes of caffeine of up to 210 mg for adults (approximately 3 mg/kg body weight (bw)) were not generally associated with adverse effects. Above that dose, caffeine intake is associated with an increase in blood pressure, plasma catecholamines and anxiety.
  - Safe levels of single intake of caffeine for children up to 3.0 mg/kg bw/day[4] have been extrapolated from adults based on bodyweight. Some disruption of sleep may occur at intakes below this level.
  - Infants and pre-schoolers are at risk of life-threatening caffeine poisoning from acute exposure due to their low bodyweights. Data from poison centres in Australia and New Zealand indicate that infants and toddlers are over-represented among calls related to acute caffeine exposure.
  - Caffeine intake of pregnant women should be limited to 200 mg caffeine/day or less because levels above this limit may increase the risk of miscarriage, stillbirth, preterm delivery, low birthweight and small for gestational age infants.
  - A proportion of people exceed safe levels.
  - Some products on the market exceed the safe level for a single dose.
  - Current regulation does not address some of the risks to sub populations mentioned in the above points.

These points are discussed briefly below.

2.1 What are the safety risks from consuming caffeine?

While caffeine has a long history of safe use, excess consumption of caffeine can have negative health consequences, the most serious being death.

FSANZ has completed a safety assessment of caffeine (SD1). The safety assessment identified that the consumption of caffeine, either from chronic (habitual) intake or through an acute (single) dose can have significant health impacts in some circumstances.

[4] Expressed per kg bodyweight because of the rapid growth of children. Assuming body weights of 13 kg for a 1-3 year old and 22kg for a 4-8 year old (NHMRC, 2006), the respective approximate safe intakes for children would be 39 mg/day and 66 mg/day.

The following table summarises some of the potential acute negative effects of caffeine in adults identified by the safety assessment.

Figure 2-1 – Negative health effects of caffeine in adults, by acute dose

Acute dose	Potential effect identified by studies	Source/ studies
100 mg	May delay sleep and reduce sleep duration	FSANZ (2000) EFSA (2015)
140 mg	Minor increase in diastolic pressure, a measure of blood pressure	FSANZ (2000)
200 to 250 mg	Increase in blood pressure Cardiovascular issues such as hypertension or a rapid heart rate (due to increase in plasma catecholamines) Anxiety and sleep disturbances (due to Increase in plasma catecholamines) Reduction in myocardial blood flow when exercising	EFSA (2015)
400 to 500 mg	Increase in anxiety in psychologically normal subjects	EFSA (2015)
500 mg and above	Rate of clearance of caffeine is decreased, meaning caffeine stays in the body longer which results in greater risk to health	USFDA (2018)
1,200 mg	Rapid heart rate (tachycardia) Abnormal heart beats (ventricular arrhythmia) Seizures	FSANZ (2000) USFDA (2018)
3,000 mg	Lowest recorded dose that has led to death of an adult (that FSANZ has been able to identify)	FSANZ (2000)
5,000 to 10,000 mg	Life-threatening dose, typically due to cardiac arrest	FSANZ (2000)

2.2 Are people consuming caffeine at safe levels?

Most people typically consume caffeine at safe levels (SD3, research question 2) (SD2, section 3.1).

Data from national nutrition surveys show that caffeine was consumed by 87% of Australians and 93% of New Zealand adults on day one of the surveys, with the major sources being coffee, tea, soft drinks, and chocolate (and other foods that contain these as an ingredient, for example cake) (SD2, section 3.4).

Caffeine consumption is typically self-limiting, consumers generally learn to regulate their intake to achieve the beneficial effects of caffeine while avoiding the adverse effects (SD1, section 2.5). For example, when consuming products with naturally occurring caffeine (listed in the table above) any negative symptoms of caffeine intake will be experienced gradually, which typically will result in consumers stopping consumption before more serious negative effects are felt.

Evidence from the most recent national nutrition surveys (SD2, section 3.1) suggests that estimated usual caffeine intakes exceeded the recommended maximum level for the following population groups:

- 6% of Australian adults aged 20 years and above
- 2% of New Zealand adults aged 15 years and above

In addition, consumer studies show (SD3, research question 2):

- 0.8% to 15.6% of pregnant women exceed the recommended safe level
- 14% to 17% of adults may be regularly exceeding the daily recommended limit
- some sub-groups may be more likely to exceed the daily recommended limits, for example people who do shift work (up to 33%) and athletes.

Caffeine is also present at often high concentrations in sports foods, which are being increasingly consumed in the community. Euromonitor (2022a, 2022b) estimate that that sales of sports non-protein products have grown, per year to 2022, by:

- 8.7% in Australia
- 5.5% in New Zealand[5].

FSANZ's risk assessment found the sub-populations at potential risk include users of supplements and sports foods that are not accurately labelled, infants and pre-schoolers, and athletes (section 2.2, 2nd CFS).

3 What options have been considered to achieve the objectives?

The objectives of this proposal are to consider whether additional measures (beyond the previous amendments from P1054 (see section 1.2 in the 2nd CFS)) are required in relation to caffeine in the Australian and New Zealand food supply in order to protect public health and safety, in particular:

- caffeine in sports food, which may consider a maximum limit on caffeine for foods in the general food supply; and
- the extent of the risk posed to sensitive subpopulations and whether and how any such risk should best be managed.

FSANZ has considered the above and developed a series of amendments to the Code. These amendments are considered together in this analysis, as Option 2.

Therefore, two options have been analysed:

- Option 1 – status quo (no change)
- Option 2 – regulatory option – a series of amendments to the Code.

At the 1st CFS, FSANZ also considered the use of a standalone education campaign as an alternative to regulation during the standard development process (which was presented as 'Option 2'). However, this option was not supported by submitters and discarded (see table A, Appendix 1, 2nd CFS). Submitters to the 1st CFS supported regulation in order to address the serious health consequences of inadvertent or excessive caffeine intake, to increase regulatory clarity and to protect vulnerable sub-populations.

3.1 Option 1 – status quo

The status quo must be considered by FSANZ in any proposal to change the Code (OIA, 2023a). The status quo is also the benchmark for the analysis of costs and benefits.

[5] *Measured on a compound annual growth rate basis, for the 6 years to 2022*

Under this option, the current provisions for caffeine in the Code would remain unchanged. However, the food market would continue to evolve. The current provisions of the Code are described in detail in section 1.4.1 of the 2nd CFS.

This option does not include any additional risk management measures and would not address any risks identified in the problem statement.

3.2 Option 2 – amend the Code

This option would make a number of amendments to the Code, including:

- the inclusion of an express prohibition on the retail sale of caffeine as a food
- the inclusion of an express prohibition on the addition of caffeine as an ingredient or component, to foods for retail sale, other than those that have a specific permission
- the removal of the prohibition on any food for retail sale containing caffeine in a concentration of:
  - 5% or more of the food for sale if that food is a solid or semi-solid food; or
  - 1% or more of the food for sale if that food is a liquid
- retaining the concentration limits identified in P1054, for FSSF only, where sold as
  - a powder, where the 5% concentration limit will remain
  - a liquid, where the 1% concentration limit will remain
- the inclusion of an explicit permission for FSSF to contain total caffeine up to 200 mg in a one-day quantity and additional conditions including labelling and packaging requirements (see sections 2.3.2 to 2.3.4 below).

FSANZ has a number of channels available to support the implementation of these amendments and to reach target audiences and disseminate messages. Consumer education materials on the risks of pure and highly concentrated caffeine products are already on the FSANZ website and these would be updated to ensure consistency with the new requirements for caffeine in food, if approved.

For more detail on any of the above, refer to the 2nd CFS which contains:

- a description of the changes in detail
- reasons behind each change in detail
- proposed amendments to the Code.

4 What are the costs and benefits of the options?

This section contains the consideration of the costs and benefits of the proposal.

In assessing this proposal, FSANZ is required by the FSANZ Act to have regard to whether the costs that would arise from the proposed measure outweigh its direct or indirect benefits. In doing so, it had regard to submissions received in response to the 1st CFS.

Two options have been analysed in this section:

- Option 1 – status quo
- Option 2 – amend the Code

4.1 Impacts of Option 1 – status quo

There would be no change to the Code under Option 1, and by definition there would be no regulatory impacts (OIA, 2023a). As a result, the problems identified above will continue under the status quo, primarily public health and safety risks to certain sub populations from consuming excess caffeine and the risk of inadvertent consumption by vulnerable populations (see section 2.2 in the 2nd CFS).

Note that while the regulations would not change, the market for caffeinated products would continue to change. This means that the problems identified may increase or decrease in magnitude, while the regulations would remain unchanged.

4.2 Impacts of Option 2 – amend the Code

4.2.1 Introduction – scope of analysis

The proposal will impact all foods that fall into one of the following categories:

- general foods with added caffeine – except where caffeine is added for a permitted purpose in the Code[6]
- sports foods with added caffeine.

The analysis of the costs and benefits of this proposal on both categories of foods is based on the best available evidence of the products on the current market. This means that for the purpose of this analysis, products have been assumed to be formulated in a way that is compliant with the Code. This analysis therefore concludes that impacted products (in particular sports food products, which will be impacted to a greater extent) will incur costs to meet new requirements under Option 2. FSANZ is, however, aware that a number of products on the current market may not be considered compliant under the Code and as such, the costs to industry presented below may be overestimated. Further, sports supplements that are classed as therapeutics and regulated by the Therapeutic Goods Administration (TGA)[7] are not impacted. See Appendix A of this report for further detail.

FSANZ has only quantified where possible and/or directly considered the potential costs and benefits experienced by Australian and New Zealand businesses, consumers and governments. This is standard practice for government cost and benefit analyses (OIA, 2023b)(OMB, 2023). The analysis assumes that the proposed amendments will apply to supplemented foods under the New Zealand Supplemented Food Standard 2016. See sections 1.4.5 and 2.5.1.3 in the 2nd CFS and 2.5.1 of the P1054 Amendment Report and has included these products, where possible, in its analysis. FSANZ's initial analysis indicates that approximately 60% of sports foods for sale in Australia and New Zealand are made in Australia or New Zealand.

4.2.2 Summary of impacts for Option 2

The following table summarises the potential impacts of Option 2, by group.

The food industry includes manufacturers, importers, wholesalers and retailers of impacted foods. Impacts on consumers have been separated according to whether they are consumers of general foods, or sports foods. Governments includes all levels of government, as all governments play a role in food safety.

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[6] Where there is an existing permitted purpose, caffeine will continue to be able to be added. Refer to section 1.4.2 of the 2nd CFS for discussion of the existing permitted purposes

[7] These products are regulated independently of the Code. Refer to section 1.4.4 of the 2nd CFS for more information.

Figure 4-1 – Summary of impacts of Option 2, by product and group

Stakeholder group	Impacts for general foods	Impacts for FSSF
Food industry		
Costs	• Reformulation (and consequential re-labelling) of foods with added caffeine • Product withdrawal, where reformulation not viable	• Reformulation of sports foods with more than 200 mg caffeine in a one-day– $A1.3m to $2.5m cost • Re-labelling (to add mandatory elements and/or update after reformulation) – $A1.8m to $3.7m cost • Potential withdrawal of product varieties or lines • Re-packaging sports foods weighing 4 g or less per serve when the entire packet contains more than 200 mg caffeine
Benefits	• Regulatory certainty on what caffeine can be added to	• Regulatory certainty on the ability to add caffeine safely – lowering costs, increasing investment, increasing trust
Consumers		
Costs	• Short term – potential higher cost of impacted foods[8]	• Short term – potential higher cost of impacted foods (this is a potential transfer between the food industry and consumers)
Benefits	• Health benefits from reduced risk of caffeine overconsumption	• Health benefits from reduced risk of caffeine overconsumption • Value of increased information through labelling
Governments		
Costs	*None identified*	*None identified*
Benefits	• Improved enforceability of food standards • Potential improvements in healthcare spending efficiency	• Improved enforceability of food standards • Potential improvements in healthcare spending efficiency

[8] *Costs for consumers will only be higher where manufactures experience costs to reformulate and/or re-label, and costs are passed on. See discussion of industry costs for more information.*

4.2.3 What are the impacts on businesses?

This section discusses the impacts on businesses. In summary, the expected impacts for businesses are:

- quantifiable costs:
  - relabelling costs for sports foods that contain caffeine – A$1.8m to $3.7m one off cost[9]
  - reformulation for sports foods to reduce caffeine below a 200 mg one-day quantity – $A1.3m to $2.5m one off cost[7]
- unquantifiable costs:
  - repackaging (of individual caffeine-containing sports foods weighing 4 g or less)
  - product withdrawal (where adapting to the changes is uneconomical or not possible)
- unquantifiable benefits
  - regulatory certainty

These impacts are explored in detail in the following sections.

This analysis considers the impacted food industry as a collective. Primary impacts will be experienced by manufacturers, with flow on impacts (or transfers) through the supply chain. In reading this impact analysis, care must be taken to double count these transfers.

4.2.3.1 Transition period

The extent of the cost impact on industry is partially dependent on the amount of time provided for industry to become compliant with the amendments (CIE, 2002). Longer transition periods are more likely to reduce costs as they allow more businesses to use existing resources to modify their product range without needing additional resources as well as reduce the need to write-off of unused materials like packaging. It will also increase the likelihood that change can be aligned with business as usual reformulation and repackaging, as manufacturers develop new products to target trends in the market, reducing the marginal cost of the regulatory change.

FSANZ is proposing a two-year transition period for this proposal, see section 3.1 of the 2nd CFS for more information. This transition period balances the desirability of achieving the benefits of the proposal as soon as possible, and the cost to industry. Given the parameters already in place to manage highly concentrated caffeine in the food supply (FSANZ, 2022), FSANZ considers this represents an appropriate management of risk.

4.2.3.2 Costs for general foods – removing added caffeine

Caffeine will not be permitted to be added to foods for retail sale, except in circumstances where there is an existing permission. Impacted products will need to be reformulated to remove added caffeine in order to continue to be sold.

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[7] *Costs experienced by manufacturers may be passed on to consumers. This is discussed at section 4.2.4*

Rather than be reformulated, some products could be:

- re-categorised as a FSSF or FCB[10], however these products would need to be relabelled
- withdrawn from the market.

The total cost impact of removing added caffeine from general foods for retail sale is expected to be small. This is because few general food products are expected to be impacted. The impact on individual businesses may be significant, but only where impacted products make up a significant proportion of a business's product line. FSANZ is not aware of any such businesses.

At the 1st CFS, stakeholders were asked if they agreed that few products contained added caffeine. Of those that responded to this question, all agreed.

A search of the GS1 On Pack[11] database by New Zealand Food Safety (NZFS, 2023) provided supporting evidence of there being relatively few general foods (other than energy drinks, cola-type drinks and FSSF) that contain added caffeine currently sold in New Zealand.

The products found in GS1 On Pack with added caffeine typically contained small amounts of caffeine due to the presence of coffee as a flavouring agent (e.g. iced coffee drinks, coffee flavoured ice cream) or because they were fermented from tea (e.g. kombucha) (NZFS, 2023).

4.2.3.3 Sports foods – about the industry

The exact size of the market for impacted sports foods is unknown.

However, data from Euromonitor (2023a, 2023b) shows that the entire category of non-protein sports foods products (including products not impacted by this proposal)[12] sold, in 2022:

[10] Subject to that product meeting the requirements of Standard 2.9.4 or the FCB standard
[11] GS1 (NZ) On Pack is a service provided to New Zealand businesses that captures all label information on food products that have been opted-in by manufacturers.
[12] This category of products includes sport food products most likely contain caffeine, such as pre-workout powders. However other products within this category include recovery products like amino acid blends, and non-stimulant pre-workout products. Note that a small proportion of protein products also contain caffeine, and will be impacted by the proposal.

- $AU260m in Australia, or 25% of the total sports food market
- $NZ6.7m in New Zealand, or 9% of the total sports food market.

Products found on the market are manufactured internationally as well as domestically.

There is no direct data on the size of the manufacturing industry for impacted products only. However, data from IBISWorld (2023) indicates that in Australia:

- there are approximately 80 businesses who manufacture vitamins, sports supplements and sports foods (noting that a number of these products are likely to be regulated as therapeutic manufacturers).
- revenue for these manufacturers is $1.6bn, of which $390m (25%) is from sports and active nutrition products[13].

A significant proportion of products are exported, in part due to the reputation of the domestic industry as being 'clean' and safe (IBISWorld, 2023). KPMG (2020) estimates that 14% of all sports foods produced in Australia are exported. Similar data was not available for New Zealand.

Products found on the market are sold through:

- domestic businesses, online or in-store
- international businesses online, direct to consumers or through retailers.

4.2.3.4 Number of impacted caffeinated sports foods

FSANZ initial estimate is that there are approximately 350 individual impacted sports foods that contain caffeine on the market. These products are sold as 1800 stock keeping units (SKU), which are different pack sizes and flavours of the individual products.

The estimated number of impacted products and SKUs impacted is based on a desktop search of products on the market by FSANZ[14]. A number of assumptions have been made in collecting and analysing this data. Refer to Appendix A for more information.

Of the products identified, FSANZ estimates 60% of SKUs are above the 200 mg threshold.

The estimated number of products and SKUs impacted is based on a desktop search of products on the market by FSANZ. Appendix A contains:

- the search method for impacted products
- a summary of statistics on the products found
- the method used for calculating how many products are impacted.

FSANZ invites stakeholders to review this data, and provide feedback on whether the estimate is accurate or how it can be improved.

In the 1st CFS, FSANZ requested data from stakeholders on the number of SKUs impacted. A small number of companies provided a list of their SKUs. This was used to assist in validating the desktop search. No data was provided for the entire market.

[13] Note that this includes products out of scope for this proposal, including non-caffeinated products and therapeutic goods

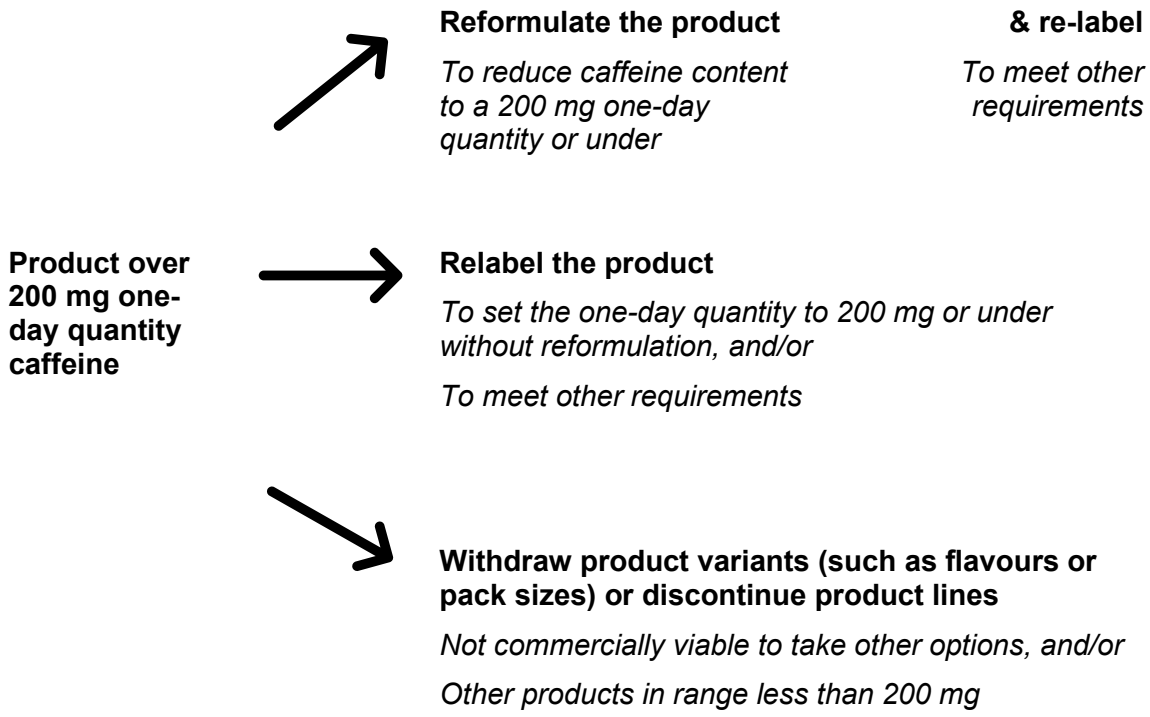
[14] Costings are based on what is currently marketed as a sports food regardless of its composition and purpose, it is not based on products that meet the current regulatory requirements as per Std 2.9.4.

4.2.3.5 Assumptions on business behaviour

Adapting to the proposed standards will have financial costs to impacted businesses. Each business will decide on whether to adapt products, and how. Ultimately, this will depend on the strategic goals of the business and whether there is a return on investing in adapting the product.

For impacted sports foods with over a 200 mg one-day quantity of caffeine, the options available are summarised below.

Figure 4-2 – Likely business responses to 200 mg caffeine one-day quantity, for products over the limit



For the analysis of costs that follows, FSANZ has made a number of assumptions on what businesses will do in response to the proposal (discussed below).

Product lines may also be discontinued where reformulating a product line would result in that product replicating a product line the brand already has on the market. For example a brand has multiple formulations of the same product type (for example pre-workout), and some products have more than 200 mg, and some less than 200 mg. It has been assumed in this circumstance all products over 200 mg will be discontinued. Refer to Attachment A for more information.

In order to estimate the impacts, the total costs have been presented as a range, to overcome the lack of data on industry behaviour.

4.2.3.6 Cost of relabelling impacted sports foods

The estimated cost of relabelling products is A$1.8 to A$3.7m. This is a one off cost, and takes into account the proposed two year transition period. This cost may be passed on to consumers in part or in full, see below for more discussion.

The cost is presented as a range, as there is considerable uncertainty about how businesses will behave in response to the proposal.

More information is provided on how this cost was calculated in Attachment A.

Important caveats to this cost are:

- it only includes the costs for Australian and New Zealand businesses
- it assumes some SKU or product lines are withdrawn.

It is expected that all impacted sports foods containing caffeine currently on the market would require relabelling to continue to be sold. This is based on a review of products on the market with more information provided at Appendix A. The relabelling of caffeinated sports foods is estimated to be between A$1.8m to $3.7m.

The total cost includes the cost of:

- administration (e.g. project management, contract management)
- label re-design
- market testing
- developing proofs, engraving plates and colour matching
- reviewing samples.

The cost per activity is broken down at Appendix A.

4.2.3.1 Cost of reformulating impacted sports foods

The estimated cost of reformulating products is A$1.3 to $2.5m. This is a one off cost, and takes into account the proposed two year transition period. This cost may be passed on to consumers in part or in full, see below for more discussion.

The cost is presented as a range, as there is considerable uncertainty about how businesses will behave in response to the proposal. More information is provided on how this cost was calculated in Appendix A.

Important caveats to this cost are:

- it only includes the costs to reduce caffeine levels to a 200 mg one-day quantity or less
- it only includes the costs for Australian and New Zealand businesses
- it assumes some SKU and product lines are withdrawn.

The total cost includes the cost of:

- research
- sample development and testing
- re-costing
- updates to sales and technical documentation.

This cost is based on analysis by Noetic for the TGA (TGA, 2020) of the cost of reformulating sports foods that were expected to be captured by a proposed TGA regulation. This is the best available indication of the reformulation cost at the time of writing this analysis.

As noted above, it is possible that not all of these products will require reformulation. In some cases, serving sizes could be adjusted down while the underlying product remains the same. In this case, the only cost would be to relabel the product (which is included in the relabelling costs already incurred to comply with other elements of the proposal).

However, due to lack of data, FSANZ has assumed that no products providing over a 200 mg one-day quantity of caffeine will relabel instead of reformulate, which provides an upper bound estimate of likely costs.

4.2.3.2 Cost of repackaging some sports foods

Individual portions of caffeinated sports foods, sold together in a package of multiple portions, will be required to be individually packaged where they:

- contain caffeine and the total amount of caffeine in the whole package is over 200 mg
- weigh 4 g or less per portion
- are solid or semi-solid (see Attachment A, 2nd CFS).

An example of an impacted product is a packet of multiple caffeinated pre-workout gummies. Under the proposal, each single gummy would be required to be separately packaged, within the larger packet if the above conditions applied.

The total cost of this element of the proposal is unknown, due to lack of data on the cost of re-packaging products.

Based on the market scan, there is expected to be few products impacted by this change, and therefore the total cost is small.

Stakeholders are encouraged to provide data on the cost of repackaging products, which would enable the total cost to be estimated.

4.2.3.3 Costs of impacted products being withdrawn

In some cases, the cost of adapting to the regulation may not be a worthwhile investment. This may mean some flavours or packet sizes are not updated, to minimise costs. Some product lines may be withdrawn or discontinued.

This impact represents an opportunity cost for the industry, of profit that will not be realised because of the proposal. The net impact for industry will depend on what businesses decide to invest in instead, and the relative profit margin of that investment compared to the discontinued product.

Imported products are more likely to be withdrawn. This is because it is less likely that international manufactures will achieve a return on investment for adapting products to a relatively small market like Australia and New Zealand (TGA, 2020a).

4.2.3.4 Benefit of regulatory certainty for industry

Updating the Code may provide businesses:

- regulatory certainty, potentially enabling greater investment and returns
- improved reputation with consumers, potentially increasing sales
- a fairer market, with an increased likelihood non-compliant products will be removed from the market.

In consultation, some industry stakeholders stated that currently there are different interpretations of how the Code regulates caffeine, and greater ‘clarity’ would be beneficial.

For FSSF, regulatory certainty is likely to lower regulatory risk and may reduce costs and increase investment. For FSSF, businesses will benefit from certainty on:

- the ability to add caffeine
- the quantity that is allowed, and safe for consumers
- labelling requirements for caffeinated FSSF.

For general foods, businesses will benefit from certainty on:

- what foods caffeine can be added to
- approval pathway for new permissions (through the existing application process).

Greater certainty reduces the risk of inadvertent non-compliance, which can result in expenses related to product recalls (including the cost of having to dispose of recalled products) and damage to a business' reputation.

As noted above, domestically produced products have a reputation as being 'clean' and safe in international markets, which enables domestic manufacturers to capture more of the export product market (IBISWorld, 2023). It is expected that this proposal will further improve this reputation.

Clear and evidence-based regulation may also improve consumer confidence within the domestic market increasing sales.

4.2.4 What are the impacts on consumers?

In summary, the impacts on consumers are:

- Costs
  - Potential short-term increases in the cost of impacted products (transfer of costs by business to consumers)
- Benefits
  - Potential health benefits from reduced risk of over consumption
  - Greater availability of information

Consumers (as a collective) will experience health benefits from this proposal, as a result of reduced risk of over consumption of caffeine.

The proposal reduces risk in two ways, by;

- lowering the aggregate amount of caffeine in the food supply
- amending the Code to permit caffeine in FSSF at a level that balances the benefits of caffeine against its risks.

Many consumers are also likely to value the information required on label (see section 2.2.6 of the 2nd CFS) given its potential to support the safe and appropriate use of these foods.

4.2.5 What are the impacts on governments?

The proposed changes will benefit governments in Australia and New Zealand. No additional costs to government have been identified.

The benefits of this proposal for governments are:

- improved clarity and enforceability of the standards, benefitting;
  - state, territory and New Zealand food safety regulators
  - national border inspection agencies
- increased healthcare spending efficiency.

Government stakeholders claim that currently there is 'ambiguity' and 'uncertainty' on how the Code regulates caffeine, and that greater clarity is required in order for the Code to achieve the intent of the Code. Jurisdictions have claimed that the lack of clarity impacts on governments, impeding their ability limit the over-consumption of caffeine and therefore protect public health and safety.

The proposal is expected to provide governments with more clarity, and therefore is expected to improve the enforceability of the Code.

Health benefits to consumers will flow through to governments, as a result of less expenditure on healthcare.

5 Conclusion of analysis: which is the best option?

FSANZ's view is that Option 2 is the best option to address the problem outlined above. This is because Option 2:

- is likely to have a net benefit
  - the per-consumer breakeven figure is A$1 to $2, which is likely to be achieved
- achieves the objectives of the proposal.

These conclusions are discussed in more detail below.

FSANZ's view is that Option 2 has a net benefit. The costs that would arise from the proposal (principally the cost of re-formulating and relabelling impacted products) do not outweigh the benefits (a reduction in negative health outcomes).

This conclusion is further supported by the below break-even analysis, which was performed using the quantified costs.

A break-even analysis is a method of demonstrating the likelihood of a proposal achieving a net benefit when only a selection of costs and benefits are capable of being quantified (OMB, 2023).

Society will need to receive a benefit of approximately A$1 to $2 per consumer per year to break-even on the quantified costs. In this model, a consumer is someone who consumes a caffeinated FSSF daily. This consumer was chosen to model the break-even benefits because they are the consumer most likely to benefit due to the higher concentration of caffeine in FSSF.

FSANZ considers it likely that this benefit will be achieved, given that a significant number of consumers are expected to experience minor benefits from the change.

This break-even analysis is based on the domestic cost of the proposal (the impact on industry participants located in Australia and New Zealand) and the number of domestic consumers who benefit.

6 Who was consulted, how was feedback incorporated?

Consultation is a key part of FSANZ's standards development process.

The proposal is being assessed under the major procedure as set out in the FSANZ Act. As a result, FSANZ has released two call for submissions documents.

This 2nd CFS follows the 1st CFS, as discussed in more detail below.

6.1 First CFS released December 2022

The 1st CFS was released on 19 December 2022. It sought comment on FSANZ's

- assessment of the regulations applying to caffeine
- preliminary conclusion to prepare a variation to the Code
- preferred approach to varying the Code.

6.1.1 How many submissions were received

FSANZ received 22 submissions to the 1st CFS;

- three from individual business
- six from industry peak bodies
- 11 from government agencies
- two from health-related peak bodies.

All submissions are published in full on the P1056 webpage[15].

6.1.2 FSANZ considered all submissions to the 1st CFS

All submissions received were reviewed by FSANZ. Some submissions resulted in changes to the proposed approach. Where the proposed approach was not changed in response to stakeholder views, FSANZ has provided an explanation.

For more information refer to the 2nd CFS document, section 2.3 and Appendix 1 which include:

- a summary of all submissions received,
- FSANZ's response, and
- a discussion of which elements of the proposed approach changed in response to stakeholder feedback.

The proposal (and the cost benefit analysis) has been revised and presented again for stakeholder feedback in this 2nd CFS.

[15] Redacted versions of confidential submissions have been published where possible.

6.2 Second CFS seeks further comment from stakeholders

The 2nd CFS seeks comments from interested parties on FSANZ's

- updated assessment of the regulations applying to caffeine
- decision to prepare a variation to the Code
- the proposed variation to the Code.

As with the 1st CFS, all submissions received will be considered by FSANZ. An approval report will then be developed and presented to the FSANZ Board with the final variations to the Code.

The approval report will be accompanied by a DRIS.

6.3 Consultation with the World Trade Organization

As members of the World Trade Organization (WTO), Australia and New Zealand are obliged to notify WTO members where proposed mandatory regulatory measures:

- are inconsistent with any existing or imminent international standards, and
- the proposed measure may have a significant effect on trade.

Elements of this proposal may impact on trade, therefore, the WTO will be notified of this proposal. This will enable other WTO members to comment on any proposed amendments (see section 2.4.2, 2nd CFS for more information).

7 How will the chosen option be implemented and evaluated?

It is expected that this proposal will follow standard implementation procedures (FM, 2024a), which are described in this section.

Within the food regulation system, FSANZ develops the standards. Once a standard is gazetted by FSANZ, it is expected that industry will comply with the standards (within the time allowed by the transition period).

Then, government agencies monitor and enforce food regulation.

Within the food system, these government agencies include the:

- Ministry for Primary Industries, public health units and territorial authorities in New Zealand
- state and territory agencies in Australia and local government authorities
- Department of Agriculture, Fisheries and Forestry in Australia – in relation to food imports.

These food enforcement agencies work together through the Implementation Subcommittee for Food Regulation (ISFR)(FM, 2024b). The role of the ISFR is to develop consistent ways of implementing and enforcing food standards.

Members of ISFR meet regularly to:

- consult with FSANZ
- discuss common ways to implement standards
- develop agreed strategies for consistency in implementing standards
- monitor the safety of the food supply, and
- monitor compliance with food laws.

While ISFR aim to implement standards consistently, member jurisdictions retain the authority to make and implement decisions about compliance and enforcement issues in their jurisdiction.

In the joint food regulation system, the Food Regulation Standing Committee (FRSC) oversees and guides food policy development, including evaluation of regulatory change (FM, 2024c). Implementing government agencies can jointly or individually within their jurisdiction undertake an evaluation of this new standard. See section 3.2 of the 2nd CFS for more information.

References

Supporting documents to 2nd call for submissions

This document references the following supporting documents (SD) to the 2nd call for submissions:

SD1 Safety assessment of caffeine

SD2 Dietary intake assessment

SD3 Social science literature review

SD4 Assessment of caffeine and sports performance

To review the references refer to the P1056 page on the FSANZ website.

All other references are listed below.

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Appendix A – Detailed methodology

This Appendix provides more detail on how figures within this document were calculated, including:

- data collection methods
- assumptions made
- calculation steps.

It is intended to provide a greater level of transparency on the methodology used and to improve stakeholder understanding on how figures were quantified.

Stakeholders are welcome to provide comments on the methodology used.

Market scan of caffeinated sports foods

Market scan search method

To determine the number of sports foods containing caffeine impacted by the proposal, FSANZ undertook a desktop survey of products available for sale online.

The data was collected in August 2024.

In scope were sports foods:

- with caffeine greater than zero
- for sale in Australia and New Zealand (online or in store).

Out of scope were:

- Therapeutic goods, which were excluded where the products were:
  - TGA listed products, clearly labelled with an 'L number'
  - In the format of a therapeutic, for example tablets, capsules or pills (where not clearly labelled as a therapeutic)
- Formulated Caffeinated Beverages (FCBs)
- Products sold direct to consumers from websites outside of Australia or New Zealand.

The search method to find the products was:

1. Access the websites of supplement stores[16], supermarkets[17] and online pharmacies[18]
2. Perform a Google search
3. Perform a subsequent scan of Australian or New Zealand[19] brand websites[20], for all products (or brands) identified by the above steps. All products within a brand website were scanned, unless there were a significant number of products, then products most likely to contain caffeine were scanned.

This search method is similar to that used by Noetic, for the TGA (2020a). Noetic report that the three websites used by Noetic and FSANZ represent 80% of market share in Australia.

[16] Two supplement stores were searched in Australia, and two in New Zealand
[17] Two supermarkets were searched in Australia, and two in New Zealand
[18] One major online chemist was searched in Australia and New Zealand
[19] The websites of international brands were not searched, to exclude products that are not made available for sale in Australia or New Zealand.
[20] A scan was also done of a major supplier, based in New Zealand, which supplied a significant number of imported products to Australia and New Zealand

To ensure the list represented products actually for sale to consumers in Australia and New Zealand, an exclusion method was applied. Products were not included on the list where a product:

- was sold out of all flavours in all stores searched, indicating either:
  - retailers did not intend to restock an imported product
  - manufacturers had discontinued the product
- had no evidence of sale within an Australian or New Zealand website. This was based on:
  - scan of websites, as described above
  - a Google search (for products sold in Australia), top 20 hits
  - searching two supplement websites in New Zealand[21]
- was only found on market places, such as Amazon or eBay[22]
- had insufficient information on the label, for example only a tub with a brand name, with no indication of what the product is, or what it contains.

Sachets were included only where they were sold, and not given away as samples.

At consultation for the 1st CFS, some manufacturers provided information on the number of SKU within their product range. This information was compared to the data found, to assist in validating the data.

Limitations of data collection method

Below are the identified limitations of the data collection method. These limitations may result in either underestimations or over estimations of the number of products impacted.

The identified limitations are as follows.

- Judgement was used by a FSANZ officer to screen products listed on websites based on their name, purpose, and front of pack picture. This may have resulted in some products being incorrectly excluded.
  - For example, products similar in appearance to pre-workout products like BCAAs or creatine, that appeared to be single ingredient products were excluded based on name only and not a review of their ingredients list.
- Due to a lack of an explicit permission, there is no requirement in Standard 2.9.4 to label the presence of caffeine, and therefore it is likely some caffeine containing products were incorrectly excluded
  - For example, many protein products contain minor amounts of caffeine, this may be due to the addition of ingredients like coffee for flavouring
- The caffeine content of many products was not clearly identified or totalled, in some cases judgement was used which may have resulted in a small number of products caffeine content being misclassified as under or over 200 mg
- The labels for some products differed between websites, for example on some websites a product was labelled as Australian made, while the another website the same product had a different label that said the product was made in the USA. In these cases it was assumed the product was made in Australia.
- Key on-product label information was missing for some products. Where this was the case, the following process was followed:
  - search for the product on other websites, to find missing labels,
  - search for the product on the brand's website, to find missing labels,
  - collect information from the product listing, or listing brand website,

[21] Given the author was located in Australia, a Google search would be unlikely provide reliable results on products for sale in New Zealand.
[22] Online market places were excluded due to practical difficulties analysing multiple listings for the one product, across many different products, to determine whether the seller is within scope of the proposal

- collect information from other sources – for example a Google search of the company to determine where they manufacture products.

- Whether products should be captured in the data was not always clear. To overcome this, an assumption was made that a product should be included in the data when it is marketed and/or presents in the same way as a sports food. Some examples of this issue were:
  - online listings showing 'clean' labels, containing only marketing information and missing elements of the actual product label like barcodes, warnings, and 'made in' information
  - only front of pack information presented, the type of food not being listed on the front of pack, and the webpage listing not including this information
  - products in a powdered format labelled as 'formulated caffeinated beverages' (out of scope) that appear to be sports foods (in-scope).

Number of impacted caffeinated sports foods found

Below are some statistics, summarising the data found. SKU is a count of the number of different formats a single product will take, taking into account different flavours and packet sizes and forms.

Number of sports foods found in market scan, by caffeine content

	Over 200 mg per serve	Under 200 mg per serve	Total
Unique products	127	104	232
SKU	719	482	1201

Note: Total is higher due to a small number of products having an unknown total caffeine content

Number of sports foods found in market scan, by country of origin

	Australia	New Zealand	USA	Other
Unique products	100	35	81	16
Proportion	43%	15%	35%	7%

Proportion of impacted products that are out of scope for cost and benefit analysis

As noted in the main body of this document, it is common practice to limit the scope of cost benefit analysis to impacts within the jurisdiction (section 4.2.1).

The market scan found that approximately 42% of caffeinated sports foods (on an SKU basis) for sale on Australian and New Zealand websites was made[23] outside of Australia or New Zealand, and therefore excluded from the analysis.

Proportion of impacted caffeinated sport food product lines that are discontinued, where brand has another compliant product on the market

[23] Whether products were 'made in' was based on the Australian Made or New Zealand Made logos, which means products 'packed in' Australia or New Zealand are counted as 'made' in either country

FSANZ has assumed that all caffeinated sport food product lines containing over 200 mg of caffeine will be discontinued in the following circumstance:

- a brand has a product that is over 200 mg per serve and therefore exceeds the proposed maximum of 200 mg caffeine per one-day quantity
- the same brand has a product that is under 200 mg per serve
- the products are for the same purpose.

This assumption is made because it is less likely that there will be a return on investment in this circumstance.

FSANZ has estimated that approximately 12% of the SKU on the market will be discontinued in this circumstance.

Calculating the cost of relabelling caffeinated sports foods

Relabel cost – MJA estimated per label cost

FSANZ commissioned research from Marsden Jacob Associates (MJA) on the cost of relabelling products, based on a survey of businesses.

The MJA research presents costs across two dimensions, label type and complexity of change (minor, medium or major change). It is expected that the label changes required for this proposal will be either minor or medium.

The relevant costs for this proposal are outlined in the table below.

Label type	Cost, minor change (per SKU)	Cost, medium change (per SKU)
Adhesive label on container (such as a plastic tub)	$3,465	$4,201
Paper based label (such as paper based sachets and sachet pouches)	$2,263	$4,367
Plastic pouch	$7,232	$8,095
Shrink film applied to a container (like a bottle)	$2,764	$4,253

Relabel cost – scale of label changes

The following table describes how each type of change are characterised.

Scale of change	Scope of change
Minor	Label design – text changes only, no change to layout of label Proofing – not required Package redesign – no change to packaging shape / size
Medium	Label design – changes to text and label layout Proofing – required

Scale of change	Scope of change
	No change to label shape / size
Major	Label design – major changes to text and label layout and label shape/size Proofing – required

To determine which 'scale' should be used for the costing, FSANZ randomly sampled 16 Australian or New Zealand product labels (from the market scan) and assessed them against the above criteria. It was found;

- 11 of the products sampled would require a minor change
  - all 11 would require adjusting the layout of the nutrition information panel (NIP)
  - no other label elements were missing, some text may need adjusting
- 5 of the products sampled would require a medium change
  - all 5 would require significant changes to the NIP to the extent that the layout would change, including to remove nutrition information for two servings
  - no products would require a larger label.

Based on these findings, approximately;

- 70% of product relabelling will be at the minor cost
- 30% at medium cost.

Relabel cost – weighted average cost per label

To take account of the different product types, the following weighted average was used.

	Cost, minor change (per SKU)	Cost, medium change (per SKU)
Weighted average cost of relabelling	$3,477	$4,316
Proportion of products in this category	70%	30%

Relabel costs – activity breakdown

The following costs are included in the cost of relabelling.

Activity	Cost, minor change (weighted average, per SKU)	Cost, medium change (weighted average, per SKU)
Administration activities	$722	$653
Label redesign	$1,229	$2,111
Market testing	$0	$85
Develop proof and film/files, engrave plates/cylinders and colour match	$898	$877
Review Label sample	$628	$590
Total, weighted average	**$3,477**	**$4,316**

Assumption – all impacted products that would require relabelling to continue being sold

It has been assumed that all impacted products that remain on the market will need to be relabelled. This is based on a review of products on the market, produced in Australia or New Zealand.

The review did not find a single product label that would not require adjustment. It was common for products to only require minor adjustments. Examples of changes required, based on the market scan, are summarised in the table below.

Labelling requirement proposed	Labelling practices of products on the market don't meet the proposed requirements
'Contains caffeine' statement	• Caffeine not declared in low caffeine FSSF (for example, protein powders with a small amount of caffeine designed for 'shredding')
Declaration of total caffeine content from all sources on the label, under sodium	• Caffeine quantity listed in the nutrition information panel, but not under sodium • Caffeine quantity listed in a separate table • Caffeine quantity not totalled, listed separately by contributing ingredient in nutrition panel • Caffeine quantity not directly provided, instead quantity of caffeine containing ingredient listed in nutrition panel
Warning and advisory statements	• Warning and advisory statement provided differs from the P1056 proposed approach

Relabelling cost – final result

The final cost is presented below.

The cost is presented as a range, as there is considerable uncertainty about how businesses will behave in response to the proposal. A range of scenarios has been tested, which are summarised in the table below.

The scenarios show a range, where no product variants are discontinued, to a scenario where up to half of all product variants are discontinued.

Relabelling products – total cost

	Medium scenario	**Low scenario**	**Conservative scenario**
Proportion of product lines withdrawn	50%	25%	0%
Number of products relabelled	483	725	966
Total estimated relabelling cost	**A$1.8m**	**A$2.7m**	**A$3.7m**

Note that, as explained above, this cost is the for Australian and New Zealand producers only.

Calculating reformulation costs

Reformulation costs – per product recipe cost

The cost per product recipe is based on an estimate made by the Noetic group, for the TGA RIS (2020a).

Noetic estimated that a complex reformulation of a sports food would take 3,360 minutes (or 56 hours) per reformulation. This was based on interviews with industry stakeholders.

FSANZ has assumed that removing caffeine will be complex, and won't be as simple as removing (or reducing) caffeine containing ingredients. Caffeine impacts on the perception of sweetness (Keast et al, 2011) and therefore when caffeine is removed the amount of sweeteners need to be carefully reduced for a product to have the same perceived sweetness level.

The cost per hour is summarised in the table below.

Reformulation cost – estimated cost per hour

Cost category	Cost (per hour)	Source
Labour costs[24] (LC) *Average hourly wage*	A$60.60[25]	ABS (2024)
Non-wage labour costs *Overhead costs, on an hourly basis*	$1.75 \times LC$	OIA (2024)
Adjusted labour costs	A$106.05	NA

The total cost per product line is summarised below.

Reformulation cost – total cost per product

Item	Value
Time required to reformulate product recipe – hours	56
Adjusted labour cost – per hour	A$106.05
Total cost – per product recipe	**A$5,939**

Reformulation costs – proportion of products reformulated

The number of products reformulated is the number of unique product formulations or recipes.

The number of products expected to be reformulated is based on the market scan, adjusted using the same methodology previously described.

However, not all products are over the 200 mg caffeine one-day quantity, therefore only a proportion of products will require reformulation.

The market scan indicated that approximately 60% of products on the market are over the limit.

Reformulation costs – final result and sensitivity analysis

The final estimated reformulation cost is presented in the table below.

The cost is presented as a range, as there is considerable uncertainty about how businesses will behave in response to the proposal. A range of scenarios has been tested, which are summarised in the table below.

Sensitivity analysis of cost of reformulating products

	Medium scenario	Low scenario	Conservative scenario

[24] Labour costs for 'professionals' used. Professionals are defined by the ABS – "Professionals perform analytical … tasks through the application of theoretical knowledge and experience in the fields of… engineering, the physical and life science..."
[25] May 2023 data, the latest data at the time of writing in August 2024

Proportion of product varieties (flavours, pack sizes) withdrawn[26]	50%	25%	0%
Number of products reformulated	213	320	426
Total estimated reformulation cost	A$1.3m	A$1.9m	A$2.5m

Note that, as explained above, this cost is the for Australian and New Zealand producers only.

Calculating the break-even analysis

The break-even analysis was calculated using a model with the following parameters:

- 10 year time period, based on standard assumptions that regulations have a 10 year life
- all costs occur in year 0
- benefits occur over 10 years
- a discount rate of 7%, based on OIA requirements for cost and benefit analysis (OIA 2023b)
- the number of consumers each year is based on:
  - United Nations projections for the adult population of Australia and New Zealand (UN, 2024)
  - the proportion of consumers who consume sports foods, based on the 2023 FSANZ consumer insights tracker (FSANZ, 2024c)
  - the proportion of sports food sales that are non-protein products, as a proxy for caffeine containing products.

A growth rate was not applied to the proportion of consumers consuming sports foods, due to difficulties in reliably forecasting this over ten years.

With the above parameters, a 'goal seek' analysis was used to find the benefit per consumer required for the total benefits to equal costs, factoring in the change in consumer numbers over the ten years (as a result of population growth only) and the discount rate.

[26] Product lines refer to individual SKU. Each unique variation of a product has a single SKU. For example, one brand of a product can have several different package types, package sizes, and flavors.