

18 October 2013

Caffeine Options Paper Consultation  
C/- Food Regulation Secretariat  
PO Box 4  
WODEN ACT 2606

Via e-mail: [foodregulationsecretariat@health.gov.au](mailto:foodregulationsecretariat@health.gov.au)

Dear Secretariat,

**RE: SUBMISSION TO THE REVIEW OF CAFFEINE IN FOODS**

The Australian Beverages Council (the Beverages Council) is the peak body representing the \$7 billion non-alcoholic beverage industry. The Beverages Council provides a single, united industry voice to a range of stakeholders including government, non-government organisations, media and general public. Membership of the Beverages Council comprises over 95% of the non-alcoholic industry's production volume, and is comprised of multi-national companies and small- and medium-sized businesses. A list of members can be found in Appendix One.

The Beverages Council thanks the Secretariat for providing an opportunity to contribute its views, and those of its members, to the Review of Caffeine in Foods (the Review). Our detailed submission can be found in Appendix Two.

In summary, the Beverages Council recommends to the Review that Option Two of the listed options be adopted, because it:

- allows for clear guidance for FSANZ in developing and reviewing caffeine standards in the future, and also increased opportunities for harmonisation between Australian and New Zealand standards in this area
- should ensure that any review of caffeine permissions is based on risk –based evidence and not perceptions and / or emotions.
- allows consideration of other caffeinated products consumed by vulnerable groups, such as chocolate/confectionery/baked goods/cereal and products that consumers do not traditionally consider to contain caffeine such as corn chips and chewing gums.



The Beverages Council emphasises that any change to the policy could have the potential to impact industry significantly, dependent on the path FSANZ takes after the change. The Beverages Council and its members would request that industry consultation is kept to the fore in any deliberations on next steps following any potential change.

Again, on behalf of its members, the Beverages Council thanks the Secretariat for the opportunity to contribute this submission. Please don't hesitate to contact me directly on 02 9662 2844 or [geoff.parker@australianbeverages.org](mailto:geoff.parker@australianbeverages.org) should you require any additional information and we look forward to further consultation on this issue.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'G Parker', written in a cursive style.

**Geoff Parker**  
Chief Executive Officer

Encl.

## Attachment One - Membership of Australian Beverages Council

### **Bottlers and Distributors**

100% Bottling Company P/L  
Alpine Beverages Pty Ltd  
Aquasplash P/L  
Bayer Australia Limited  
Beloka Water Pty Ltd  
Bertshell Pty Ltd  
Bevco Pty Ltd  
Bickfords Australia Pty Ltd  
Big Springs Riverina  
Big Wet Natural Spring Water  
Blue Mountains Natural Spring Water  
Bundaberg Brewed Drinks Pty Ltd  
Cantarella Bros Pty Ltd  
Cascade Brewery Co Pty Ltd  
CB Juice  
Central Burnett Fruit  
Coastal Springs Pty Ltd  
Coca-Cola South Pacific  
Cooks Soft Drinks  
Cool Aqua Springs  
Don Kyatt Pty Ltd  
Eastcoast Beverages  
Frezco Beverages  
Fruco Beverages Ltd  
Grove Fruit Juice P/L  
HJ Heinz Australia  
Hopes Goulburn Cordials  
IQ Beverages  
Jolt Corporation Australia Pty Ltd  
Juicy Isle Pty Ltd  
Just Squeezed Fruit Juices  
Just Water  
Lillyman Bros  
Lion  
Lithgow Valley Springs  
Mildura Fruit Juices  
Mountain Fresh Fruit Juices

Mountain H2O  
Nippy's Fruit Juices P/L  
Nudie Foods Australia Pty Ltd  
NZ Quality Waters Ltd  
PET Technologies Ltd  
Pleass Beverages  
Red Bull Australia Pty Ltd  
Saxby's Soft Drinks Pty Ltd  
Waterfarms Australia Pty Ltd  
Wet Fix Pty Ltd  
Wimmer Marketing Pty Ltd  
Schweppes (Aust) Pty Ltd

### **Suppliers**

Amec Plastics Ltd  
Aquatek Products Pty Ltd  
Bev-Cap Pty Ltd  
Beverage Holdings Pty Ltd  
Black Mount Spring Water  
Brooke-Taylor & Co  
Bundaberg Sugar Ltd  
Capitol Ingredients  
CHEP  
CHR Hansen  
Cormack Packaging Pty Ltd  
Correct Food Systems  
Cuno Pacific Pty Ltd  
Directus Australia Pty Ltd  
Eaton Filtration  
Ecolab Pty Ltd  
Ed Ten Water  
Elkay Pacific Rim (M) Sdn Bhd  
Idexx Laboratories  
Firmenich Ltd  
Fruitmark  
Interaust Foods Pty Ltd  
International Flavours and  
Fragrances Inc  
Invita Australia

Johnson Diversey  
JNI Pallet Systems  
Kerry Group / Mastertaste  
KHS Pacific Pty Ltd  
Lloyd's Register Quality Assurance  
Manildra Harwood Sugars  
Matthews Australasia Pty Ltd  
MeadWestvaco  
Millipore Australia Pty Ltd  
National Measurement Institute  
NCSI  
Neverfail Springwater Ltd  
Norco Foods  
Nugan Quality Foods  
O-I Asia Pacific  
Pall Corporation  
Peacock Bros Pty Ltd  
PureCircle Australia Pty Ltd  
Quality Assurance International (QUASI)  
Roxset Australia  
Scholle Industries Pty Ltd  
Sensient Technologies Aust Pty Ltd  
Sopura Australia Pty Ltd  
Splatt Engineering Group  
Sugar Australia Pty Ltd  
Tate & Lyle ANZ Pty Ltd  
The Product Makers (Aust) Pt Ltd  
Tradex NZ & Australia  
Visy Beverage Packaging  
Vitality Brands  
Waterworks Australia Pty Ltd  
Woodbine Park (Operations) Pty Ltd  
Zymus International Ltd



Submission to Food Regulation Secretariat –  
Caffeine Options Paper Consultation

Australian Beverages Council

Sydney, October 2013

**Question 1: Can you provide any evidence about the level of compliance with and/or effectiveness of these industry codes? (Refer [chapter 4.4](#))**

Members of the Australian Beverages Council (Beverages Council) take a responsible and proactive stewardship approach to the category in which they market, manufacture and distribute over 99% of the volume for energy drinks and 95% of the volume for energy shots<sup>1</sup>. While the detail on the Beverages Council member self-regulation is provided below, the practical application of these instruments means that:

- energy drink manufacturers and distributors do not directly market children;
- energy drinks are **not** sold or advertised in primary or high schools;
- no promotional activities are undertaken that encourage excessive consumption of energy drinks;
- labels do not promote mixing with other beverages.

Furthermore, it is worthy of note that energy shot products are a virtually non-existent product category. Members of the Beverages Council (and the NZJBA) have introduced a voluntary undertaking to cease manufacturing energy shots effective 1 July 2013, with expected removal of existing stock in trade from the market by early 2014.

### Energy shots

In late 2009 the respective peak bodies for Australia and New Zealand identified a misalignment between the regulatory framework within the New Zealand Dietary Supplement regulations and the broader community's expectations for the energy shot category. Embracing the stewardship approach mentioned above, the peak bodies and their members developed the voluntary [Industry Code – Manufacturing and Marketing of Energy Shots](#) (the Code) which was finalised on 29 April 2010 and is believed to be the world's first such guidance document for energy shots. It is noteworthy that aspects of the Code were used to develop the [UNESDA Shot Code](#) launched in mid-2011.

The Code's development was a significant achievement amongst members and reaffirmed the industry's commitment to produce and market these products responsibly. Neither the Beverages Council (nor the NZJBA) is aware of any contravention to the guidelines contained in the Code and both organisations contend that the Code was very effective in providing manufacturers and distributors with a high level of voluntary standards for manufacturing and marketing over above those prescribed in New Zealand law and more reflective of the Formulated Caffeinated Beverages standard 2.6.4 in the Food Standards Code for energy drinks.

### Energy drinks

In late 2010 members of the Beverages Council (and NZJBA) began developing a set of higher standards for the marketing and promotion of energy drinks<sup>2</sup> in response to feedback from certain stakeholders with respect to the products' availability and access by vulnerable groups.

On 16 May 2011, the category's guiding document [Energy Drinks – An Industry Commitment](#) (the 'Commitments') was finalised and duly adopted by members of both organisations, representing over 99% of the category's volume and market share.

The Beverages Council (and NZJBA) would purport that the level of compliance to the Commitments is as close as possible to 100% which is reflective of the involvement on

occasion of third parties eg retailer promotions. With regards to the effectiveness of the Commitments, in particular consumption by children, a range of statistics show that:

- 80% of energy drink consumers are 20 years or older<sup>3</sup>
- Total caffeine intake from energy drinks for 14-16 year olds was only 3.8%<sup>4</sup>
- Total caffeine intake from energy drinks for 15-19 year olds was just 6%<sup>5</sup>
- Total caffeine intake from energy drinks for 2-3, 4-8 and 9-13 year olds was 0%, 2.5% and 1.2% respectively<sup>4</sup>
- Highest total caffeine intake from energy drinks for males was 19-30 years old at 8%<sup>6</sup>
- Highest total caffeine intake from energy drinks for females was 19-30 years old at 6%<sup>6</sup>

For any dietary contribution of caffeine for 2-13 year olds, accidental paediatric ingestion would need to be considered for any amounts actually consumed via energy drinks.

As these and other statistics throughout the submission show, the guidelines have been extremely effective in ensuring younger children especially are discouraged from purchasing energy drinks and as such, receive only small amounts of caffeine in their diet from these products particularly in comparison to other caffeine-containing products with no regulation eg coffee, tea, cakes/biscuits and confectionery.

The scope for the use of self-regulation is acknowledged by Overarching Strategic Statement for the Food Regulatory System, particularly in circumstances where the issue relates to a consumer values issue. Overall, the Paper details community concerns and perceptions on the one hand regarding energy drinks in particular, but then illustrates through factual data that overall contribution from energy drinks to caffeine consumption is marginal and therefore the evidence base for these concerns is non-existent.

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<sup>1</sup> Members of both organisations have introduced a voluntary undertaking to cease manufacturing energy shots effective 1 July 2013, with expected removal of existing stock in trade from the market by early 2014.

<sup>2</sup> As defined under Standard 2.6.4 - Formulated Caffeinated Beverages, Food Standards Code.

<sup>3</sup> Averaged data from two industry samples - Red Bull Australia (82%) and Coca-Cola Amatil (79%)

<sup>4</sup> Food Regulation Policy Options Paper – The Regulation of Caffeine in Foods, Table 3b p14, 2013

<sup>5</sup> Galaxy Poll commissioned by Australian Beverages Council: *Caffeine consumption – Australia*, August 2013

<sup>6</sup> Food Regulation Policy Options Paper – The Regulation of Caffeine in Foods, Table 5 p16, 2013

**Question 2: Are there any international regulations of relevance that have not been provided here or in Appendix 3? If so, please provide references. (Refer [chapter 4.5](#))**

The existing regulatory regime for energy drinks in Australia and New Zealand is multi-pronged and is comprised of both a formal and dedicated food standards code, the broader Policy Guideline, and also industry self-regulation. There is likewise a structured and dedicated regime for kola type beverages.

The gaping hole in the management of caffeine in the food supply relates to novel products and those foods like coffee, tea and confectionery where caffeine is naturally occurring.

- UNESDA Shot Code (2011) – referenced in response to Q1. [UNESDA Shot Code](#)
- British Soft Drink Association Voluntary Code of Conduct (2002) for Caffeine levels above 150ppm. <http://www.britishsoftdrinks.com/default.aspx?page=863>
- South Korea

Recommended upper daily levels of caffeine have been set by the Korean Food and Drug Administration; for adults less than 400mg of caffeine per day, for pregnant women less than 300mg and for children less than 2.5mg/kg of body weight.

400mg of caffeine per day is a view that is also accepted by both the United States Food and Drug Administration and Health Canada<sup>1</sup>.

- Taiwan

Upper limit of caffeine in 320mg/L for beverages other than tea and coffee.

- Mexico  
Regulations do not foresee any upper limit for the addition of caffeine to beverages. However, flavoured non-alcoholic beverages containing more than 20mg/100mL are considered 'beverages with added caffeine', which must be printed on the label.

- Brazil

Beverages containing 80mg of caffeine are considered 'liquid compounds ready for consumption' and the regulations foresee an upper limit of 350mg/L

- Chile

Beverages containing 80mg of caffeine (320mg/L) were classified as sports drinks and the regulation does not foresee an upper limit but rather states that producers should not recommend on their labels a daily consumption higher than 500mg of caffeine.

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<sup>1</sup> *It's Your Health – Caffeine*, March 2010, Health Canada

**Question 3: Are there any other relevant data not provided here? If so, please provide details and references. (Refer [chapter 4.7](#))**

The Beverages Council requests its concerns with regards to chapter 4.7 are noted. Specifically:

- Comparison of energy drinks to soft drinks, water and sports drinks which are all well-established categories. The volumetric increase in energy drinks started from ostensibly a zero base which naturally meant that their growth would be strong relative to other established categories. While they grew rapidly, they are still a niche market with little contribution to overall caffeine consumption and represent approximately 2.5% of the total non-alcoholic ready-to-drink category.
- Data source includes 'Convenience & Impulse Retailing' and 'Palmer 2009' which are both secondary source trade magazines and not primary sources. Furthermore, the reference in paragraph 2 to 'a 25 per cent increase in value' is a combined figure for both energy **and** sports drinks not simply energy drinks alone as the report is drafted.

The data from the Australian Health Survey, expected to be available in the first half of 2014, will offer useful insights into up-to-date caffeine intakes across a wide range of population groups. The Beverages Council strongly urges Ministers to reschedule the review of the policy until after this data becomes available to ensure any future policy development is based off the most current information at hand.

At this stage, flavoured milks (which have added caffeine through the addition of coffee powder), iced tea and Sports Foods all have a marked difference in caffeine content even within the same branding in Australia and New Zealand.

Notable studies and polls listed below show caffeine exposure levels from major identified sources. Given these findings, it is clear that the consumer (and indeed the vulnerable or sensitive sub group) have little/no guidance as to the amount of intake given this variation in caffeine concentration of similar products. This would suggest that population guidance through clearer labelling of all caffeine-containing products would be useful. In fact, 89% of Australians say that all caffeinated products should declare the amount of caffeine on the label and 65% of Australians say that coffee shops and cafes should have caffeine content on menus and at point of sale<sup>1</sup>.

- Food Chemistry Toxicology (2007) Ben Debrow et al. Study on consumer exposure to caffeine from retail coffee outlets

Summary doubts previous exposure due to HIGH dose variation for same "Espresso / short black" coffee ordered from 97 samples (Gold Coast vendors) Mean 106 mg/serve (Range 25 – 214 mg / serve) (24.7% above 120mg/serve but 12.3% above 167 mg/serve).(Greater sampling needed)

Data is reflected by equivalent UK study which then led to the following extended study:

- Journal of Food Consumption and Analysis (2012). Ben Debrow et al. An Examination of Consumer Exposure to Caffeine from Commercial Coffee and Coffee Flavoured Milk. (continued broader study from above).

Cluster Sampling from 4 major Aus cities. 131 Espresso vendors and 20 coffee-flavoured milk from national grocery distributors.

<sup>1</sup> Galaxy Poll for the Australian Beverages Council, August 2013: *Caffeinated drinks, and attitudes to energy drinks – Australia*.

Espresso: Mean 107mg/serve (+/-37mg/serve) concentration 2250 mg/L (+/-1030 mg/L).

120mg/serve but 13.1% above 165mg/serve)

Coffee-Flav Coffee: Mean 99mg/serve (+/-50mg/serve) (carton) concentration 193mg/L(+/-90mg/L)

This extended study strongly supported original findings, which indicated that the probability of consumer exposure to high caffeine doses from popular coffee beverages in Australia is greater than previously reported.

In August 2013, the Australian Beverages Council commissioned a Galaxy Poll into caffeinated drinks and attitudes to energy drinks which involved the sampling of 1,105 Australians aged 15-49 yrs surveyed throughout all states. This comprised a nationally representative sample set.

The Galaxy Poll revealed a range of interesting insights into both the caffeine consumption across the population, as well as their views on caffeine-related issues.

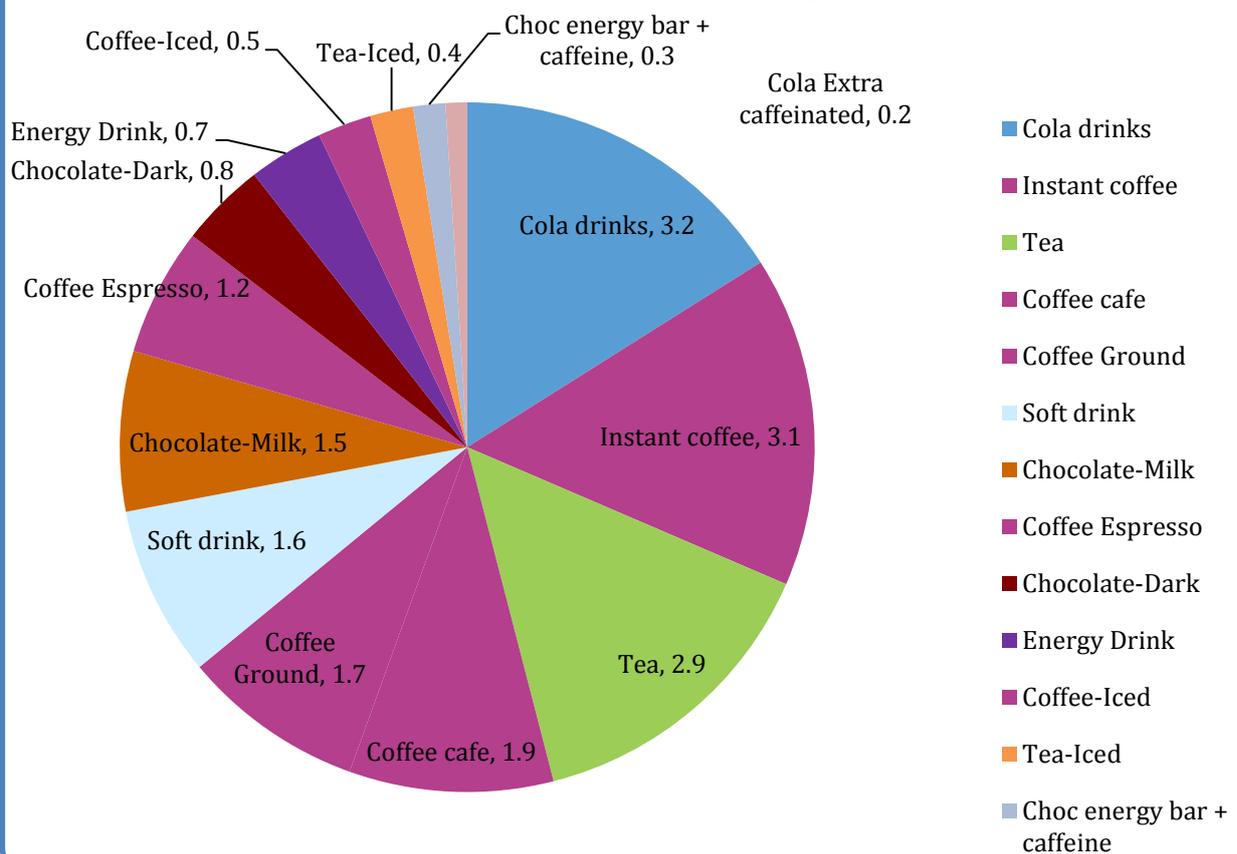
For example, in relation to consumption of caffeinated products, the Poll asked:

*What were the number of caffeinated drinks consumed in the last 7 days?*

Results across the population, as outlined below and in the following table, were:

- **8.4 coffee drinks** (3.1 instant coffee, 1.9 coffee café, 1.7 ground coffee, 1.2 Espresso ,1.5 Iced coffee)
- 3.2 Cola Drinks
- 2.9 Green / Black Tea
- 0.7 Energy Drinks

## Number consumed Last 7 Days



Source: Caffeinated drinks, and attitudes to energy drinks – Australia, Galaxy Polly for the Australian Beverages Council

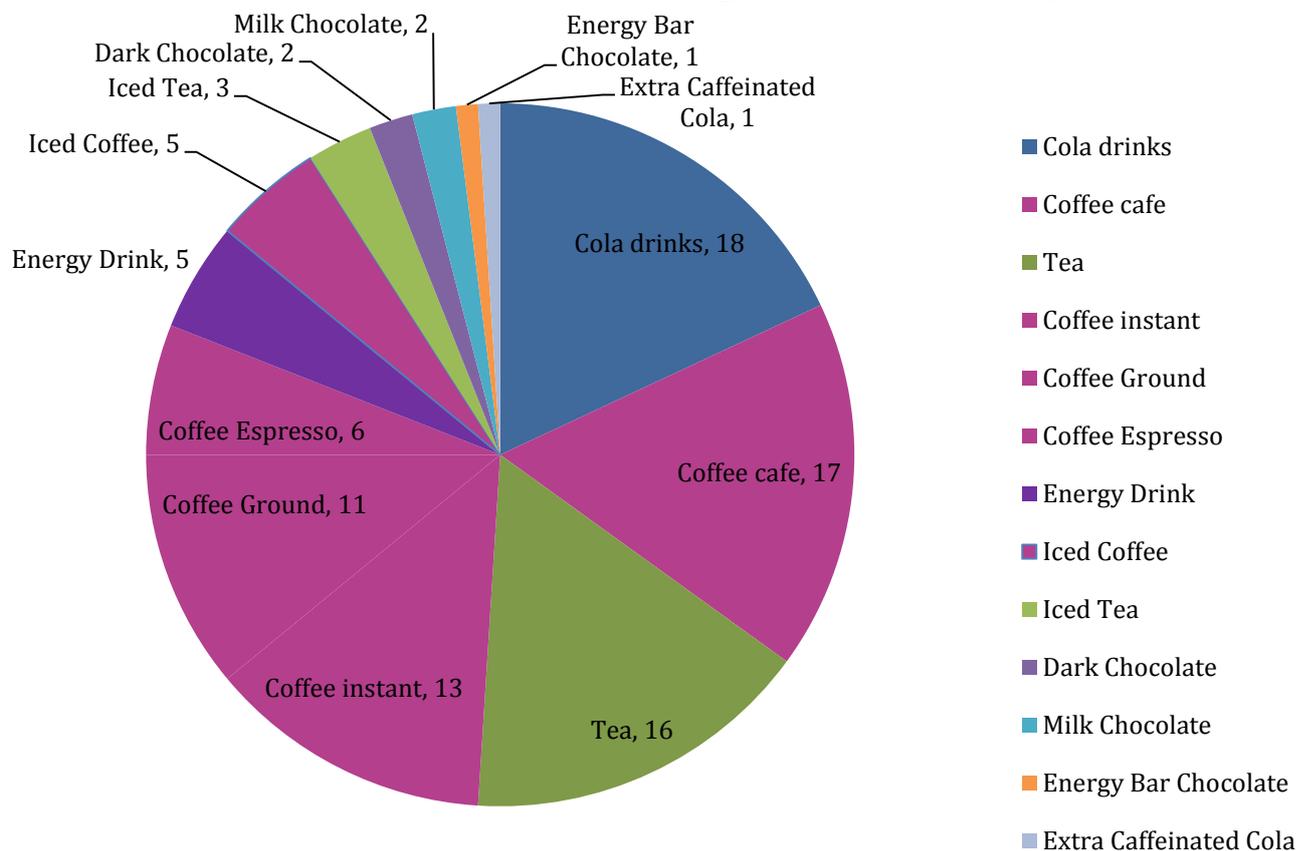
An additional question probed these results further, asking respondents what was the share of the various caffeinated beverages consumed against total caffeine consumption. Specifically:

### Share of caffeine consumption in last 7 days:

- **51% subtotal of all coffee drinks** (33% in ages 15-19, 48% in ages 20-29 yrs)
- 18% Cola drink (21% in ages 15-19 yrs)
- 17% coffee from coffee shop
- 5% of caffeine comes from energy drinks (6% in ages 15-19 yrs, 7% in ages 20-29 yrs).

These results are detailed in the following table:

## Share of caffeine consumption Last 7 Days



Source: Caffeinated drinks, and attitudes to energy drinks – Australia, Galaxy Polly for the Australian Beverages Council

Useful data on the various caffeine levels in popular caffeinated beverages found both in the market and those surveyed in the Beverages Council's Galaxy Poll can be found in a number of sources. In particular, the Australian Institute of Sports [comparison chart](#) is a useful reference and provides caffeine ranges for these products.

In addition, the Australian Beverages Council website contains a range of information on caffeine and the [caffeine content](#) of popular beverages.

In reference back to the Galaxy Poll results, similar results have been indicated in recent USA studies, for example:

- Penn State: Beverage Caffeine intakes in the U.S.(2010-2011) by D.C.Mitchell et al.

National survey of 37,815 consumers (aged greater than 1 yr old) by means of a 7 day diary intake format (with parental completion for 1-12yrs age).

### RESULTS:

- 84% consume at least 1 caffeinated bev/day with a mean daily intake 165mg (comb)
- Daily Caffeine: Intake highest in 50-64 yrs @ 223mg (2.2mg/kg body mass)
- Daily Caffeine: Intake lowest <6 yrs @ 36 mg and 6-12 yrs( 0.9 mg/kg body mass)

- The 90<sup>th</sup> percentile intake was 379 mg (comb) ranging from 79mg at 6-12yrs to 467mg in 50-64 yrs.
- Coffee was the primary contributor in all age groups but more significant above 18yrs.
- CSD and tea beverages were significant caffeine sources in younger groups.
- The percentage of energy drink users was less than 10% and contribute minor overall in all age groups.

**Question 4:** Can you provide any additional information about the use of caffeine as an ingredient in foods and/or the formulation of products using caffeine or caffeine containing ingredients. If so, please provide details. (Refer [chapter 4.9](#))

With regards to sugar in beverages, it must be restated that:

- Soft drink and energy drink manufacturers both provide sugarless options as a part of their product ranges.
- Sugar in energy drinks is not linked to caffeine and are included as an ingredient because it provides an immediate source of energy. If consumers do not want sugar, they can choose a sugar-free option.

With respect to caffeine, there is an extensive range of food that now contains caffeine by addition via natural occurring ingredients:

- Flavoured milks which have added caffeine through the addition of coffee powder, cocoa, chocolate, guarana and yerba mate.
- Confectionary, sports foods, breakfast cereals, baked goods, snack foods, sports/weight loss supplements, chewing gums and breathe mints (even body washes, hair shampoo cosmetics, skin care and exercise clothing) to list just a few, that are present or soon to arrive in the market with caffeine contents that would be a concern for vulnerable consumer groups.

Whilst some of these products are not currently in the Australian or New Zealand market, under the current policy they have the potential to if they contain caffeine from a natural source. More information on a range of caffeine containing products can be found [here](#).

Chapter 4.9 refers to sugar in foods containing caffeine, however, only beverages have been included. The Beverages Council makes a clear points that other foods that contain caffeine also contain sugar eg confectionery and coffee milks. In addition, a number of consumers often add sugar to their coffee and tea with no corresponding data provided.

Caffeine in colas is an essential flavour component and not linked to sugar levels at all. For example: Pepsi Max has 120mg/litre and Pepsi regular 107mg/litre caffeine.

With regards to caffeine in commercial coffee products, Desbrow's paper states that pre-packaged coffee-flavoured milks are also likely to contribute to the caffeine intake of many individuals, including children and that given there are considerable variation in levels of caffeine contained in commercial coffee products, there can be a variance of between 25-214mg of caffeine per serve within the same range of drinks.<sup>1</sup>

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<sup>1</sup> Desbrow, B., Henry, M., and Scheelings, P., (2012). An examination of consumer exposure to caffeine from commercial coffee and coffee-flavoured milk, Journal of Food Composition and Analysis, pp1-20

A more comprehensive list can be found on the Canadean Ingredient Database and other Novel Caffeine Ingredients in the following table.

Ingredient	Company	Score
Bevrance® Natural caffeine	DYNADIS SARL	Not Scored
Caffeine	BASF SE	25
Caffeine Anhydrous	BASF SE	25
Caffeine Natural 90% Powdered Extract (ER800)	Ecuadorian Rainforest LLC	Not Scored
Caffeine Powder (ER799)	Ecuadorian Rainforest LLC	Not Scored
Caffeine[3983]	Shandong Longlive Bio-technology Co., Ltd.	Not Scored
Chai Tea Spice (caffeine free)	Rudolf WILD GmbH & Co. KG	Not Scored
Coffee (Caffeine Free) Type Flavor, Natural (Organic NOP)	Rudolf WILD GmbH & Co. KG	Not Scored
CoffeeBerry® Energy Family: 50% Caffeine Soluble (N920)	Futureceuticals, Inc	Not Scored
CoffeeBerry® Energy Family: 70% Caffeine (N920.1)	Futureceuticals, Inc	Not Scored
Green Tea 0.1% – 50% Caffeine	Amax NutraSource, Inc.	Not Scored
Guarana 22% Water Soluble, 22% Alkaloids (Caffeine)	GCI Nutrients, Inc.	22
InnovaTea® Natural Caffeine 95%	NutriScience Innovations, LLC	24
Natural Caffeine	EPC Natural Products Co., Ltd.	Not Scored
Yerba Mate 2% Caffeine 20% Poly Powdered Extract (ER1389)	Ecuadorian Rainforest LLC	Not Scored
Yerba Mate 30% Caffeine (green) Powdered Extract (ER1393)	Ecuadorian Rainforest LLC	Not Scored



**Question 5: Is there any other relevant evidence relating to the risks associated with consuming caffeine not provided here or in the listed references? If so please provide details and references. (Refer [chapter 4.13.4](#))**

With regards to chapter 4.13.4, the Paper notes that the CED Review found no high-quality scientific studies that clearly demonstrated a causal link between energy drink exposure and serious adverse health effects. This section also references reports to the NSW Poisons Information Centre, January 2004-Dec 2010 as cited in Naren Gunja, Jared A Brown, Energy drinks: health risks and toxicity, MJA 2012; 196: 46–49 doi: 10.5694/mja11.10838.

Observations of the Gunja paper are as follows:

- This paper is about the side-effects of caffeine over-consumption overall. There is no evidence that the 80 mg of caffeine consumed through an energy drink is any different from the 80 mg of caffeine consumed through a cup of coffee. It is difficult to see why this report does not take a similar approach to coffee
- The symptoms recorded (gastrointestinal upset, and sympathetic overdrive) are the well-known side effects related to over-consumption of caffeine generally
- Overall calls regarding energy drinks in 2010 (65) comprise less than 0.001% of total calls (110 000) to the NSW Poisons Information Center
- From a total of the reported 217 recreational energy drink exposures between 2004 and 2010 almost half (i.e. 100) co-ingested other substances, making their consumption of energy drinks potentially irrelevant
- The statement 'A typical can of energy drink may contain up to 300mg of caffeine, from added caffeine and natural sources such as guarana' is factually incorrect, as under the applicable Australian Standard 2.6.4 the maximum amount of caffeine per litre is 320mg/l which leads to a maximum caffeine content, from all sources, for a typical can (250ml / 500ml) of 80mg to 160 mg per can.

More broadly, the risks and benefits of caffeine consumption outlined in the Paper are not based on a thorough review of the available evidence of caffeine. As such this document does not provide a complete picture of the issues surrounding caffeine intake

The following recent studies have identified risks associated with caffeine consumption:

- Food Additives and Contaminants (2003, Vol.20, No.1, 1-30). P. Nawrot et al 2002, Effects of Caffeine on Human Health.

The data showed that reproductive-aged women and children are “at risk” subgroups who may require specific advice on moderating their caffeine intake.

Based on available evidence, it is suggested that the reproductive-aged women should consume less than 300mg caffeine per day (equiv to 4.6mg/kg body wt in a 65kg person), while children should consume less than 2.5 mg/kg body wt per day.

- Journal of Food Science, Vol.75, no.3, pp.R77 Heckman MA et al 2010, 'Caffeine (1, 3, 7-trimethylxanthine) in Foods: A comprehensive review on consumption, functionality, safety and regulatory matters'

Although coffee intake slightly increases blood pressure and plasma concentrations of homocysteine and cholesterol, there is no association with the incidence of hypertension or promoting the development of atherosclerosis in the general population

Several authoritative regulatory agencies around the world have reviewed, regulated and authorized the addition of caffeine to specific beverages where caffeine does not occur naturally. Such addition was generally authorized up to levels of caffeine of 350 mg/L, which are comparable to those provided by coffee and yerba mate. Additionally, some regulatory agencies have set guidelines on caffeine daily intakes up to 450mg/day for adults.

As a category, the voluminous nature of beverages means that intake of caffeine is dose-limiting. This is particularly the case when compared to products that offer direct caffeine delivery such as caffeine inhalers, caffeinated dissolvable strips, caffeine pills, caffeinated gum, and caffeinated mints.

**Question 6: Is there any other relevant evidence relating to the positive effects of caffeine not provided here or in the listed references? If so, please provide details and references. (Refer [chapter 4.13.6](#))**

According to Scientific Opinion of EFSA Panel on Dietetic Products, Nutrition and Allergies, the following benefits for caffeine have been established:

- Increased alertness<sup>2</sup> including “cognitive and mental performance”, “mental and physical stimulant effect”, “mental state and performance”, “mental performance (where mental performance stands for those aspects of brain and nerve functions which determine aspects like concentration, learning, memory and reasoning, as well as resistance to stress)”, “mental performance and cognitive function (enhances mental alertness during intense muscular activity)”, and “mental performance”. The target population is assumed to be the general population. The EFSA Panel on Dietetic Products, Nutrition and Allergies considers that increased alertness might be a beneficial physiological effect.

In weighing the evidence, the Panel concluded that there was good consensus on the role of caffeine in increasing alertness, measured as speed of reaction times, in healthy individuals of both sexes, at doses of at least 75 mg. Therefore, on the basis of the data presented, the Panel concluded that a cause and effect relationship has been established between the consumption of caffeine and increased alertness.

- Increased attention<sup>3</sup> “cognitive and mental performance”, “mental performance (where mental performance stands for those aspects of brain and nerve functions which determine aspects like concentration, learning, memory and reasoning, as well as resistance to stress)”, “mental performance and cognitive function (enhances mental alertness during intense muscular activity)”, and “invigoration of the body”. The target population is assumed to be the general population. The EFSA Panel on Dietetic Products, Nutrition and Allergies considers that increased attention is a beneficial physiological effect.

In weighing the evidence, the Panel concluded that there was good consensus on the role of caffeine in increasing attention, measured by a range of psychometric tasks, in healthy individuals of both sexes, at doses of at least 75 mg. The Panel, therefore, concluded that a cause and effect relationship has been established between the consumption of caffeine and increased attention.

- Increased endurance<sup>4</sup> including “physical performance (short term and endurance activities)”. The target population is assumed to be adults performing endurance exercise.

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<sup>2</sup> EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on the substantiation of health claims related to caffeine and increased fat oxidation leading to a reduction in body fat mass (ID 735, 1484), increased energy expenditure leading to a reduction in body weight (ID 1487), increased alertness (ID 736, 1101, 1187, 1485, 1491, 2063, 2103) and increased attention (ID 736, 1485, 1491, 2375) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2011; 9(4):2054. [29 pp.]. doi:10.2903/j.efsa.2011.2054. Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

<sup>3</sup> EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on the substantiation of health claims related to caffeine and increased fat oxidation leading to a reduction in body fat mass (ID 735, 1484), increased energy expenditure leading to a reduction in body weight (ID 1487), increased alertness (ID 736, 1101, 1187, 1485, 1491, 2063, 2103) and increased attention (ID 736, 1485, 1491, 2375) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2011; 9(4):2054. [29 pp.]. doi:10.2903/j.efsa.2011.2054. Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

The EFSA Panel on Dietetic Products, Nutrition and Allergies considers that an increase in endurance performance is a beneficial physiological effect.

In weighing the evidence, the Panel concluded that the evidence showed an effect of caffeine consumption on endurance performance at doses of at least 3 mg/kg body weight administered at least one hour prior to exercise, and after at least one day of caffeine withdrawal in habitual caffeine consumers. Therefore, on the basis of the data presented, the Panel concluded that a cause and effect relationship has been established between the consumption of caffeine and an increase in endurance performance.

- Endurance capacity<sup>5</sup> including “supports exercise performance (reduction in perceived exertion, improved time to exhaustion and exercise capacity)”. The target population is assumed to be adults performing endurance exercise. The EFSA Panel on Dietetic Products, Nutrition and Allergies considers that an increase in endurance capacity is a beneficial physiological effect.

In weighing the evidence, the Panel concluded that the data showed an effect of caffeine consumption on endurance capacity at doses of at least 3 mg/kg body weight administered at least one hour prior to exercise, and after at least 12 hours of caffeine withdrawal in habitual caffeine consumers, and that evidence on a plausible mechanism by which caffeine could exert the claimed effect has been provided. Therefore, on the basis of the data presented, the Panel concluded that a cause and effect relationship has been established between the consumption of caffeine and an increase in endurance capacity.

- Reduction in the rated perceived exertion / effort during exercise<sup>6</sup> including “supports exercise performance (reduction in perceived exertion, improved time to exhaustion and exercise capacity)” and “reduces perception of effort”. The target population is assumed to be adults performing endurance exercise. The EFSA Panel on Dietetic Products, Nutrition and Allergies considers that a reduction in the rated perceived exertion/effort during exercise is a beneficial physiological effect.

In weighing the evidence, the Panel concluded that the data showed an effect of caffeine consumption on ratings of perceived exertion during exercise at doses of at least 4 mg/kg body weight administered at least one hour prior to exercise, and after at least 12 hours of

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substantiation of health claims related to caffeine and increase in physical performance during short-term high-intensity exercise (ID 737, 1486, 1489), increase in endurance performance (ID 737, 1486), increase in endurance capacity (ID 1488) and reduction in the rated perceived exertion/effort during exercise (ID 1488, 1490) pursuant to Article 13(1) of Regulation (EC) No 1924/2006. EFSA Journal 2011;9(4):2053. [24 pp.]. doi:10.2903/j.efsa.2011.2053. Available online: [www.efsa.europa.eu/efsajournal](http://www.efsa.europa.eu/efsajournal)

<sup>5</sup> EFSA Panel on Dietetic Products, Nutrition and Allergies (NDA); Scientific Opinion on the

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caffeine withdrawal in habitual caffeine consumers. Therefore, on the basis of the data presented, the Panel concludes that a cause and effect relationship has been established between the consumption of caffeine and a reduction in the rated perceived exertion/effort during exercise.

Additionally, recent research have also identified (and in some cases reinforced) the EFSA findings:

- Food Additives and Contaminants (2003 , Vol 20, No1,1-30). P.Nawrot et al. Effects of Caffeine on Human Health.

Based on data reviewed, concluded for healthy adult, a daily dose of caffeine up to 400mg (eqv 6mg/kg body wt in a 65kg person) is not associated with adverse effects such as general toxicity, cardiovascular effects, effects on bone status and calcium balance (with the consumption of adequate calcium), changes in adult behaviour, increased incidence of cancer and effects on male fertility.

- Journal of Food Science (2010) Caffeine in Foods: A Comprehensive Review on Consumption , Functionality , Safety and Regulatory Matters

Caffeine acts mainly upon the central nervous system, stimulating wakefulness, increasing concentration and decreasing the sensation of fatigue. Additionally, many studies show that caffeine intake at varying higher levels is linked to a number of health benefits as well as to some health concerns of high caffeine consumption in children and pregnant women. Positive effects include a negative association with the incidence of Type 2 Diabetes Mellitus, as well as assisting in weight management. It is too early to assume that an increased intake of caffeine will prevent the metabolic syndrome from developing and therefore further research in this area is required.

- NZ 2004 (Frucon Commissioned Study) Prof Will Hopkins et al. The Effects of Caffeine on Psychological State and Physical Performance.

Studies on various levels of athleticism with 33 studies on psych states and 15 meta-analytical review. Conclusion: there was a 3% enhancement in athletic performance (plus a further 1% if abstained from caffeine for 7 days prior to intake) Optimal dose of caffeine is 6mg / kg body mass, 30min prior to exercise. Caffeine is 3 times more effective if taken as capsules versus coffee.

- International Journal of Sport Nutrition and Exercise Metabolism (2009 ).

Results demonstrate consumption of commercially available Energy Drinks (Red Bull) before exercise can improve endurance performance and that this improvement might be in part the result of increased effort without a concomitant increase in perceived exertion.( Keywords : aerobic endurance , B-endorphins, catecholamines , glucose, taurine) NOT Caffeine alone.

- British Medical Journal (2013;346:f11140 doi: 10.1136/bmj.f11140)

Use of caffeinated substance and risk of crashes in long distance drivers of commercial vehicles: case-control study. Result : Drivers who consumed caffeinated substances for this purpose had a 63% reduced likelihood of crashing compared to no intake.

Conclusion . Caffeine associated with reduced risk but fatigue management priority. The use of Caffeine substances could be a useful adjunct strategy in maintaining alertness while driving.

- The World Journal of Biological Psychiatry (doi:10.3109/15622975.2013.795243). The study "Coffee, caffeine, and risk of completed suicide: Results from three prospective cohorts of American adults" published in the aforementioned.

Study was undertaken at Harvard School of Public Health, involving 43,599 men and 164,825 women. It assessed their consumption of caffeinated coffee (through food-frequency questionnaires every four years, from 1988 to 2008). Suicide rates were determined by physician review or death certificates.

The researchers found that the risk of suicide for adults who drank between two and four cups of coffee a day was 50 % lower than adults who drank decaf, little or no coffee. Although caffeine consumption included a few beverages including chocolate, tea and soft drinks, the researchers said that coffee was the main source.

The researchers hypothesised that the caffeine might be acting as a mild anti-depressant by boosting production of certain neurotransmitters in the brain, including noradrenaline, dopamine, and serotonin. They said that this could also explain the results of other studies linking coffee consumption to lower rates of depression.

**Question 7: Are there any other problems that should be considered here? If so, please provide details and justification. (Refer [chapter 5](#))**

The Ministerial Council Policy Guideline does not resolve the issue of protection of vulnerable population groups in light of overwhelming evidence as to major sources of caffeine. The current Policy's focus is on Guarana, in regards to natural caffeine sources, and should be looking at wider group of natural caffeine sources that are not currently on, or are emerging to, the market.

FSANZ, via the Food Code, has clearly regulated the use of caffeine limits in CSDs and FCBs. These are being reinforced by Industry Codes of Practice, however, consumer awareness of widely varying concentrations of caffeine in naturally occurring products, does not allow for an informed choice of purchase.

For example, in the nationally representative Galaxy Poll on caffeinated drinks commissioned by the Beverages Council, respondents were asked:

*Which **one** of the following do you believe contains the **most** caffeine?*

The results reaffirmed the fact that a large proportion of the population is unaware of the caffeine content of popular beverages. For example:

- Overall the drink/food *thought* to contain the most caffeine is energy drinks with one in three (36%) saying that it contains the most caffeine.
- Only 4% of Australians **correctly** believe that coffee from a cafe contains the highest amount of caffeine
- However, in actuality, for a standard serve, the drinks/foods with the highest levels of caffeine are:
  1. Coffee from a cafe (130mg, 250ml cup)
  2. Ground coffee (130mg, 250ml cup)
  3. Espresso coffee (130mg)
  4. Iced coffee (130mg, 500ml cup)
  5. Energy drink (80mg, 250 ml can)
  6. Extra caffeinated cola drink (69mg, 355ml can)
  7. Green or black tea (65mg, 250ml cup)
  8. Cola drinks are ranked tenth (48mg, 375ml )
- Overall, Australian perceptions of drinks/foods having the highest level of caffeine:
  1. 36% Say energy drink
  2. 25% Extra caffeinated cola drink
  3. 16% Espresso coffee
  4. 4% Cola drink
  5. 4% Coffee from a cafe

**Question 8: Are there any other objectives that should be considered here? If so, please provide details and justification. (Refer [chapter 6](#))**

The Beverages Council notes that the current list of objectives appears to be adequate. It would like to reiterate that the industry wishes to ensure wherever possible that:

- there is no unnecessary regulatory burden on industry
- a level playing field is maintained for ALL food and beverage manufacturers
- any future review of caffeine-containing products (currently available as well as updating future products' contents) is done in a cost-effective manner
- innovation is not inhibited
- the principle of equality is adopted and horizontal application of policy when regulating caffeinated products given that the caffeine in a cola or energy drink is no different to the caffeine in coffee, tea or chocolate. Both colas and energy drinks declare that the products contain caffeine, with energy drinks also disclosing the caffeine content as well as providing advisory statements regarding consumption. Other caffeine containing products do not carry these labelling requirements – refer to Ben Desbrow (Griffith University) study regarding caffeine levels of commercial coffee products.

**Question 9: Are there any other feasible options in relation to the Ministerial Council Policy Guideline on the Addition of Caffeine to Foods which have not been listed here? If so, please provide details and justification. (Refer [chapter 7](#))**

Another option could be to amend the current Policy paper to remove the exemption for restricting the use of new products containing non-traditional caffeine-rich ingredients (incl guarana) to boost the caffeine content in other foods, beyond the current provisions for caffeine. This could potentially resolve the issue of current policy guideline being ineffective (as stated in the Policy Options Paper) by:

- Removing the restriction on the addition of ingredients that naturally contain caffeine (guarana, tea, coffee, etc) to any food and there is therefore no upper limit on how much caffeine can be present. Guarana extract is the most common ingredient used to 'add' caffeine to foods.
- Making consistent in the application of requirements around caffeine across different food categories in the Food Code which has resulted in regulatory uncertainty.
- Including a consumer education component with a daily intake guide or statement so consumers understand caffeine and relative amounts in a serve

**Question 10:** Are there any impacts (advantages or disadvantages) on consumers, industry or government which have not been considered here? If so, please provide details (noting the impacts assume that a review of regulatory standards would have reference to the Policy Guideline described in the options). (Refer [chapter 8.3](#))

The Beverages Council recommends that the following impacts be noted for:

## CONSUMERS

### Advantages

- Scope of the review entirely up to FSANZ and so is likely to correspond with risk management principles.
- If more science based with clear decisions relating to consumer risk then information will enable consumers to make informed choices as ANZ in the eyes of the consumer is possibly a trusted body.

### Disadvantages

- Lack of Policy Guideline and visibility about specific risk management tools and vulnerable population groups may affect confidence in regulatory management of caffeine.
- Consumers may see they have no influence on FSANZ where currently they would appear to via government bodies.

## INDUSTRY

### Advantages

- Scope of any review entirely up to FSANZ and so likely to correspond with risk management principles, and equal treatment of industry sectors.
- If FSANZ engage with the manufacturing sector then Councils/Formal bodies that take a self-regulating approach may have the ability to influence and be proactive which allows action to address issues and inform consumers sooner

### Disadvantages

- Those industry sectors formerly excluded from scope of full range of risk management tools (e.g. labelling) may face regulatory changes (if recommended for risk management purposes).
- Companies would not be able to predict FSANZ position from issue to issue.
- Change to FSANZ leadership would allow change of risk profile interpretation and again ambiguity around approach and guidelines

## GOVERNMENT

### Advantages

- Wider scope and consistency with risk management principles means consistency with approaches to food regulation policy more generally.
- May provide greater scope for trans-Tasman harmonisation.
- Linkages to other countries and hence information that means one less policy for them to review and align on.
- Government not seen as the bad guys based on unpopular decisions,

### Disadvantages

- Other than statutory requirements, FSANZ would not have clear guidance from Ministers for a review.
- Lack of policy guideline means it may be more challenging to communicate governments' focus on risk management, especially for vulnerable population groups.
- Position of FSANZ may differ to Govt which may result in increased debates and misalignment

**Question 11**: Can you provide data to support the potential costs and/or benefits of impacts of policy options? If so, please provide details. (Refer [chapter 8.3](#))

The Beverages Council considers that:

- Option 1 will continue to exclude the main sources of dietary intake of caffeine from any form of control or open disclosure to consumers, and this will not address the consumer desire to be informed on this matter.
- Option 2 will mean potential changes for the beverage industry dependent on the next steps FSANZ takes post change, which could have significant impact on all manufacturers. This option will assist FSANZ in applying a focus if standards are required to be reviewed in the code that pertain to caffeine.
- Option 3 would not serve to support consumer information or requirements, and may underpin consumer confidence in Government ensuring a safe food supply in regards to caffeine containing products.

**Question 12: Please indicate your preferred option (as stated or otherwise) and provide details as to why you consider this option suitable. (Refer [chapter 8.3](#))**

The Beverages Council recommends Option 2, which:

- allows for clear guidance for FSANZ in developing and reviewing caffeine standards in the future, and also increased opportunities for harmonisation between Australian and New Zealand standards in this area
- should ensure that any review of caffeine permissions is based on risk – based evidence and not perceptions and / or emotions.
- allows consideration of other caffeinated products consumed by vulnerable groups, such as chocolate/confectionery/baked goods/cereal and products that consumers do not traditionally consider to contain caffeine such as corn chips and chewing gums.

The Beverages Council emphasises that any change to the policy could have the potential to impact industry significantly, dependent on the path FSANZ takes after the change. The Beverages Council and its members would request that industry consultation is kept to the fore in any deliberations on next steps following any potential change.





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