

**National Packaging Covenant
Mid-term review**

Executive document

Report to the National Packaging Covenant Council

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1. Introduction

The National Packaging Covenant (‘Covenant’) includes the requirement for a comprehensive, independent evaluation of the progress against the Covenant’s overarching targets by the end of 2008 (NPCC, 2005, p. 9):

In addition to the annual reports provided during this period, Covenant Council will report on the findings of a comprehensive, independent evaluation of the progress of the Covenant against its overarching targets by 31 December 2008.

Should this evaluation clearly demonstrate that the Covenant/NEPM model¹ has made satisfactory progress against its overarching targets, the EPHC² will give due consideration to extending the validity of the Covenant/NEPM model for an agreed term beyond its expiry date.

However, should this evaluation clearly demonstrate that the progress of the Covenant/NEPM model against its targets is unsatisfactory, the EPHC and/or participating jurisdictions will give due consideration to the development and implementation of alternative policy options in full consultation with all stakeholders, as a replacement for the Covenant/NEPM model upon its expiry.

The Covenant Council decided to extend the terms of reference for the mid-term review beyond the overarching targets, to include evaluation of broader benefits and impacts of the Covenant. In particular, the review examined progress towards the achievement of the Covenant’s five performance goals.

The purpose of this Executive Document is to present the results of eight pieces of work which were undertaken to inform the mid-term review.

1.1. The mid-term review

The mid-term review has been undertaken through a number of separate research projects into various aspects of the Covenant’s operation (**Table 1**). The approach and research methods used for each of these projects are summarised in the **Appendix**.

The Environment Protection and Heritage Council (EPHC) has given a commitment to consider the need for complementary policy mechanisms to address any gaps found during the review. A preliminary investigation into complementary mechanisms has been completed but is still being considered by EPHC. The results of this investigation will be published separately.

¹ The National Packaging Covenant is the voluntary component of a co-regulatory arrangement for managing the environmental impacts of packaging. Regulatory back-up is provided by the National Environment Protection Measure (NEPM) for Used Packaging Materials, which is applied to ‘free riders’ and non-compliant signatories.

² Environment Protection and Heritage Council.

Table 1: Research investigations undertaken for the mid-term review

Title	Author	Purpose
Recycling performance data	National Packaging Covenant Council ('Covenant Council')	To report specific quantitative results against the 3 overarching targets and 2003 baseline.
Covenant participation	National Packaging Covenant Council ('Covenant Council')	To report on Covenant participation levels.
National Environment Protection Measure (NEPM) data	Government jurisdictions	To report on implementation of the NEPM by jurisdictions.
Signatory action plans and annual reports	Centre for Design at RMIT University ('RMIT')	To evaluate the contribution signatories are making to the Covenant by reporting on and evaluating the tangible outcomes being delivered through signatory action plans and annual reports and to evaluate the action plan and annual report process.
Covenant-funded projects	Covec	To evaluate the contribution of all current and completed national and jurisdiction projects funded under Covenant Mark II (2005-2010) to the Covenants targets; and to assess the adequacy of the current funding process.
Stakeholder views	Hyder Consulting ('Hyder')	To provide a snapshot of views about the performance of the current Covenant and provide a comparison against Covenant Mark I (1999-2005) where applicable.
Community Views	Woolcott Research	To survey the views of the general community about packaging design, use and recycling and changes over the life of Covenant Mark II.
A contextual and economic overview	Hyder Consulting ('Hyder')	To provide an assessment of the performance of the Covenant by understanding key changes and trends impacting on packaging and recycling.

1.2. Covenant objectives, goals and targets

The objective of the Covenant is to reduce environmental degradation arising from the disposal of used packaging and to conserve resources through better product design and production and the re-use and recycling of used packaging materials. It has five specific performance goals that encompass environmental, social and economic performance. These are (NPCC, 2005, p. 15):

- packaging optimised to integrate considerations about resource efficiency, maximum resource re-utilisation, product protection, safety and hygiene;
- efficient resource recovery systems for consumer packaging and paper;

- consumers able to make informed decisions about consumption, use and disposal of packaging of products;
- supply chain members and other signatories able to demonstrate how their actions contribute to goals (1) to (3) above; and
- all signatories demonstrate continuous improvement in their management of packaging through their individual action plans and annual reports.

In order to measure the achievement of these goals, specific overarching targets have also been established in the following areas (NPCC, 2005, p. 16):

- increased recycling of post consumer packaging from its baseline rate of 48%³ (2003) to 65% by 2010, with specific packaging material targets;
- increased recycling of ‘non-recyclable’ packaging (defined as plastics coded 4-7 and non-recyclable paper and cardboard packaging), from 10% (2003) to 25% by 2010; and
- no increase in the amount of packaging disposed to landfill.

1.3. Summary of results

The research indicates that significant progress has been made towards the achievement of the Covenant’s overarching targets through a combination of regulatory action by jurisdictions, market forces and Covenant projects. The overall recycling level for post-consumer packaging (**Target 1**) increased from 40% in 2003 to 56% in 2007 and the 65% target for 2010 is likely to be met. The recycling rate for plastics which are designated as ‘non-recyclable packaging’ under the Covenant (**Target 2**) increased from 11% in 2003 to 24% in 2007, and the 25% target for these materials is also likely to be met by 2010. There has been no increase in the amount of packaging disposed to landfill (**Target 3**).

Despite these achievements, it is difficult to determine the level of progress against some of the Covenant’s performance goals. There has been some progress on the optimisation of packaging (**Goal 1**) and collection programs for post-consumer packaging have improved significantly (**Goal 2**). It is not possible to make any strong conclusions on the ability of consumers to make informed decisions about packaging (**Goal 3**) but most signatories can demonstrate to some

³ The recycling rate for 2003 was later amended to 40% on the basis of improved data collection methods (see Table 2 on p. 5).

extent how their actions have contributed to goals 1-3 (**Goal 4**). There is very little evidence of continuous improvement in the management of packaging because of the generally poor level of reporting in action plans and annual reports (**Goal 5**).

The extent to which the Covenant has been responsible for outcomes such as improvements in packaging efficiency and increased levels of recycling, which have also been influenced by commercial, political and economic factors, is difficult to establish. However, progress to date appears to have been driven, at least in part, by the cooperative efforts of signatories to improve the recyclability and recycled content of packaging and to improve collection and reprocessing systems for post-consumer packaging. Covenant-funded projects are expected to make a significant contribution to the amount of recyclable material which will be diverted from landfill by 2010.

Most signatories and other stakeholders would like to see a continuation of the Covenant beyond 2010, but with some important modifications to improve its effectiveness, efficiency and transparency. Most signatories and stakeholders are satisfied with Covenant processes, including the level of support and communication they receive from the Covenant Secretariat and the assessment of action plans and annual reports. The funding program for Covenant-related activities also appears to be operating relatively well. However, the research identified a number of changes which could be implemented over the next few years or within the context of a future Covenant. Of particular importance is the need to provide more training and support for industry signatories to ensure that they:

- clearly understand and report against all of the Covenant goals and Key Performance Indicators (KPIs); and
- formally integrate the Environmental Code of Practice for Packaging (ECoPP) in their New Product Development policies and processes.

2. Results

2.1. Progress against NPC targets

Target 1: Increased recycling of post consumer packaging

The collection of data on packaging consumption and recycling levels to monitor progress against the Covenant targets has been a complex and time-consuming process. There are still some important issues to be resolved (see 'Recycling performance data' in the **Appendix**) but the

methods used for data collection have improved significantly. As a result, recycling rates for 2003 – 2005 have recently been recalculated (NPCC 2008a).

The overall recycling rate increased from 40% in 2003 (adjusted baseline)⁴ to 56% in 2007, with significant increases for paper and cardboard, plastics and aluminium cans (**Table 2**). These increases can be partly attributed to the Covenant, for example:

- 37,072 tonnes of recyclable materials have been diverted to date as a result of Covenant-funded projects (Covec 2008, p. 26); and
- recovery systems for used packaging have improved as a result of initiatives by local government and industry signatories (discussed further below).

However, the Covenant has only been one influence on higher recycling rates. Strong export markets for paper, cardboard and mixed plastics have also been a significant driver (Hyder Consulting, 2008b).

Table 2: Estimated recycling rates (%) 2003 – 2007 (NPCC 2008a)

	2003 (baseline)	2003 (adjusted)	2004	2005	2006	2007	2010 targets
Paper/cardboard	64	49	53	57	63	65	70-80
Glass packaging	35	28	28	34	35	46	50-60
Plastics packaging	20	20	21	22	31	31	30-35
Steel cans	44	36	42	38	38	38	60-65
Aluminium beverage cans	64	63	63	71	71	70	70-75
Total	48	40	42	46	52	56	65

Recycling rates are expected to increase further between 2007 and 2010 (**Table 3**). Independent forecasts by Covec and Hyder reached similar conclusions using different assumptions and research methods. These suggest that the overall target and most material targets will be met by 2010. Hyder’s forecasts are based on extrapolation of past recycling trends, whereas Covec’s forecasts assume that all future growth in recycling will come from the successful completion of Covenant-funded projects. The amount of each packaging material which is estimated to be recovered as a result of Covenant-funded projects by 2010 is provided in **Table 4**. These projects alone are expected to divert sufficient glass, aluminium and plastic from landfill to meet the material-specific targets identified for the Covenant. Based on current recovery projections for

⁴ Further information on the data collection process and adjustments to the 2003 baseline figure is provided in the Appendix.

Covenant projects, steel and paper/cardboard are not expected to meet their Covenant target contributions. To meet the overall 65% target for packaging recovery, approximately 42,000 tonnes more material would need to be diverted from landfill in addition to the 439,964 tonnes expected to be recovered from approved projects (Covec, 2008, pp. i-ii).

Table 3: Recycling rates in 2007 and forecasts for 2010 (%)

Material	Recycling rate 2007 ¹	Covec forecast 2010 ²	Hyder forecast 2010 ³	Covenant target 2010
Paper/cardboard	65	69	76	70-80
Glass packaging	46	66	58	50-60
Plastics packaging	30	40	40	30-35
Steel cans	38	39	38	60-65
Aluminium beverage cans	70	84	75	70-75
Total	56	64	67	65

Sources and assumptions:

1. NPCC (2008a).
2. Covec (2008). Assumes recycling will be equal to the amount recycled in 2007 (2,378,111 tonnes) plus the annual amount expected to be diverted by Covenant-funded projects (439,964 tonnes). The forecast level of consumption for 2010 is from the report: Nolan-ITU (2005), *Consultation regulatory impact statement (RIS) on revised National Packaging Covenant*, Report to EPHC.
3. Hyder (2008b). Assumes that consumption and recycling levels grew at a linear rate between 2003 and 2007 and will continue to do so.

Table 4: Expected contribution of Covenant-funded projects to targets (Based on Covec 2008, p. 31)¹

Material	Consumption 2007 (t)	Recovery 2007 (t)	Current Rate	Estimated Consumption 2010 ² (t)	Estimated project recovery (t)	Estimated total recovery 2010 (t)	Estimated rate	NPC Targets
Paper/ Cardboard	2,639,000	1,720,000	65%	2,726,677	171,913	1,891,913	69%	70-80%
Glass packaging	893,031	410,700	46%	922,701	194,752	605,452	66%	50-60%
Plastics packaging	585,296	178,351	30%	604,742	62,932	241,283	40%	30-35%
Steel cans	92,399	34,760	38%	95,469	2,591	37,351	39%	60-65%
Aluminium beverage cans	48,791	34,300	70%	50,412	8,017	42,317	84%	70-75%
Total	4,258,517	2,378,111	56%	4,400,000	439,964	2,818,075	64%	65%

Sources

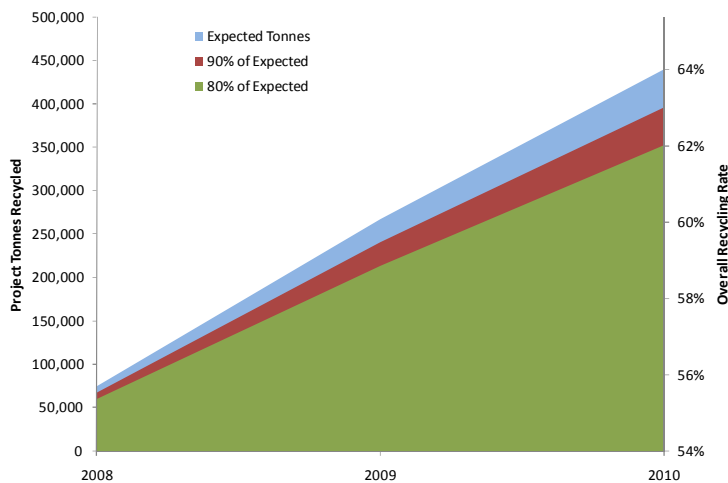
1. Data used is current as at July 2008.
2. Nolan-ITU (2005), *Consultation regulatory impact statement (RIS) on revised National Packaging Covenant*, Report to EPHC.

There are a number of uncertainties associated with these recovery projections, including (Covec, 2008, p. 27-28):

- the ability of projects to meet their timelines for completion;
- the extent to which projects will meet their forecast levels of diversion, for example the exact amount of material which will be diverted as a result of the new commingled recycled service for business in South Australia will not be known until the new collection system is up and running; and
- the quantity of material which will be diverted from projects which involve trials, for example two projects involve the provision of a rent-free glass crusher to hospitality venues and venue owners may or may not decide to rent the machines on an ongoing basis.

To allow for this uncertainty, Covec undertook a simple sensitivity analysis. **Figure 1** shows the expected diversion of material if 80%, 90% and 100% of expected levels are achieved, and the implications for the overall recycling rate in 2010. Without the contribution of Covenant-funded projects the recycling rate is forecast to be 54%⁵. This will increase to 62% if 80% of the expected diversion is achieved and 64% if 100% is achieved.

Figure 1: Expectations of tonnes recycled and overall recycling rates (Covec, 2008, p. 29)



⁵ This assumes that without the project contributions and with no additional recovery from other sources, recycling levels would remain at the 2007 level (2,378,111 tonnes) but consumption would increase to 4,400,000 tonnes. The result would be a fall in the recovery rate from 56% to 54% by 2010 (Covec, 2008, p. 28).

Covec's forecasts are also based on the assumption that Covenant-funded projects will be the only influence on recycling levels, which is clearly not the case. A range of other factors are likely to influence both the demand and supply of recyclable packaging, including market demand, commodity prices (for both virgin and recycled materials) and the diffusion of alternative waste technologies (Hyder Consulting, 2008b, pp. 53-55).

Target 2: Increased recycling of 'non-recyclable' packaging

For Covenant purposes, 'non-recyclable packaging' is defined as:

- low density polyethylene plastic (LDPE – code 4);
- polypropylene plastic (PP – code 5);
- polystyrene plastic (PS – code 6);
- other plastic (code 7);
- non-recyclable paper and cardboard packaging (waxed or high wet strength); and
- composite packaging⁶.

The available data on non-recyclable packaging is incomplete. Companies are required to report on consumption of non-recyclable packaging through the Industry Data Aggregation System (IDAS), which is managed by the National Packaging Covenant Industry Association (NPCIA, 2008, p.8). However, there is no data available on recycling levels for waxed cardboard, high wet strength board or composite materials. Waxed and high wet strength cardboard as well as aseptic and liquidpaperboard (LPB) packaging are collected and reprocessed with recyclable paper and cardboard, and it is not possible to disaggregate the data to determine how much is 'recyclable' or 'non-recyclable' for Covenant purposes. There is some evidence that high wet strength board is recovered under typical pulping conditions (Hyder Consulting, 2008b, p.48).

Plastics make up the largest component of the 'non-recyclable' category. The latest IDAS data indicates that plastics 4-7 made up around 71% of all 'non-recyclable' packaging sold into the Australian market in 2007 (NPCIA, 2008, p.18). The most recent recycling survey undertaken for the Plastics and Chemicals Industries Association (PACIA) estimated that the recycling rate for these materials increased from 11% in 2003 to 24% in 2006, not far behind the 30% rate for all plastic packaging (Hyder Consulting, 2007, pp. 28-29).

⁶ Composite packaging is consumer packaging comprising two or more different packaging material types fused or joined together in a single medium so that they cannot be separated by the consumer and which therefore inhibits recyclability (NPCIA, 2008, p. 17). Examples include composite cans, aseptic packaging, and liquidpaperboard (LPB) cartons.

The increased recycling of plastics 4-7 has been driven by the expanded coverage of kerbside collection services (see **Table 5** on p. 14) as well as strong demand for mixed rigid plastics in export markets.

Recycling of rigid plastics coded 4-7 is expected to increase further by 2010, driven by continuing strong demand in export markets, the inclusion of more materials in many kerbside collection services and the contribution of Covenant-funded projects to the infrastructure for collection and reprocessing. If current trends in the coverage of kerbside recycling services continue, it is expected that LDPE and PP will have close to 100% acceptance by 2010 where kerbside services are available (Hyder Consulting, 2008b, p. 39). Covenant-funded projects are estimated to recover an additional 7,350 tonnes of plastics coded 4-7 (particularly LDPE film and expanded polystyrene) by 2010. Given that the recycling rate for plastics 4-7 was 24% in 2006 and the Covenant target for 'non-recyclable' packaging is 25% by 2010, this target is expected to be met for the plastics component.

There are also indications that brand owners are shifting consumption away from some of the least recyclable materials in this category, i.e. waxed and wet strength board and 'other' (code 7) plastics, and towards more recyclable materials. Between 2006 and 2007 consumption of these materials fell by 33%, 23% and 22% respectively, despite increases in the consumption of most other materials (NPCIA, 2008, p.8)⁷.

Target 3: No increase in the amount of packaging disposed to landfill

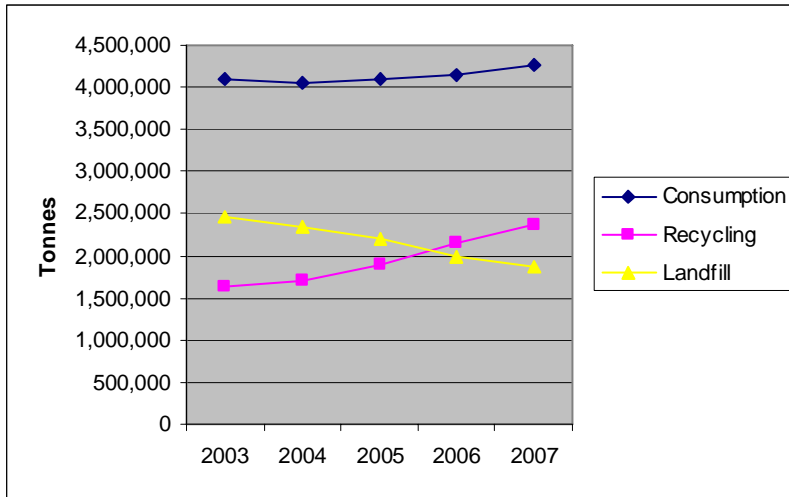
The amount of packaging which was disposed to landfill fell from 2.5 million tonnes in 2003 to 1.9 million tonnes in 2007; a decrease of 24%⁸ (**Figure 2**). This was the result of a small increase in consumption (4%) and a significant increase in recycling (46%) over the four-year period to 2007⁹.

⁷ These figures only apply to companies which responded to the survey in both 2006 and 2007 and therefore may not be representative of all respondents or all brand owner signatories.

⁸ This assumes that all packaging which was not recycled was disposed to landfill.

⁹ Consumption increased from 4,093,533 tonnes in 2003 to 4,258,517 tonnes in 2007 (4%). Recycling increased from 1,634,268 tonnes in 2003 to 2,378,111 tonnes in 2007 (46%) (NPCC, 2008a).

Figure 2: Trends in packaging consumed, recycled and disposed to landfill, 2003 - 2007 (Based on NPCC 2008a)



Conclusion

The overall recycling rate for post-consumer packaging increased from 40% in 2003 to 56% in 2007. While it is difficult to determine the extent to which this has been driven by the Covenant relative to other factors, it appears to have been supported by several Covenant-related initiatives including:

- Covenant funding of infrastructure projects;
- expanded kerbside collection services; and
- some redesign of packaging to increase recyclability and recycled content.

Recycling forecasts for 2010 range from 64% to 67%; this suggests that the 65% target is likely to be met. Most materials, with the notable exception of steel cans, are expected to meet or exceed their target contribution to the overall recovery rate.

The 25% target for recycling of ‘non-recyclable’ packaging is expected to be met for plastics coded 4-7, which make up the largest proportion of all packaging materials in this category.

Based on current trends in packaging consumption and recycling, the third target—no increase in the amount of packaging disposed to landfill—is also expected to be met.

The data analysis highlighted some issues which could be considered in the design of any future Covenant:

- based on current recycling levels, plastics coded 4 and 5 (LDPE and PP) can no longer be considered ‘non-recyclable’;
- it is not clear whether the aluminium target relates to all packaging (i.e. including aerosol cans and trays etc.) or to beverage cans only;
- it is not clear whether LPB should be included in the ‘paper and cardboard’ or ‘composite’ packaging category; and
- if ‘non-recyclable packaging’ continues to be identified as a separate category in any future Covenant, then a clear definition and a system for data collection need to be established to measure performance; and
- data on packaging on imported finished goods is weak.

2.2. Progress against NPC goals

The Covenant includes five specific performance goals which encompass environmental, social and economic performance. Progress against these goals is evaluated in the following section by referring to the actions and some of the KPIs which were identified in the Covenant (NPCC, 2005, pp. 20-22).

Goal 1: Packaging optimised to integrate considerations about resource efficiency, maximum resource re-utilisation, product protection, safety and hygiene

The actions which were identified to achieve this goal included:

- packaging designed, manufactured, distributed and marketed to minimise the amount of material and other resources essential to guarantee the protection, safety, hygiene and shelf-life of the product;
- packaging designed and manufactured to optimise the amount of post-consumer recycled content; and
- packaging designed and manufactured to optimise its recoverability through collection systems including kerbside recycling systems.

Resource efficiency

It is clear from Covenant action plans that many industry signatories are implementing changes in design, manufacturing, marketing and distribution to minimise the environmental impact of packaging (RMIT 2008a, p. 19). Design strategies include light weighting, elimination of unnecessary packaging layers, the use of recycled materials, the introduction of more recyclable or biodegradable materials, the increasing use of bulk packaging and reuse of transport packaging. For example, one manufacturer of plastic packaging has (RMIT, 2008b, p. 5):

- saved 130 tonnes of polymer per year by down gauging film;
- introduced a reuse program for the cardboard cores used to package film;
- eliminated some cardboard packaging by implementing bulk packaging of plastic trays;
- introduced a returnable cartons policy to encourage re-use up to 5 times;
- increased the amount of recycled plastic used in thermoformed sheeting; and
- increased the amount of recycled content in cardboard boxes purchased from suppliers.

Marketing strategies include the use of recycling logos and labels to encourage consumers to recycle (RMIT 2008a, p. 19).

It is difficult to determine which of these changes would have occurred in the absence of the Covenant. There is certainly a perception amongst many respondents to the stakeholder survey that the Covenant has been somewhat or very effective in assisting them to improve resource efficiency and resource reutilisation. For example (Hyder Consulting, 2008a, p. 22):

- 64% believe that it has helped them to reduce the materials, energy and water used to produce packaging; and
- 55% believe that it has helped them to increase the amount of recycled material used in packaging¹⁰.

However, Hyder note that many organisations claim that they are pursuing packaging improvements for both cost and environmental reasons, and positive packaging outcomes can not be fully attributed to the Covenant (Hyder Consulting, 2008a, p. 22).

¹⁰ It should be noted that only 42% of signatories responded to the survey so the results may not be representative of all signatories. However, Hyder note that this is a strong result for a survey of this type. (Hyder Consulting, 2008, p. 12).

An important measure of materials efficiency is the ratio of packaging to the amount of product associated with that packaging (by weight)¹¹. Brand owners are required to include the ratio in their Covenant reports, but only 67% of the companies whose reports were evaluated by RMIT reported a packaging-product ratio, and of this group, only 61% reported the ratio in the correct units (RMIT, 2008a, p.17).

For those brand owners who reported a packaging-product ratio through IDAS in both 2006 and 2007, the average ratio improved from 0.38 to 0.30 (NPCIA, 2008, p.10). In other words, less packaging was used by these companies relative to the amount of product sold. This could be explained at least in part by packaging trends such as light weighting, the replacement of glass and steel with plastics for some applications, and the increasing use of flexible plastics to replace rigid packaging (Hyder Consulting, 2008b, p. 6).

Post consumer recycled content

Only packaging manufacturers are required to report on recycled content. The RMIT evaluation found that almost 58% of packaging manufacturers failed to report any data for this KPI in their action plans and annual reports. Examples provided by signatories ranged from a simple percentage of recycled content, to much more detailed answers by material type (RMIT, 2008a, p. 20). An important consideration for many companies in deciding whether or not they can use post-consumer recycled content is the need to protect food safety (RMIT, 2008a, p. 49).

Packaging recoverability

There is no specific requirement for companies to report on design for recoverability, although brand owners are required to report on the total weight of 'non-recyclable packaging' sold into the Australian market. Two-thirds of the brand owners which were evaluated by RMIT provided some information on this in their public reports, although some reported it incorrectly due to apparent confusion about which materials are classified as 'non-recyclable' (RMIT, 2008a, pp. 20-21).

¹¹ The ratio is calculated by dividing the amount of packaging by the amount of product (e.g. 0.38 tonnes of packaging to 1 tonne of product gives a ratio of 0.38).

Goal 2: Efficient resource recovery systems for consumer packaging and paper

The actions which were identified to achieve this goal included:

- secondary market creation supported for recovered packaging material;
- develop, monitor and implement good practice for collection and recovery systems for packaging and litter management; and
- provision of collection services for post consumer packaging and paper.

Covenant signatories are divided in their views about whether or not the Covenant has been effective in achieving this goal. For example, 54% believe that it has been effective in increasing the recovery of packaging through kerbside recycling services; 50% believe it has helped to increase recycling of packaging consumed away from home; and 53% believe that it has increased recycling of 'non-recyclable' packaging materials (Hyder Consulting, 2008a, p. 24). However, there is evidence that kerbside recycling services in particular have improved significantly in recent years (see below).

Secondary market creation

The total amount of post-consumer packaging which has been collected and reprocessed increased from 1.6 million tonnes in 2003 to 2.4 million tonnes in 2007, an increase of 46% (NPCC 2008a).

Availability of collection services

Between 2003 and 2007 the percentage of households with access to a kerbside recycling service increased from approximately 90% to a minimum of 93% (Hyder Consulting, 2008b, p. 38). The range of packaging materials collected at kerbside also expanded in many local government areas, with the majority of councils now collecting polyethylene terephthalate (PET), high density polyethylene (HDPE), polyvinyl chloride (PVC), low density polyethylene (LDPE) and polypropylene (PP) plastic containers as well as paper and cardboard, glass, aluminium and steel (**Table 5**).

Table 5: Residential trends in kerbside designation of packaging materials – for councils with kerbside collections (Hyder Consulting, 2008b, p. 38)

Packaging material	Kerbside collection material acceptance in 2003 (%)	Kerbside collection material acceptance in 2007 (%)
Paper/cardboard	>95%	~100%
Glass	>95%	~100%
Plastic 1 – PET (rigid)	96.5%	99.5%
Plastic 2 – HDPE (rigid)	56.0%	99.4%
Plastic 3 – PVC (rigid)	20.4%	75.3%
Plastic 4 – LDPE (rigid)	36.7%	63.4%
Plastic 5 – PP (rigid)	11.0%	73.6%
Plastic 6 – PS/EPS (rigid)	No data	41.5%
Plastic 7 – Other (rigid)	No data	33.9%
Plastic films (multiple polymer types)	<5%	<5%
Aluminium cans	~100%	~100%
Steel cans	~100%	~100%
Composites	0%	<5%

The recovery of packaging which is consumed ‘away from home’ has been an important focus of Covenant Mark II, although the available data on this is less comprehensive than for residential kerbside services. Under the Covenant, government signatories are required to report on the percentage of councils with a public place recycling infrastructure. One state government agency which was included in the RMIT evaluation provided this data; stating that 55% of councils in that state offer public place recycling (RMIT, 2008a, p. 23).

All signatories are required to report on the availability of recycling collection facilities for post-consumer packaging waste generated on-site. Over three-quarters (77%) of the signatories which were evaluated by RMIT claimed to have a recycling system in place, with paper and plastic the main materials being collected (RMIT, 2008a, p. 24). Three-quarters of signatories reported that they had expanded their on-site recycling facilities, were establishing new facilities or had plans to establish one in the near future (p. 24). The need to establish recycling programs for packaging has also encouraged some companies to recover other waste materials. For example, one food manufacturer installed recycling bins on site for commingled packaging and also started to send burnt sawdust to a local market garden for use in soil compost (RMIT 2008b, p. 8).

Most respondents to the on-line stakeholder survey (69%) agreed with the statement that the Covenant has been somewhat or very effective at assisting them to provide on-site recycling facilities (Hyder Consulting, 2008a, p. 21). This is reflected in one of the comments made in the survey, which was that ‘we found [the Covenant] to be useful [because it] helped us to be more disciplined with our approach to waste’ (Hyder Consulting, 2008a, p. 83).

A study on the consumption and recycling of glass, aluminium and PET beverage containers, which was undertaken in May 2008 for the Australian Food and Grocery Council (AFGC), may

provide the best guide to away from home recycling services for packaging (**Table 6**). This study found that 25% of glass and aluminium beverage packaging and 45% of PET beverage packaging by weight is consumed away from home, and recycling rates for these materials are much lower than for beverage packaging consumed at home. (Hyder Consulting, 2008b, pp. 40-41)

Table 6: Residential and away from home recycling rates for beverage containers (Hyder Consulting, 2008b, p. 41)

Container type	Residential recycling rate	Away from home recycling rate	Overall recycling rate
Glass beverage	66%	17%	54%
Aluminium beverage	83%	32%	70%
PET beverage	69%	18%	46%

The recovery of packaging consumed outside the home therefore remains a challenge. The Covenant is expected to influence away from home recovery rates through the actions of signatories, for example in establishing or expanding collection services in public places and workplaces, and through direct funding of infrastructure projects. Away from home sources were identified as a priority for the Covenant funding program. Some of the more significant projects which have been approved to date, and expected levels of diversion by 2010, include (Covec, 2008, p. 22):

- a public place recycling program in Queensland (10,000 tonnes per year);
- construction of a materials recovery facility (MRF) for commercial and industrial wastes in NSW (60,000 – 100,000 tonnes per year);
- a commingled recycling collection service for small-to-medium sized enterprises (SMEs) in South Australia (50,000 tonnes per year); and
- a national recycling collection service for SMEs (21,000 tonnes per year).

Goal 3: Consumers able to make informed decisions about consumption, use and disposal of packaging of products

The actions which were identified to achieve this goal included:

- minimise hazards associated with disposal, particularly in the litter stream; and
- change in consumer behavior (purchase, use and disposal).

Packaging in the litter stream

There has been some stakeholder criticism that the Covenant's strong focus on tonnage-based targets may have led to a reduced focus on litter (Hyder Consulting, 2008a, p. 34). Only 4% of Covenant project funding has been assigned to litter projects to date, despite litter being included as a priority for funding in both 2006 and 2008¹².

Consumer behavior

The national consumer survey which was undertaken for the mid-term review¹³ suggests that most consumers have a reasonably good understanding of the functional attributes of packaging, for example (Woolcott Research, 2008, pp. 6-7):

- 88% think that it is used to convey information;
- 84% think it makes transport and handling of products easier;
- 85% think it protects products from damage; and
- 67% think that it increases the shelf life of products.

However, 60% of consumers believe that there isn't enough emphasis placed on reducing the environmental impact of packaging (p. 8) and 40% think that this is because there is too much packaging used (p. 9). Almost two-thirds of consumers (63%) believe that the environmental impact of packaging has reduced in the last three years (p. 15). A minority of consumers (19%) feel that they are not adequately informed about what packaging waste they can put into their recycling bin (Woolcott Research, 2008, p. 14).

Sixteen percent of consumers are aware that the Covenant exists (Woolcott Research, 2008, p. 16). However, there are mixed views amongst stakeholders about whether or not this is problematic and whether or not communication with the public is an appropriate role for the Covenant Council (Hyder Consulting, 2008a, pp. 17, 36). One view is that communicating with the public is *not* the role of the Covenant Council. This is because they are not resourced to address public education in a meaningful way and it would be cutting across and duplicating efforts of government if they became involved in this area. The opposing view is that there is a

¹² The total amount of funding allocated to date by NPCIA and jurisdictions for Covenant projects (as at July 2008) is \$14,016,322. Two litter projects in Tasmania make up 3.7% of the total: a public awareness project to reduce litter run by Southern Waste Strategy Authority (\$13,600), and a litter reporting database and litter education project run by the Department of Environment and Tourism (\$508,500) (based on Covec, 2008, pp. 63-66).

¹³ The survey involved 1,000 adults—more detail is provided in the Appendix.

need for more public awareness of government and industry efforts to minimise the environmental impacts of packaging. For example, the comment was made that public debate about management of packaging is in part fuelled by the lack of public knowledge of Covenant activities.

The ability of consumers to make informed choices about packaging disposal can be analysed by looking at contamination levels in consumer packaging recovery systems. For this purpose, 'contamination' includes non-recyclable packaging as well as other waste products which are disposed of incorrectly in recycling bins. Three of the government signatories which were evaluated for the RMIT study reported contamination rates for kerbside recycling systems, which ranged from zero for one signatory to 11% and 11.3% for the other two (RMIT, 2008a, p.26).

Goal 4: Supply chain members and other signatories able to demonstrate how their actions contribute to goals (1) – (3) above

The actions which were identified to achieve this goal included:

- increased recycling of used packaging from on-site facilities;
- adoption of the ECoPP;
- implementation of the regulatory 'safety net'; and
- secondary market creation supported for recovered packaging material through 'Buy Recycled' purchasing policies or practices.

Recycling from on-site facilities

As discussed (p. 15), most signatories have on-site recycling facilities. However, it is not possible, based on this research, to evaluate the influence of the Covenant on the type of service provided or the amount of material collected.

Environmental Code of Practice for Packaging

The implementation of the ECoPP by industry signatories is mixed (**Table 7**). Most industry signatories (69%) report that they are using the ECoPP but only 24% have formally integrated within their product development process in some form (RMIT, 2008a, p. 46).

Table 7: Degree to which the ECoPP is integrated by signatories (Based on RMIT, 2008a, p. 46)

	Not mentioned	Only mentioned	Used as a tool	Formally integrated	Total
Brand owner	16	13	42	24	95
Industry association	4	1	2		7
Packaging manufacturer	4	1	9	5	19
Raw material supplier			4		4
Wholesaler / retailer	1		3	3	7
Total	25 (19%)	15 (11%)	60 (45%)	32 (24%)	132 (100%)

The implementation of the ECoPP appears to be providing some challenges for companies. When signatories were asked in the stakeholder survey to agree or disagree with the statement that ‘Implementing the ... ECoPP is not overly onerous’, 45% disagreed and only 13% agreed (Hyder Consulting, 2008a, p.22).

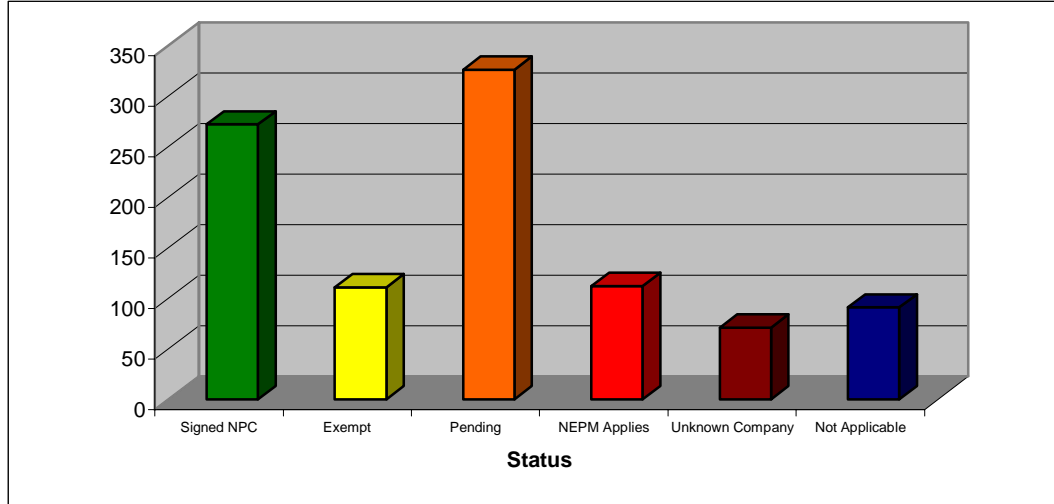
Regulatory safety net

All state and territory governments which are signatories to the Covenant have enacted the NEPM. The NEPM includes a requirement for an annual audit by participating jurisdictions of packaged products to identify ‘free-riders’. Audits conducted between July 2006 and January 2007 identified over 1000 non-signatory companies, and audits conducted in early 2008 identified a further 625 companies to whom the NEPM may apply. Non-signatory brand owners who are identified in the audits are initially contacted by the Covenant Secretariat, and companies who do not respond are referred back to jurisdictions for potential regulatory action. (Government jurisdictions, 2008, p. 2)

Between July 2005 and June 2008, 1,053 companies were referred to jurisdictions for follow-up under the NEPM. Of these, 983 have been investigated, and most have been approached unless company details are unknown or the company has ceased trading. Of the 983 companies investigated and approached by jurisdictions, 272 have signed the Covenant and 111 are confirmed as exempt under the \$5 million turnover threshold. Of the 326 companies pending, many have claimed an exemption under the threshold but are yet to provide formal evidence. The NEPM applies to 112 brand owners, and jurisdictions are at various stages of their compliance and enforcement activities with these companies. (Government jurisdictions, 2008, p. 3-4)

A summary of the status of jurisdictional investigation and enforcement is provided in **Figure 3**.

Figure 3: Summary of investigation and enforcement, August 2008 (Government jurisdictions, 2008, p. 4)



Buy Recycled policies

All signatories are required to implement a Buy Recycled policy or practice. Over one-third of organisations evaluated by RMIT (39%) reported that they had implemented a Buy Recycled policy, and another 11% claimed that they already had a relevant policy in place (RMIT, 2008a, p.28).

Goal 5: All signatories demonstrate continuous improvement in their management of packaging through their individual action plans and annual reports

The action which was identified to achieve this goal was continuous improvement demonstrated against baseline data and all relevant KPIs.

According to the RMIT survey of action plans and annual reports (RMIT, 2008a, p. 29), 86% of signatories either provided baseline data for every KPI or provided a reason for it not being provided (for example they were implementing a new data collection system). In their annual reports the majority of signatories (80%) reported on performance against the baseline data which had been included in their action plan and 75% were able to demonstrate improvement and achievements (p. 30). However, the majority of signatories failed to include specific milestones in their action plan and only reported against baseline data. There was significant variation in the depth and breadth of recorded improvements and achievements, with some simply reporting against baseline data and others providing a much more detailed list of achievements.

Conclusion

There is insufficient data available to enable a firm conclusion to be reached on progress towards **Goal 1**, because many signatories are failing to report on performance indicators such as the packaging-product ratio, recycled content and consumption of non-recyclable packaging. Many companies are also reporting incorrectly due to apparent confusion about reporting requirements. There is evidence that many companies are taking action to improve the resource efficiency and recycled content of packaging but performance is mixed. It is also unclear to what extent many of the packaging changes, such as light weighting, would have occurred in the absence of the Covenant.

There is evidence of significant progress towards **Goal 2**. The amount of post-consumer packaging collected for reprocessing between 2003 and 2007 increased significantly. Kerbside collection programs are available to more households and most local councils collect a wider range of materials than in 2003. There is also evidence from action plans and reports and stakeholder feedback that on-site recycling programs in commercial and industrial facilities have expanded.

It is not possible to reach a firm conclusion about progress towards **Goal 3** due to a lack of trend data on consumer awareness and behavior. Consumers appear to have a reasonable understanding of the functional attributes of packaging but would like to see more emphasis on reducing its environmental impact. Covenant signatories appear to be evenly divided on whether the Covenant should take a stronger role in communicating directly with the public.

There is evidence of some progress towards **Goal 4**. Most industry signatories report that they are using the ECoPP in some form but only a quarter have formally integrated it within product development processes. Similarly, Buy Recycled or similar purchasing policies have only been implemented by around half of all signatories.

The poor quality of most action plans and annual reports mean that it is not possible to reach a conclusion on progress towards **Goal 5**. Most signatories do not provide specific milestones or outcomes in their reports and are therefore unable to clearly demonstrate continuous improvement.

2.3. Other NPC benefits and impacts

Benefits and costs to organisations

The total direct costs of participation in the Covenant have been estimated to be around \$18.6 million per year (Hyder Consulting, 2008b, p. 66). The cost for each group of signatories is

provided in **Table 8** (more detail on the methodology which was used is included in the **Appendix**).

Table 8: Estimated annual direct costs of the Covenant (Hyder Consulting, 2008b, p. 66)

Sector	Total costs
Business signatories	\$11,750,000
Industry associations	\$504,000
State and federal governments	\$5,940,000
Local governments	\$390,000
Environment groups	\$15,360
Total	\$18,600,000

Note: figures have been rounded.

There are also many indirect costs and benefits to organisations which are linked to the Covenant but are more difficult to calculate. These are discussed below.

Indirect costs and benefits to companies

Businesses incur costs when they implement packaging improvements, but some of these practices, such as light weighting, would occur to some extent even if the Covenant did not exist (Hyder Consulting, 2008b, p. 59). The regulatory impact statement for the Covenant identified indirect costs to business, which could in part be attributed to the Covenant, of \$39-82 million per year. This includes costs associated with actions such as increased commercial recycling and research and development to allow more recycled content to be used (Nolan-ITU, 2005, cited in Hyder Consulting, 2008b, p. 59). Another indirect cost is the co-contribution of companies to Covenant-funded projects, which have totalled around \$4.4 million since 2005 (p. 59)¹⁴.

There are also benefits for industry signatories which need to be offset against any costs. For example, the majority of respondents to the on-line stakeholder survey (64%) agreed that the Covenant had assisted them to reduce the amount of materials, energy and water used to produce packaging (Hyder Consulting, 2008a, p. 21). These resource efficiency improvements are likely to generate ongoing cost savings. Just over half of all respondents (55%) claimed that the Covenant had helped them to achieve cost effective packaging reductions and 70% claimed that the Covenant had helped to demonstrate their environmental credentials to customers and suppliers.

¹⁴ 'Co-contributions' are third party contributions to Covenant-funded projects which involve industry partners. This funding is in addition to contributions through NPCIA.

Other indirect benefits which were identified in stakeholder interviews include staff attraction, corporate reporting and increased shareholder value (Hyder Consulting, 2008a, p. 31). The general view expressed by key stakeholders is that while there are costs associated with participation in the Covenant these are not significant enough to cause material disadvantage to companies, and that the benefits of participation are directly related to the amount of effort and money invested in the process.

Indirect costs and benefits to state and federal governments

State and federal governments have a range of programs in place to achieve similar objectives to the Covenant, including support for recycling infrastructure, public education and best practice standards, which are often funded through waste levies. These contribute to the Covenant objectives but there is no clear basis for estimating the proportion of funding which can be attributed to the Covenant. State government co-contributions to Covenant-funded projects have totalled around \$2.9 million since 2005¹⁵. (Hyder Consulting, 2008b, p. 62)

Indirect costs and benefits to local government

The indirect costs to local government of participation in the Covenant are predominantly linked to the provision of kerbside recycling services, although this is driven by political, community and economic factors as well as the Covenant (Hyder Consulting, 2008b, p. 63). It is therefore difficult to determine whether any of the costs of kerbside should be attributed to the Covenant.

Hyder's modelling suggests that at current values of recyclables, kerbside recycling will have a net economic benefit in nearly all urban circumstances of about \$8 per tonne. Applying this figure to the 1.7 million tonnes per year of materials recycled at kerbside; the net economic value of kerbside recycling is estimated to be around \$13.6 million per year to the Australian economy. The increased recovery due to the Covenant most likely represents an indirect benefit, but it would seem that much of this benefit has not yet accrued to local government. (Hyder Consulting, 2008b, p. 64)

In addition, it is not possible to say how many of the extra tonnes being recovered at kerbside are due to the influence of the Covenant.

Another indirect cost to local government is linked to the Covenant's goal of increasing public place and away from home recycling. The total costs of increasing away from home recycling is

¹⁵ 'Co-contributions' are third party contributions to Covenant-funded projects which involve government partners. This funding is in addition to their contributions via the National and Jurisdictional Project Groups.

estimated to be around \$3.9-7.1 million per year, although only a portion of this can be attributed to the Covenant because increased capacity was being installed prior to the Covenant and would probably continue without the Covenant. (Hyder Consulting, 2008b, p. 65).

Comparing the Covenant to other packaging policies

Hyder reviewed a number of packaging policy measures which are in place in Europe, North America and New Zealand (Hyder Consulting, 2008b, pp.12-31). These include regulated producer responsibility schemes in Europe, a regulated product stewardship program in Ontario, mandated recycled content for packaging in California and the voluntary Packaging Accord in New Zealand. While some information on financial costs and benefits is provided, it is not possible to make any meaningful comparisons with the Covenant because of significant differences in policy objectives, program design and the type of financial data which is available for each program.

Contribution to environmental sustainability

The performance targets for the Covenant relate to the recycling and disposal of post-consumer packaging, but many of the environmental goals and benefits of the Covenant encompass much broader sustainability issues such as energy and water efficiency in production and energy used in distribution. Most signatories (64%) believe that the Covenant is helping them to reduce the resources used to produce packaging (Hyder Consulting, 2008a, p.21). There is no trend data available at this stage on the KPI which relates to energy and water consumption, but to the extent that the Covenant is encouraging companies to act in these areas it is also contributing to public policy objectives such as water conservation and greenhouse gas reduction.

Recycling helps to reduce greenhouse gas emissions by diverting paper and cardboard from landfill, where it degrades and generates methane emissions. Covec calculated the greenhouse gas benefits of the additional recycling associated with Covenant-funded projects, but confined their analysis to the impact on landfill emissions. Based on diverting 171,913 tonnes of paper and cardboard waste from landfill, this is a reduction of 20,600 tonnes of methane or 433,000 tonnes of CO₂-equivalents per year (Covec, 2008, p. 47).

According to Hyder's stakeholder survey, the Covenant is also helping to raise environmental awareness within companies, particularly at CEO and Board level. For example, one industry stakeholder described the Covenant as a great catalyst for change and indicated that it had led to staff questioning and acting on environmental issues (Hyder Consulting, 2008a, p. 36). Sixty

percent of respondents to the on-line survey agreed with the statement that ‘[t]he Covenant has had a positive impact on our environmental performance’ (p. 22).

The international review of packaging policies found that the Covenant is unique in the broad scope of its objectives (Hyder Consulting, 2008b, p. 28). Most of the policies which were reviewed in Europe, North America and New Zealand have a much narrower focus on reduction and recovery of packaging waste.

Conclusion

The direct costs of involvement in the Covenant are relatively low for most organisations but there are also significant indirect costs associated with actions such as changes to packaging, research and development, kerbside recycling and co-funding of projects. Signatories are also gaining benefits from the Covenant, for example through improved efficiencies which may not otherwise have been identified.

The benefits of the Covenant go beyond the environmental management of packaging to include issues such as water and energy conservation, greenhouse gas abatement and environmental awareness within industry.

2.4. Effectiveness of the NPC as a cooperative model

The Covenant is based on the recognition that ‘[a] co-operative approach between industry and all spheres of government is essential to achieve a nationally consistent approach to the lifecycle management of consumer packaging and paper...’ (NPCC, 2005, p.1). Indicators of cooperation, although not perfect, include the number and spread of signatories and the contribution of industry and government organisations to funding programs¹⁶.

The number of signatories increased from 416 in 2006 to 660 at June 30 2008 (NPCC, 2008b, p. 1). Current signatories include organisations from all sectors of the supply chain (raw material suppliers, brand owners, packaging manufacturers and wholesalers/retailers) and from all spheres of government (federal, state and local) (**Table 9**). Brand owner signatories are not confined to the food and beverage sector, although these companies make up almost half of all industry signatories. Other sectors represented include hardware, chemicals, pharmaceutical and personal care, electronics, home, leisure and clothing (NPCC, 2008b, p. 3).

¹⁶ Some signatories may have signed the Covenant purely to avoid regulation under the NEPM. Nevertheless, participation and financial contributions indicate a certain level of cooperation, regardless of motivation.

Table 9: Number of signatories by sector, 30 June 2008 (NPCC, 2008b, p. 2)

Sector	Number of signatories
Brand owner	502
Community group	2
Packaging manufacturer	56
Industry association	20
Raw material supplier	10
Waste management company	11
Wholesaler/ retailer	41
Government (local, state and federal)	18
Total	660

Most key stakeholders who were interviewed by Hyder believe that the number of signatories is adequate, although weaknesses in coverage were identified in retail, particularly small, non-grocery companies; imported goods and waste management. The general view was that most of the major companies, which account for the vast majority of packaging tonnes, are signatories and that participation and representation has improved since the first Covenant (Hyder Consulting, 2008a, pp. 31-32). One of the strengths of the Covenant identified by stakeholders is its broad nationally consistent approach, with 'buy in' from all relevant parties (p. 36). However, many stakeholders commented that the quality of participation is very mixed, ranging from 'bare bones' to high quality involvement (p. 31).

Hyder's evaluation of global packaging policies found that the level of participation in the Covenant appears to be unprecedented. No other policy mechanism has achieved participation across the full packaging supply and waste management chain (Hyder Consulting, 2008b, p. 28).

Another measure of cooperation between stakeholders is the shared funding of projects to support the achievement of the Covenant's goals and targets. Companies make annual financial contributions to projects through the NPCIA to the value of \$3 million per year, and this funding is matched by contributions from state government jurisdictions. The total value of approved projects to date (July 2008) is \$68.3 million, with the majority of this amount coming from the project applicants (**Table 10**). Covenant-funded projects normally involve a financial partnership between the packaging supply chain (through NPCIA), a state government agency and a private sector or local government applicant.

Table 10: Summary of project funding, approved projects (Covec, 2008, p. 13)

	Project Funding to date			
	NPCIA	Jurisdictions	Applicants	Total
For all projects	\$6,827,640	\$7,188,682	\$54,260,391	\$68,276,713
% of total	10%	11%	79%	100%

Conclusion

The Covenant appears to be working relatively well as a cooperative model, based on high levels of participation across all sectors and shared funding of projects. However, it is also apparent that the quality of signatory participation is very mixed, with some signatories fully complying with their Covenant responsibilities and others at a very early stage of involvement.

2.5. Compliance with NPC roles and responsibilities

The Covenant includes a series of roles and undertakings for all signatories (NPCC, 2005, pp. 5-7). Some of the most significant are discussed here.

All signatories are required to produce action plans and to report annually to the Covenant Council against Covenant undertakings, action plan commitments, relevant KPIs, baseline data and targets. RMIT found that many companies which were originally sampled for the study had not submitted an action plan and/or annual report. The random sampling process was repeated three times, with a non-success rate averaging around 60% for each re-sampled set, to reach the total of 140. Of the 72 signatories that did not meet the sampling requirements 39 (54%) were new signatories that were not required yet to submit either an action plan and/or annual report (RMIT, 2008a, pp.13, 48).

The majority of action plans did not specify goals, objectives or targets. This is reflected in low scores against many KPIs, and indicates that most signatories—regardless of size or industry type—are not complying with Covenant reporting requirements (RMIT, 2008a, p. 48). Not all signatories have provided annual reports and the majority of annual reports do not report against the commitments in their action plan, relevant KPIs, baseline data or targets (RMIT, 2008a, p. 49). The overall standard of reporting is therefore poor.

All signatories are required to facilitate the implementation of purchasing policies for recycled content goods. However, only half of the signatories evaluated by RMIT had a Buy Recycled policy or similar (RMIT, 2008a, p. 28).

The Covenant also includes specific roles and undertakings for federal, state, territory and local governments. State and territory governments are required to implement the NEPM to regulate those parties that refuse to sign the Covenant, or fail to comply with Covenant requirements, as notified by the Covenant Council. They are also required to identify free-riders to the Covenant. This has been achieved through a brand audit to identify potential non-signatories for follow-up by the Secretariat in the first instance. Of those referred to jurisdictions for potential regulation, 272 signed the Covenant (Government jurisdictions, p. 4).

The packaging supply chain is required to implement product stewardship policies and practices and contribute to the effective environmental management of packaging throughout its life cycle. RMIT evaluated performance in the 10 product stewardship areas identified in the Covenant: design, production, distribution, disposal, research, market development, education, labelling, wholesaling and retailing, and recycling and processing. They used a 5-point scoring system (see **Appendix**) and results were compared to a similar study in 2003. Average scores remain low, with most companies indicating intent to comply and specifying actions under each category, but without measurable targets or outcomes, performance data or information on resources allocated to implementation.

Companies are also required to adopt and implement the ECoPP and to design packaging so that the use of materials is minimised. Some companies provided examples in their reports of packaging redesign to reduce packaging weight (RMIT, 2008a, p.18) but it is difficult to determine how much of this would have occurred in the absence of the Covenant, e.g. for commercial reasons (Hyder Consulting, 2008b). A relatively small proportion of companies have formally integrated the ECoPP into their business processes (RMIT, 2008a, p. 46).

Conclusion

The analysis in earlier sections of this report concluded that government and industry signatories are meeting their financial commitments by contributing to Covenant-funded projects, and they are also taking action in many areas to reduce the environmental impacts of packaging and to improve recycling collection services. However, many signatories are not meeting their obligations in the following areas:

- the submission of action plans and annual reports;
- the quality of action plans and annual reports, in particular the lack of measurable targets or outcomes in action plans and lack of reporting against targets or outcomes in annual reports;

- low levels of implementation of Buy Recycled policies; and
- lack of formal implementation of the ECoPP by most industry signatories.

2.6. Future directions

The following recommendations for improvement are from the relevant research reports for the mid-term review (Hyder Consulting, 2008a; RMIT, 2008a; Covec, 2008).

Covenant performance and future packaging policy

Signatories were asked for their views on which areas of activity would be most effective if increased effort is required to achieve Covenant objectives and targets prior to 2010 (Hyder Consulting, 2008a, p. 27). The most common responses were greater assistance to signatories (41%) and greater public education (46%) (**Figure 4**). One-quarter of respondents suggested 'legislation', although it is not clear from this response what form of legislation they would prefer, for example some form of complementary mechanism or stricter enforcement of the NEPM. Many key stakeholders suggested that there was a need for more consistent effort by state government agencies to follow-up non-signatories (p. 35). There was some support for the introduction or increase in waste levies, advance disposal fees, or deposits (p. 38).

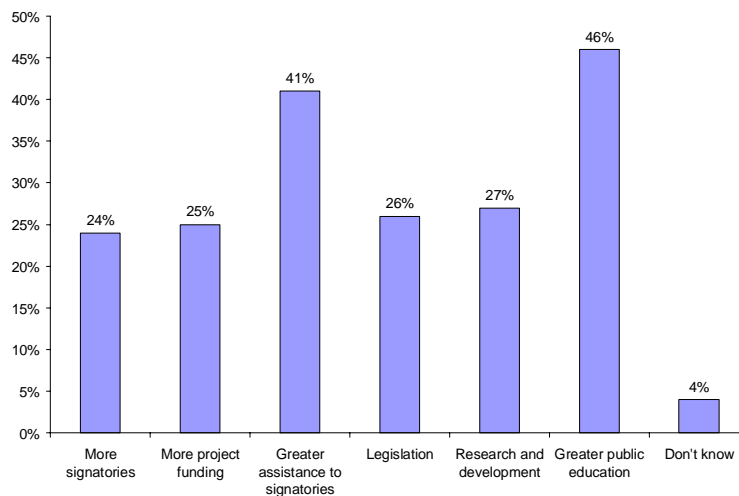


Figure 4: Signatory views on activities considered most effective if increased effort is required to achieve Covenant objectives and targets by 2010 (Hyder Consulting, 2008a, p. 27)

According to Hyder (2008a, p. 28), an overwhelming majority of signatories (close to 90%) indicated that a continuation of the current co-regulatory arrangement is their preferred packaging model beyond 2010. No alternative models were proposed. This was reinforced in stakeholder

interviews. It was felt that a stronger Covenant which builds on the current structure and incorporates a broader sustainability focus is required (p. 38). A number of priorities for a future Covenant were identified, including the development of nationally consistent infrastructure and services, a greater focus on small-to-medium sized companies and commercial and industrial waste, KPIs tailored to different signatory groups, and an increased focus on avoidance and reduction at source (p. 39).

Covenant processes

Most key stakeholders agreed that the processes for the Covenant have significantly improved due to the efforts of the Secretariat and general resourcing of the Covenant (Hyder Consulting, 2008a, p. 32). They also noted that communication with signatories had improved under Covenant Mark II (p. 34). The majority of signatories believe that most Covenant processes are effective (p. 14) and that the electronic newsletters, web site, workshops and seminars are effective communication channels (p. 18).

Suggested improvements include:

- faster approval of action plans and annual reports (p. 15);
- more transparency of Covenant Council processes (p. 15);
- a shift away from ‘collective governance’ arrangements which hamper the Covenant’s performance (p. 37);
- allocation of more resources to the Secretariat (p. 37); and
- improved data collection and reporting (p. 37).

Support for signatories to improve compliance

RMIT identified major problems with the quality of action plans and annual reports. Suggestions for improvement include (RMIT, 2008a, pp. 68-69):

- clearer explanations and better communication of the goals, targets and KPIs to all signatories—many of these are open to interpretation and causing confusion amongst signatories;
- introduction of a standard template for action plans and annual reports—the format could provide for specific company information, but contain standardised locked fields which prevent the editing, moving or deleting of sections; and

- more training and support for signatories to guide them on how to prepare action plans and annual reports—many signatories appear to not understand what is required of them.

Approximately 40% of survey respondents suggested greater assistance be provided to signatories if increased effort is needed to achieve Covenant targets (Hyder Consulting, 2008a, p. 26). This was supported by feedback from a quarter of respondents that the Covenant has not been effective in providing adequate resources and support to signatories to meet their commitments (Hyder Consulting, 2008a, p. 14). Improvements suggested by signatories and other stakeholders include:

- more tools to help signatories to undertake standard tasks like reporting and data gathering (p. 19);
- providing staff to undertake site visits and advise companies on potential improvements (p. 19);
- providing a list of consultants or service providers with Covenant expertise (p. 32); and
- more direct engagement by government agencies and Ministers with companies at a senior level (p. 35).

Several non-signatories commented that their limited communication with the Covenant, solely focused on financial and reporting obligations, was insufficient and unhelpful (Hyder Consulting, 2008a, p. 44). However there is no indication whether more assistance from the Covenant would encourage them to participate. Other non-signatories were satisfied with the level of support they had received.

Environmental Code of Practice for Packaging

RMIT identified a relatively poor level of integration of the ECoPP within product development processes. This is a matter of concern given the importance of the ECoPP to the achievement of Covenant goals such as resource efficiency, recycled content and recoverability of packaging.

Several opportunities for improvement were identified (RMIT, 2008a, p. 68):

- if brand owners are not using and reporting their use of the ECoPP then they should be deemed non-compliant;
- the wording, structure and delivery format of the ECoPP should be reviewed; and
- signatories should be required to submit completed ECoPP reports to demonstrate that the code has been adopted and is being implemented.

A number of stakeholders also suggested that the public should be made more aware of the opportunity to report or complain about packaging that they believe does not comply with the ECoPP (Hyder Consulting, 2008a, p. 35).

Communication with the general public

Many signatories and key stakeholders identified communication as a significant shortcoming of the Covenant and approximately 45% of signatories supported greater public education if more effort is required to meet Covenant targets (Hyder Consulting, 2008a, p. 25).

RMIT recommended more communication of industry case studies to highlight the fact that many signatories are making significant progress in reducing the life cycle impacts of packaging. These should be celebrated and promoted, not only through the packaging supply chain, but also to the wider public (RMIT, 2008a, p. 69).

Covenant-funded projects

Covec's evaluation of the funding program concluded that the process for funding projects appears to be largely appropriate and working relatively well. However, they recommended some changes to improve the process. In particular, they expressed concern that the funding process is not always able to differentiate between those projects that require funding to proceed and those that would have proceeded in any case. This risks the payment of significant amounts for little or no gain. In their view the funding process could be improved by adopting an alternative two-stage application process that initially assesses projects against non-financial criteria, followed by an assessment of the remaining applications on a \$/tonne basis. Competitive pressure at this second stage would provide incentives for applicants to reduce their funding requests to the minimum required. Covec also recommended a more strategic approach to funding that sets a clear set of priorities (as exists now) based on an analysis of recycling costs and benefits, which would be the basis of a more proactive approach to encouraging bids. (Covec, 2008, pp. 51-52)

Some stakeholders made similar suggestions about the need for a more strategic funding process when interviewed about the effectiveness of Covenant spending (Hyder Consulting, 2008a, p.34).

There was strong support amongst stakeholders for the focus of recent funding rounds on tonnes diverted from landfill, because of the need to meet targets. However, there was also some acknowledgement that this was at the expense of light weight materials, litter, regional areas, smaller states and long term education (Hyder Consulting, 2008a, p. 34). Many argued that the Covenant should be more proactive in developing projects that would contribute to the

achievement of Covenant objectives and targets, with one stakeholder suggesting that the Covenant identify needs and then tender projects to the marketplace (p. 34).

There were some comments on the application process itself, for example that it was too slow and that the guidelines and application forms were inadequate (Hyder Consulting, 2008a, p. 34).

3. Conclusion

There is evidence that significant progress has been made towards all of the three Covenant targets. The overall recycling rate for post-consumer packaging (**Target 1**) increased from 40% in 2003 to 56% in 2007, and the 65% target for 2010 is likely to be met. Progress to date has been driven at least in part by the cooperative efforts of Covenant signatories to improve the infrastructure for collection and reprocessing of post-consumer packaging, and to improve the recyclability and recycled content of packaging through changes in product development processes. It is not possible to determine the extent to which recycling levels would have improved in the absence of the Covenant, but Covenant-funded projects are expected to significantly increase the amount of recyclable material which will be diverted from landfill by 2010.

The recycling rate for plastics designated as 'non-recyclable' (**Target 2**) increased from 11% in 2003 to 24% in 2007, and the 25% target for 2010 is expected to be achieved. It is not possible to reach any conclusions about the recovery of other non-recyclable materials, such as waxed cardboard, high wet strength board, and composite packaging, due to a lack of data.

The amount of packaging disposed to landfill (**Target 3**) has been falling consistently since 2003, with an overall reduction of 24% between 2003 and 2007. This is the result of a significant increase in recycling and relatively stable consumption levels for packaging over this period.

The level of progress achieved towards each of the Covenant goals is more difficult to determine. There has been some progress on the optimisation of packaging (**Goal 1**) and collection programs for post-consumer packaging have improved significantly (**Goal 2**). It is not possible to reach a firm conclusion about the ability of consumers to make informed decisions about packaging (**Goal 3**) but most signatories can demonstrate to some extent how their actions have contributed to goals 1-3 (**Goal 4**). There is very little evidence of continuous improvement in the management of packaging in action plans and annual reports (**Goal 5**) due to the generally poor quality of reporting.

There are additional benefits of the Covenant which are not covered by these goals. For example, recycling of paper-based packaging reduces greenhouse gas emissions from landfill. There is also some feedback from signatories that the Covenant is helping to raise environmental awareness at Board, CEO and staff levels, and this may contribute to improved environmental management in areas beyond the scope of the Covenant.

The Covenant appears to be operating relatively successfully as a cooperative model. It has attracted a large number of signatories from every sector in the packaging supply chain, as well as all spheres of government and environment groups. Over \$68 million has been allocated to Covenant-funded projects to date, with the cost shared between the packaging supply chain, government jurisdictions and project applicants in the public and private sector.

Most signatories are fulfilling their roles and undertakings to some extent, but there are some important gaps. These relate to the quality of action plans and annual reports, the implementation of Buy Recycled policies and the formal integration of the ECoPP in product development processes.

The research highlighted a number of actions which could be taken to improve the effectiveness of the Covenant. Some of these could be implemented between now and 2010 to improve the effectiveness, efficiency and transparency of the Covenant. There is a need for the Covenant to provide more assistance to signatories to enhance the quality of action plans and annual reports, to encourage more accurate reporting against KPIs, and to encourage more formal implementation of the ECoPP. This could be achieved through workshops or training programs and the development of standard templates for action plans and annual reports with mandatory reporting fields. This would help to overcome one of the major problems identified by RMIT, i.e. the fact that a high proportion of signatories fail to report on significant KPIs such as the packaging-product ratio, the percentage of recycled content and the amount of 'non-recyclable' material used in packaging. The assessment and feedback process for action plans and annual reports may also need to be amended to ensure that all of the required information is included before reports are accepted by the Covenant Council.

Other areas for potential improvement include faster approval of action plans and annual reports and improved systems for data collection and reporting. These activities would require increased resourcing of the Covenant Secretariat.

The Covec report recommended some changes to the funding program which could either be implemented immediately (to apply to any additional funding rounds between now and 2010) or within the framework of any future Covenant. These changes include:

- an alternative two-stage approvals process which would focus on least-cost recycling projects; and
- a strategic funding process for projects identified by the Covenant Council.

Stakeholders are divided about whether or not there is a role for the Covenant in communicating directly with the public. However, many stakeholders would support a communications program which promoted the achievements of the Covenant and the opportunity for consumers to raise concerns about packaging which appears to be non-compliant with the ECoPP.

There was strong support amongst most signatories and other stakeholders for a continuation of the Covenant beyond 2010. Potential improvements which could be implemented through the design of a future Covenant include:

- a broader sustainability focus which makes explicit links between packaging policy objectives and related policies such as greenhouse gas abatement and water conservation;
- clear, well-defined KPIs which are tailored to the activities and responsibilities of each signatory group;
- an expanded and more strategic funding program to improve the infrastructure for recovering post-consumer packaging, with a greater emphasis on commercial and industrial and public place recycling;
- a capacity-building program for industry signatories to encourage full implementation of the ECoPP and continuous improvement in the resource efficiency of packaging through design strategies such as elimination, lightweighting and recycled content; and
- improved systems for data collection and reporting which would improve the transparency of Covenant processes and allow all stakeholders to monitor Covenant performance.

Appendix: Research methodologies for each of the evaluation projects

Recycling performance

The collection of recycling performance data was managed by the Covenant Council (NPCC, 2008a).

The availability of reliable data to measure performance against the Covenant's recycling targets has always presented a number of challenges. Prior to the Covenant a number of industry groups and jurisdictions had been collecting recycling data for their own purposes and each used a different methodology. The first attempt to collect comprehensive industry data for Covenant Mark II (Martin Stewardship & Management Strategies and New Resource Solutions, 2005) estimated recycling rates for key materials, but also identified a number of gaps and inconsistencies. Of particular concern was the lack of data for packaging for imported and exported finished products.

With some modifications, this report was used to develop the 2003 baseline data for the Covenant (NPCC, 2005, p.16). A new report in 2006 provided consumption and recycling data for 2005 and adjusted figures for 2003 (NPCC, 2006, p.30). However, this report noted that many of the data gaps and inconsistencies which were identified in the earlier report still existed.

Annual consumption and recycling data has been revised by the Covenant Council and independently audited by Pitcher Partners. This exercise included the updating of 2003 baseline data and the collation of data for 2004 to 2007 using an improved methodology. This now provides a consistent data set for the entire period under review.

However, while the methodologies used to measure performance have improved significantly since 2005 there are still some areas of uncertainty, for example:

- accounting for domestic consumption of packaging on imported finished goods;
- accounting for packaging on exported finished goods;
- consumption and recycling of aluminium packaging as a whole (not just beverage cans);
- consumption and recycling of rigid composite materials, e.g. composite cans, aseptic packaging and LPB.

There are also some important differences in the methods used to measure consumption and recycling quantities for the different material types, which means that they are not directly comparable with each other. However, because the same methods have been used since 2005 they provide a reasonably accurate measure of progress over time for each material type.

Covenant participation

The data on Covenant participation was compiled by the NPCIA on behalf of the Covenant Council, and was current at 30 June 2008 (NPCC, 2008b).

NEPM implementation

The data on enforcement of the NEPM by state and territory jurisdictions was compiled by the Victorian EPA with input from other jurisdictions, and was current at 30 May 2008 (Government jurisdictions, 2008).

Signatory action plans and annual reports

This study was undertaken by RMIT (2008a, 2008b). A random sample was selected to be statistically valid for the population as a whole (all signatories); for the size and number of organisations in each sector; and for the average star rating given to action plans and annual reports by the Covenant Council. Some of the sampled signatories had not submitted either an action plan or an annual report, so the sampling process was repeated several times so that the evaluation could compare the details of an annual report against a submitted action plan. The total sample size and number of organisations evaluated in each sector are provided in **Table 11**.

Table 11: Sample size for action plan and annual report evaluation (RMIT, 2008a, p. 13)

Signatory category	Covenant population size (as at February 2008)	Sample size
Brand owner	479	93
Community and waste management groups	10	4
Commonwealth, state, territory and local government	18	6
Industry association	19	7
Packaging manufacturer/supplier	55	19
Raw material supplier	11	4
Wholesaler/retailer	37	7
TOTAL	629	140

The most recent action plan and annual report for each of the chosen signatories were evaluated using a combination of qualitative, quantitative and semi-quantitative methods. For example,

quantitative data was collected on performance against KPIs and the percentage of signatories providing the required information. A semi-quantitative scoring system was used to evaluate overall performance against each product stewardship area, i.e. design, production, distribution, disposal, research, market development, education, labelling, wholesaling and retailing, and recycling and reprocessing.

Covenant-funded projects

This study was undertaken by Covec (2008). It involved the following steps (p. 10):

- a review of Covenant funding guidelines and interviews with members of the National Projects Group and Jurisdictional Projects Groups, applicants who received funding approval and some who had their funding applications rejected, to gain an understanding of the funding approvals process; and
- analysis of project outcomes versus objectives, concentrating on two objectives:
 - ensuring additional tonnes of material are recycled, thus contributing to Covenant targets; and
 - achieving this additional recycling cost-effectively.

The analysis of tonnes recycled was based on the stated expectations and achievements of the individual projects in project applications, progress reports and survey responses. The cost-effectiveness (value-for-money) analysis included three elements:

- an initial analysis from first principles that compared the process with that which would be expected, based on economic theory, to yield recycling at least cost;
- an assessment of the stated costs and achievements of the individual projects; and
- a top-down assessment of the distribution of the expenditure and tonnage outcomes against a theoretical understanding of the distribution which would be consistent with least cost principles.

Stakeholder views

This study was undertaken by Hyder Consulting (2008a). Stakeholder views were evaluated using two methods:

- an on-line survey of Covenant signatories; and
- in-depth interviews with key stakeholders.

The on-line survey included open questions as well as questions which used a pre-defined rating scale. The survey was emailed to all 650 Covenant signatories during May and June 2008. A total of 275 surveys were completed (**Table 12**), which is a strong response rate (42%) for a survey of this kind.

Table 12: National Packaging Covenant signatory online survey responses (Hyder Consulting, 2008a, p. 10)

Signatory classification	Total sample* n=275	State			
		NSW & ACT	VIC & TAS	SA & WA	QLD
Brand owner/ packaging user	71%	80	66	59	65
Packaging manufacturer/ household	11%	9	15	9	5
Wholesaler/ retailer	8%	5	10	13	5
Government agency	4%	1	4	16	5
Waste management company	2%	1	3	0	10
Peak industry body	2%	2	2	3	0
Raw material supplier	1%	1	1	0	0
Community group	1%	1	0	0	5
Consumer paper supplier	0%	1	0	0	0
Other	0%	0	0	0	5

*Percentages may not equal 100 due to rounding

Interviews were conducted with representatives of 37 stakeholder organisations during June 2008 (**Table 13**). An additional 5 interviews were undertaken with withdrawn or non-compliant signatories.

Table 13: Summary of key stakeholder interviews undertaken, by sector and state (Hyder Consulting, 2008a, p. 31)

Industry sector	Count	State*	Count
Government – federal	1	New South Wales & ACT	14
Government – state	8	Victoria	13
Government – local	4	Queensland	3
NGO – national	3	South Australia	3
NGO – state	2	Western Australia	2
University	1	Tasmania	1
Industry association	5	New Zealand	1
Collector and sorter	3	* Refers to head office location. Organisation may operate beyond state.	
Packaging manufacturer	3		
Brand owner	7		

Community views

This study was undertaken by Woolcott Research (2008). The views of consumers were obtained by utilising a fortnightly national omnibus survey which covers 1,000 adults aged 26 years and over, including both capital city and non-capital city areas. Interviews were conducted by telephone using randomly selected telephone numbers from the electronic White Pages. The study was conducted in May 2008. After the completion of interviewing, the data was weighted by age, gender and areas to reflect the latest ABS population estimates.

A contextual and economic overview

This study was undertaken by Hyder Consulting (2008b). The research for this project involved desktop research, stakeholder consultation, and expert advice and analysis (pp. 3-5):

- the evaluation of packaging trends and impacts involved discussions with brand owners, packaging manufacturers, industry associations and environmental NGOs, and a review of the ECoPP;
- the review of recycling trends used a variety of sources including industry recycling surveys, reports from government signatories on kerbside collection programs, Covenant Council documents relating to project funding and interviews with industry experts;
- the impacts of the Covenant on packaging and recycling trends were investigated by analysing action plans from a broad range of signatories and other Covenant documents, discussions with key stakeholders and a review of the Covenant funding program;
- the Covenant was compared to international policy trends by undertaking desktop research on comparable policies in the UK, Germany, Denmark, the Netherlands, USA (California), Canada (Ontario) and New Zealand; and
- the costs of the Covenant were calculated using a range of methods (**Table 14**).

Table 14: Research methods used to calculate Covenant participation costs (summarised from Hyder Consulting, 2008b, pp. 57-66)

Signatory group	Direct costs	Indirect costs
Business signatories	Annual financial contributions were calculated based on the industry contributions funding schedule and the number of signatories in each category. Costs associated with action plan development and annual reports were developed with input from industry and an assessment of the work required. Average costs for one business were multiplied by the total number of businesses.	Two sources were used: the RIS (Nolan-ITU, 2005) and the industry co-contributions to Covenant projects.
Industry associations	Costs associated with action plans and annual reports, member support, advocacy, participation in meetings etc. were calculated with input from associations. Average costs for one association were multiplied by the total number of associations.	
Federal and state governments	Costs include support for the administration of the Covenant (50% each), costs of Covenant-funded projects and resources allocated to Covenant activities such as representation on committees, data reporting and NEPM enforcement. The latter were calculated based on consultation with government agencies.	Government co-contributions to Covenant projects.
Local governments	Based on 8 hours per council per year in Victoria, where participation in reporting is high, and 4 hours in other states and territories.	A range of methods were used. The value of kerbside recyclables and waste disposal costs were calculated using a modified version of the Australian Waste and Recycling Cost Model v. 1.0 (EcoRecycle Victoria 1997), Annual costs of public place recycling facilities are from the RIS (Nolan-ITU, 2005). Co-contributions to Covenant-funded projects were also included.
Environmental groups	Costs associated with action plan development and annual reports were developed with input from environmental groups and an assessment of the work required. Costs of participation in committees are excluded as these are covered by the Covenant.	

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