

# Australian Packaging Covenant

Annual Report for calendar year 2017



**D<sup>®</sup>** D&D Technologies  
World's most trusted gate hardware

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Australian Packaging Covenant Organisation

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## 1. Foreword

*Sustainable packaging plays an essential role in our business by maintaining the conditions under which humans and nature can exist in productive harmony, as well as protecting and preserving our products and brand.*

*Our sustainable packaging designs have a positive impact on our suppliers, our customers, our staff, and the wider community. Our sustainable packaging designs do not just care about today, but about its impact in the years and decades to come.*



*'One Nation – Global Impact'*



## 2. Executive Summary

The **Australian Packaging Covenant Organisation (APCO)** has played an important role in our global operations from Product Development through to Supply Chain and Sales and Marketing. Most importantly, the **APCO** has been one of the vehicles that helped to shape our operations for a more sustainable future.

Benefits were gained from the packaging and environmental perspectives, as well as cost savings to the business.

One of our initiatives, the need to reduce the need for repackaging and handling of our MagnaLatch® tubes, we have forecasted for 2018 to eliminate 277.15kg of Carbon Dioxide from our carbon footprint. The other benefit we expect for 2018 is the reduction of \$77,489.10 on subcontractor costs and a reduction to supply lead-time.

The other initiative is reconfiguring packaging for our US Retail Product line. We have forecasted for 2018 a reduction the shipping cost of our US Retail Product Lines by \$52,784.61. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of \$99,495.59 in shipping costs for forecasted 2018 calendar year.

In addition to the cost savings, we have reduced the consumption of cardboard packaging by 8,450kg. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of 10,127kg in the use of cardboard packaging

D&D is looking forward to turn the 2019 forecasted environment and cost savings into a reality for the next reporting period.



### 3. Background

*“The **Australian Packaging Covenant Organisation (APCO)** is a sustainable packaging initiative which aims to change the culture of business to design more sustainable packaging, increase recycling rates and reduce packaging litter.”*

As a result of our obligations to the **APCO**, the team at D&D Technologies is strongly committed to achieve its **APCO** goals of sustainable packaging through responsible design, recycling and product stewardship. As a signatory to the **APCO** guidelines, we together have laid out a robust schedule of achievable targets supported with key performance indicators in the year 2016. These KPIs are then implemented, tracked and monitored by the Product Development Team.

D&D is a dynamic organisation with aspiration in creating innovative gate hardware products and solutions. With the recent introduction of our latest MagnaLatch® ALERT, this has opened new opportunities for D&D not only in terms of packaging, but also responsibly shipping and disposal of Lithium Batteries. In 2015, MagnaLatch® ALERT was awarded a prestigious Good Design Award.

As prescribed in the **APCO**, all signatories are required to report annually on their progress and achievements. All signatories, including D&D Technologies, are measured accordingly. This process is so, that by the year 2020 all signatories must satisfactorily have met all the **APCO** goals that were laid out to achieve.

For 2016-2020 period, D&D has welcomed a new challenge to the business by involving various cross-business functions in the **APCO** from Product Development through to Logistics and Supply Chain. Under the principle ‘One Nation – Global Impact’, D&D shall continue to invest resources in making the world better place, as shown by our MagnaLatch® for pool and child safety gates.



## 4. Our 2020 APCO targets

For 2020, our target as follows:

Performance Goal	Outcome	Key Performance Indicators	Targets
<b>1. Design</b> – optimize packaging to use resources efficiently and reduce environmental impact without compromising product quality and safety	Improve consumer information about appropriate disposal.	<b>1.</b> Proportion of New and Existing products that are in accordance to the APCO guidelines.	100% of D&D A and B class products compliant by 2020.
	Review all existing packaging in accordance to the guidelines.		
	Improve on the application of cut case cartons to reduce the use of individual packaging.	<b>2.</b> Minimise the individual packaging.	100% of D&D retail gate accessories compliant by 2020.
	Specifying strength criteria of packaging to the Product Design Brief process.	<b>3.</b> Minimise packaging waste.	Continuous improvement in the reduction of waste packaging and reworking of products as a result of packaging defects over the previous period.
	Apply packaging environmental performance matrix to the New Product Process.	<b>4.</b> Proportion of New and Existing products that are in accordance to the APCO guidelines via metrics.	100% of D&D A and B class products compliant by 2020
	Audit the use of Sustainable Packaging Guidelines by Covenant signatories.	<b>5.</b> All signatories shown to be applying the Guidelines in packaging decisions.	Covenant Signatories assessing 100% of new packaging and 50% of existing packaging against the Guideline.

Performance Goal	Outcome	Key Performance Indicators	Targets
<b>2. Recycling</b> - efficiently collect and recycle packaging	Increase the percentage of D&D's carton content that is recyclable.	<b>6.</b> Percent increase over 2015 levels.	Continuous improvement in the recycling rate
	Increased the percentage of recycled materials used in D&D's day to day operations.	<b>7.</b> Percent increase over 2015 levels.	
	Implement a Data Management system for assessing and improving data acquisition for recycling of cardboard material from production facilities.	<b>8.</b> Sound knowledge of and confidence in performance data (including key issues and trends).	Annual acquisition of high quality performance data.



Performance Goal	Outcome	Key Performance Indicators	Targets
<b>3. Product Stewardship</b> - demonstrate commitment of all signatories.	<i>Streamline and improve in the supply of packaging.</i>	<b>9.</b> Minimise supply chain costs, risks and lead time by implementing a dual supplier policy for packaging that minimises transportation costs and reduce indirect impact on the environment.	An auditable process by 2020.
	<i>Increase/improve the recycled content used in Plastic bags.</i>	<b>10.</b> Implement the use of recycled Plastic bags.	100% of TruClose Series 3 trade range compliant by 2020.
	<i>Feasibility study on cardboard Finished Goods packaging</i>	<b>11.</b> Identify with Signatories on products that can use cardboard packaging.	Financial and environmental assessment by 2020.



Figure 4.1. Retail clamshell vs Retail Pouch, which was successfully implemented in previous APCO Action Plan 2010-2015.

## 5. Initiatives

D&D has set out a five year plan to address the following:

- Under product stewardship and working with others to improve design, D&D proposes to reduce the need for repackaging and handling of our MagnaLatch® tubes.
- Evaluating packaging using SPG (Sustainable Packaging Guidelines) for our US retail product lines.
- Consolidating and harmonising packaging material specification to reduce waste during our manufacturing process.

### Initiative A

Currently our extruded MagnaLatch® tubes are sourced from China and they delivered directly to our Sydney warehouse, where they are inspected and transported to a local subcontractor to be pad-printed. The current arrangement allows D&D to maintain a high-quality required by the pad-printing process. However, this adds additional repackaging requirements and handling of our MagnaLatch® tubes.

Figure 5.1 below illustrates the inputs in the supply process of our current MagnaLatch® tubes.

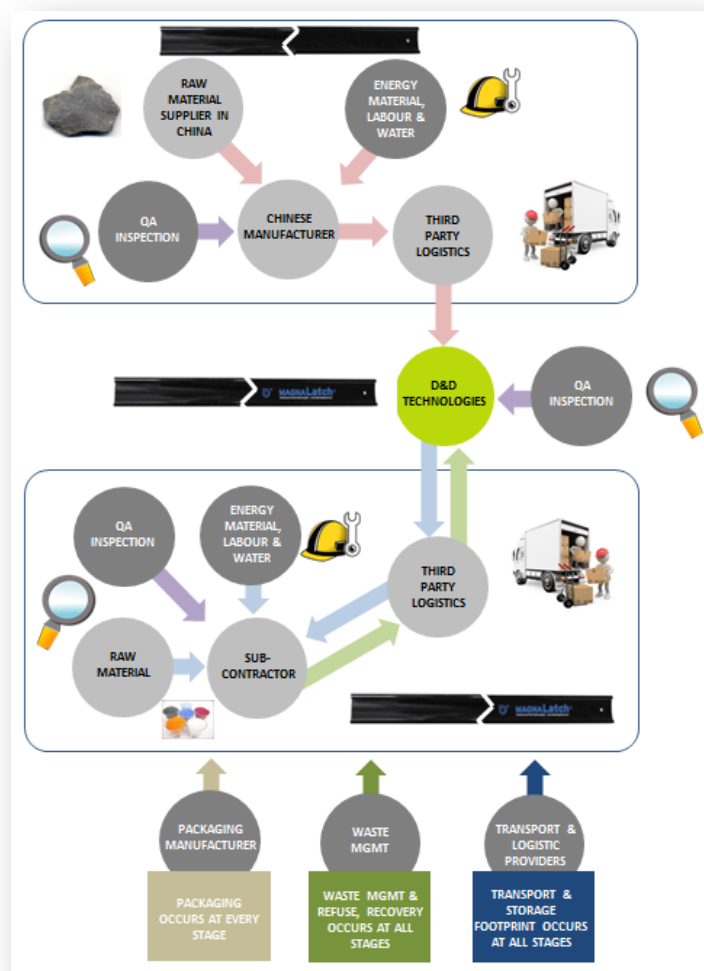


Figure 5.1 – Current supply process map of our MagnaLatch® tubes.

Under internal references ECR025.16 and ECN069.16, initiative A was raised to allow D&D to eliminate the need for repackaging and additional handling of our MagnaLatch® tubes. Not only is this initiative reduces our carbon footprint by eliminating unnecessary transportation and unnecessary repackaging and handling, we anticipate





additional benefits by reducing our operational costs, i.e. QA inspections, subcontractor costs and supply lead-time.

Figure 5.2 below illustrates the revised inputs in the supply process of our current MagnaLatch® tubes if our suppliers were to offer in-house pad-printed process.

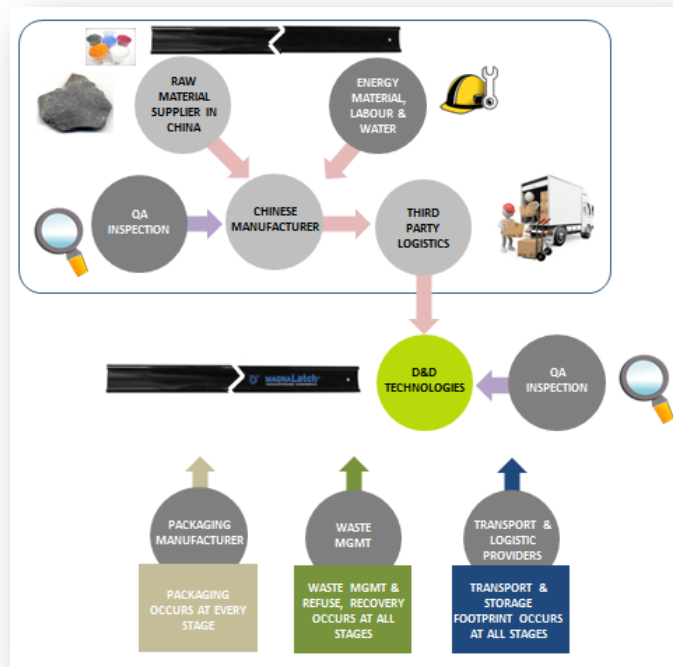


Figure 5.2 – New supply process map of our MagnaLatch® tubes.

Our APCO goals for **Initiative A:**

APCO Goal One: Design

- i. Standardising of artwork for the suppliers to ensure we are preserving our brand.
- ii. Involving marketing and QA to ensure the artwork can be replicated easily by our supplier's pad-printing process.

APCO Goal Two: Recycling

- i. Eliminating unnecessary repackaging and handling of our MagnaLatch® tubes.
- ii. Use of heavy-metal-free paint in the pad-printing process to allow the extruded aluminium components to be easily recycled.
- iii. Provide on-site recovery system for recovering extruded aluminium components.

APCO Goal Three: Product Stewardship

- i. Eliminating unnecessary repackaging and handling of our MagnaLatch® tubes.
- ii. Working closely with supplier to maintain quality and to minimise financial impact, including metrics to ascertain financial impact throughout the APCO period of 2016 to 2020.
- iii. Reducing transport and logistic footprints, including metrics to ascertain reduction in transport and logistic footprints throughout the APCO period of 2016 to 2020.
- iv. Participate in product take-back schemes to allow our customers to return used products for recycling via our Customer Relationship Management (CRM) and warranty claims process and system.



**Initiative B**

Currently our US retail product lines are packaged in 2\*6 inner and outer carton configurations, as shown below.



Figure 5.3. Current 2\*6 inner and outer carton packaging configuration for our US Retail Product (LLAARS).

Whilst this packaging configuration is a request of the customer, however, this has increased our transport and logistic footprints as opposed to packaging the product in the outer cartons only.

An example is illustrated below showing the differences between packaging the same product for our retail and trade customers:

Product Name	Product Code	Outer carton volume (m <sup>3</sup> )	Quantity per outer carton	Units per m <sup>3</sup>
LokkLatch US retail	LLAARS	0.0361	12	332
LokkLatch US trade	LLAA	0.0485	50	1030



Figure 5.4. Current bulk packaging configuration for our US Trade Product (LLAA).



Under internal reference IRN2135, an initiative was raised to review packaging configuration of our US retail line.

Our APCO goals for **Initiative B:**

*APCO Goal One: Design*

- i. *Designing or implementing a standardised outer carton for our US retail line.*

*APCO Goal Two: Recycling*

- i. *Minimising the use of cardboard packaging for our US Retail product line.*
- ii. *Use of recycled cardboard packaging or the application of 'recyclable' markers on cardboard material.*
- iii. *Provide on-site recovery system for recovering cardboard material.*

*APCO Goal Three: Product Stewardship*

- i. *Working closely with the US sales and marketing team for customer approval of the bulk packaging configuration.*
- ii. *Reducing transport and logistic footprints, including metrics to ascertain reduction in transport and logistic footprints throughout the APCO period of 2016 to 2020.*

D&D has implemented bulk packaging of all its US Retail Products in November 2017 under ECN047.17. The following packaging configurations were implemented:

US RETAIL PRODUCT	2*6 Packing Configurations				Bulk Packing Configurations				VARIANCE	
	OUTER CARTON PART#	QTY PER OUTER CARTON	PRODUCTS PACKED PER m³	SHIPPING COST PER PRODUCT	OUTER CARTON PART#	QTY PER OUTER CARTON	PRODUCTS PACKED PER m³	SHIPPING COST PER PRODUCT	\$	%
LLAARU	LLMK2RP0012PA	12	333	\$0.753	MLC00000011PA	48	990	\$0.171	-\$0.58	-77%
TCA1S3RU	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	24	594	\$0.269	-\$0.48	-64%
TCA3S3RU	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	24	594	\$0.269	-\$0.48	-64%
MLTPS2RU	MLTPRP00018PA	12	104	\$1.506	MLTPRP00016PA	12	268	\$0.717	-\$0.79	-52%
TCHD2S3RU	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	12	297	\$0.538	-\$0.22	-29%
LLAABRU	TCARP000017PA	12	219	\$0.753	MLC00000011PA	36	742	\$0.228	-\$0.52	-70%
LLAARS	LLMK2RP0012PA	12	333	\$0.753	MLC00000011PA	48	990	\$0.171	-\$0.58	-77%
LLDABKRS	TCARP000017PA	12	219	\$0.753	MLC00000010PA	12	361	\$0.538	-\$0.22	-29%
MLSPS2RS	LLMK2RP0012PA	12	333	\$0.753	TCAMK200008PA	12	1367	\$0.078	-\$0.67	-90%
MLTPS2RS	MLTPRP00018PA	12	104	\$1.506	MLTPRP00016PA	12	268	\$0.685	-\$0.82	-55%
MLVPS2RS	TCARP000019PA	12	196	\$0.837	MLC00000011PA	18	371	\$0.456	-\$0.38	-45%
TCA1S3RS	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	24	594	\$0.269	-\$0.48	-64%
TCA3S3RS	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	24	594	\$0.269	-\$0.48	-64%
TCA4RS	TCARP000019PA	12	196	\$0.837	MLC00000011PA	24	495	\$0.342	-\$0.49	-59%

Table 5.5. Packaging and Shipping cost analysis of US Retail Products in current 2\*6 inner and outer carton configurations vs bulk packaging



**Initiative C**

Currently all our retail pouches are supplied by more than one supplier, each varied material specifications. The variances in material specifications can cause packaging issues during manufacturing that ultimately adds unnecessary waste. In addition, inadequate material specification can lead damage products, but also opportunity for people to open the packaging to view the contents.

An example is highlighted below:

	AU RB (Supplier A)	US CB (Supplier A)	AU RO (Supplier A)	US RS (Supplier A)	Supplier B
PET Layer (µm)	12	12	12	12	
VMPET Layer (µm)	12	12	12		12
NY Layer (µm)	20	20	15	15	12
PE Substrate (µm)	115	115	120	130	127
<b>Total (µm)</b>	<b>159</b>	<b>159</b>	<b>159</b>	<b>157</b>	<b>151</b>



Figure 5.5. Illustration of the laminate structure for the Retail Product Line).

Under internal references ECR017.16 and ECR037.16, our product development team is currently working with sales, marketing and supply chain in harmonising material specifications for our pouch material. Once the material specification has been harmonised, the packaging artwork will include the material specifications for supplier conformance. D&D is currently reviewing supply agreement to further reinforce material specification and to include recycling markers on pouches.



Our APCO goals for **Initiative C:**

APCO Goal One: Design

- i. Standardise material specification for our pouches.
- ii. Improve see through window to reduce unnecessary opening of product packaging.

APCO Goal Two: Recycling

- i. Minimising waste in production and on the retail shop floor.

APCO Goal Three: Product Stewardship

- i. Working closely with suppliers to standardise material specification.



Figure 5.6. Retail Pouch Range



## 6. Our 2017 Achievements and Forecasted 2018 Projections

Internal references ECR025.16, ECN069.16, IRN2135, ECR017.16, ECR037.16 and ECN047.17 were raised for the following initiatives:

- Initiative A* – Under product stewardship and working with others to improve design, D&D proposes to reduce the need for repackaging and handling of our MagnaLatch® tubes. Internal references ECR025.16 and ECN069.16.
- Initiative B* – Evaluating packaging using SPG (Sustainable Packaging Guidelines) for our US retail product lines. Internal references IRN2135 and ECN047.17
- Initiative C* – Consolidating and harmonising packaging material specification to reduce waste during our manufacturing process. Internal references ECR017.16 and ECR037.16.

For *Initiative A* (reduce the need for repackaging and handling of our MagnaLatch® tubes) we have achieved positive results.

Based on actual 2016 and 2017 figures and our 2018 forecasted figures, Table 6.1 and Figure 6.2 below show the environmental impact on the business by supplier offering pad-printing service as opposed to using subcontractors.

SUBCONTRACTOR ENVIRONMENTAL IMPACT (CALENDER YEAR)	2016	2017	2018	%
Savings in Subcontractors Distance Travelled (km)	171.94 km	1117.88 km	1194.62 km	6.9%
Savings in CO2 (kg)	39.89 kg	259.35 kg	277.15 kg	6.9%

Table 6.1 Environment Impact of our supplier offering pad-printing services vs. subcontracting pad-printed locally.

In 2016 we managed to reduce the distance travelled by 171.91km, which equates to a saving of 38.89kg of Carbon Dioxide emitted into atmosphere. In 2017, we achieved further improvements by reducing distance travelled by 1117.88km, which equates to a savings of 259.36kg of Carbon Dioxide emitted to the atmosphere.

We forecast in 2018 that we can achieve further reduction in distance by another 1194.62kg, which equates to 277.15kg. A positive result for the environment!

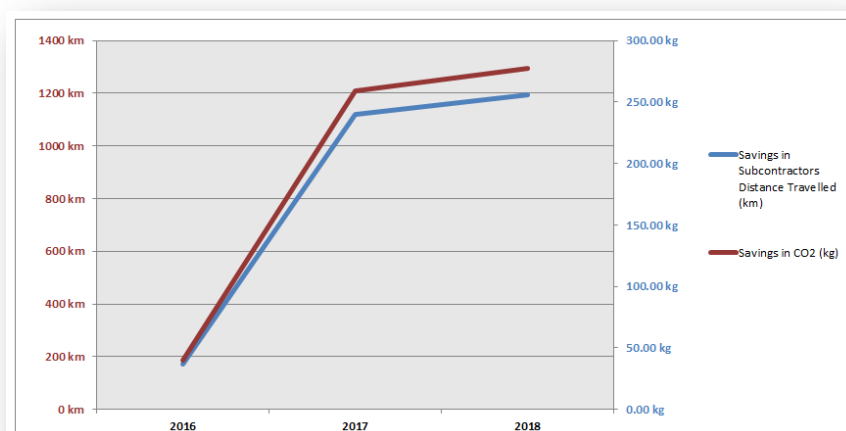


Figure 6.2 Environment impact trend on locally subcontracted pad-printed aluminium tubes from 2016 to 2018



Not only is this initiative reduces our carbon footprint by eliminating unnecessary transportation and unnecessary repackaging and handling, we had additional benefits by reducing our operational costs, i.e. QA inspections, subcontractor costs and supply lead-time.

Table 6.3 and Figure 6.4 below show the cost impact on the business by purchasing pad-printed (top pull) aluminium tubes directly from the supplier in China.

COST IMPACT (CALENDER YEAR)	2016	2017	2018	%
Savings in Subcontractors cost (\$)	\$14,840.78	\$69,293.13	\$77,489.10	11.8%

Table 6.3 Cost Impact of direct sourcing of pad-printed tubes from China vs subcontracting pad-printed locally

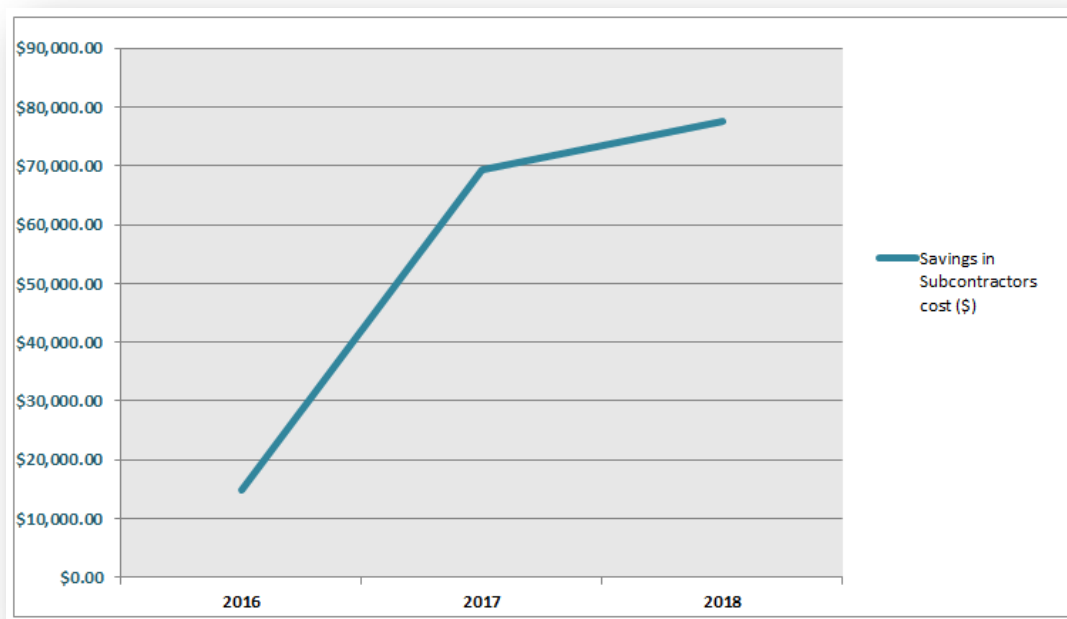


Figure 6.4 Cost savings in locally subcontracted pad-printed aluminium tubes cost trend from 2016 to 2018

Based on the 2018 forecasted figures, it is anticipated a reduction of \$77,489 on subcontractor costs.

D&D shall continue to track progress of this initiative throughout the 2016-2020 reporting period.

For **Initiative B** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our US retail product lines), we have seen a positive result in reducing consumption of cardboard packing.

Based on actual 2016 and 2017 figures and our 2018 forecasted figures, Table 6.5 and Figure 6.6 below show the environmental impact on the business by changing the packaging configurations of our US Retail Products.



PACKAGING IMPACT (CALENDER YEAR)	2014	2015	2016	2017	2018	%
Quantity of Packaging used (kg)	2093.689	1278.376	3430.148	14231.087	5780.923	-59%

Table 6.5 Environment impact trend on packing US Retail Products in bulk packaging configurations

Although the implementation of bulk packaging of US Retail Products was postponed from July 2017 to November 2017, for the remaining 2017 calendar year we calculated a reduction in the use of cardboard packaging by 1,410kg.

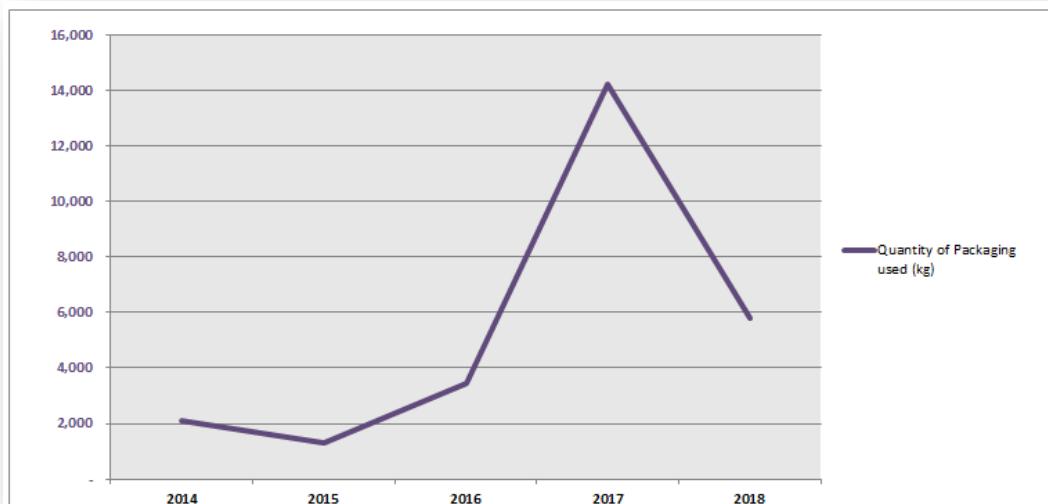


Figure 6.6 Environment impact trend on packing US Retail Products in bulk packaging configurations

For 2018, we forecasted a reduction in the use of 8,450kg of cardboard packaging over 2017, which is a 59% saving. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of 10,127kg in the use of cardboard packaging.

Not only is this initiative reduces our carbon footprint by reducing transportation and minimising packaging, we expect additional benefits by reducing our freight cost.

Based on 2018 forecasted figures, Table 6.7 and Figure 6.8 below show the shipping cost impact on the business by implementing efficient packaging of our US retail product lines.

SHIPPING COST IMPACT (CALENDER YEAR)	2014	2015	2016	2017	2018	%
Cost of Shipping US Retail Products to DDINC	\$15,105.60	\$9,081.43	\$22,362.21	\$96,976.93	\$44,192.32	-54%

Table 6.7 Shipping Cost Impact of US Retail Product lines from 2014 to forecasted 2018.

In 2017 the calculated shipping cost for the US Retail product line was \$96,976.93.





For 2018 forecast, we anticipate a cost saving of \$52,784.61 for shipping our US Retail products from their current 2\*6 inner and outer carton configurations to the new bulk packaging, which equates to a reduction of 54%. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of \$99,495.59 in shipping costs for forecasted 2018 calendar year.

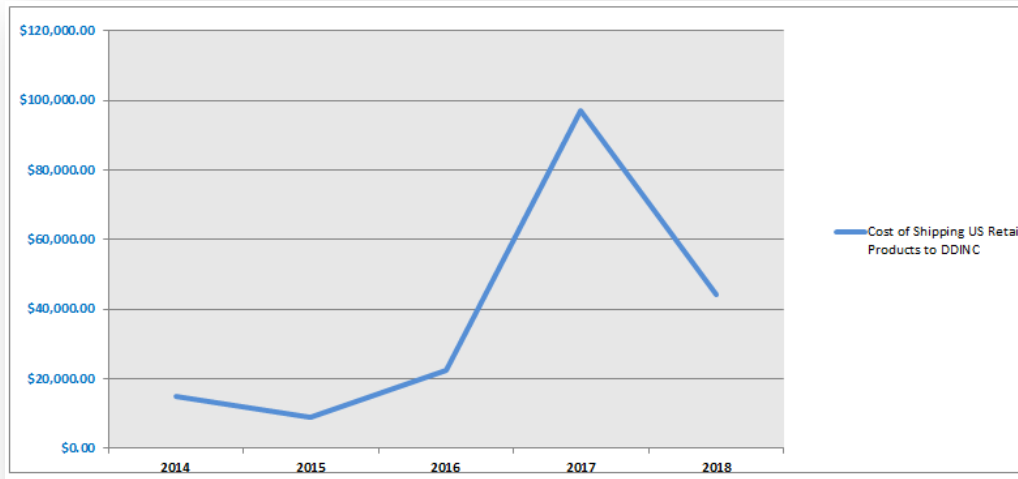


Figure 6.8 Shipping Cost Impact of US retail product lines from 2014 to forecasted 2018.

D&D shall continue to track progress of this initiative throughout the 2016-2020 reporting period.



## 7. New Opportunities and Challenges

D&D will be exploring new opportunities in reducing our cardboard packaging consumption by consolidating the range of cardboard packaging being consumed during manufacturing. D&D currently consumes over 40 different models of cardboard packaging. To prevent stock shortage, each model of cardboard packaging carries a safety stock level. In addition, each model carries a Minimum Order Quantity (MOQ) with the supplier. The combination of a safety stock level and MOQ increases our consumption of cardboard packaging. The challenge is consolidate the models of cardboard packaging whilst meeting strict demands from our customers. D&D has already achieved the first hurdle by changing the packaging configurations for the US Retail Product Line.

D&D will be exploring new opportunities and closely working with suppliers on the design and technical specification for lightweight recycled LDPE flexible packaging for our trade product lines.



## 8. Conclusion

Cost is often the initial driver for a packaging change, but utilising the four principles of the Sustainable Packaging Guidelines (SPG) to reinforce the business proved to be beneficial.

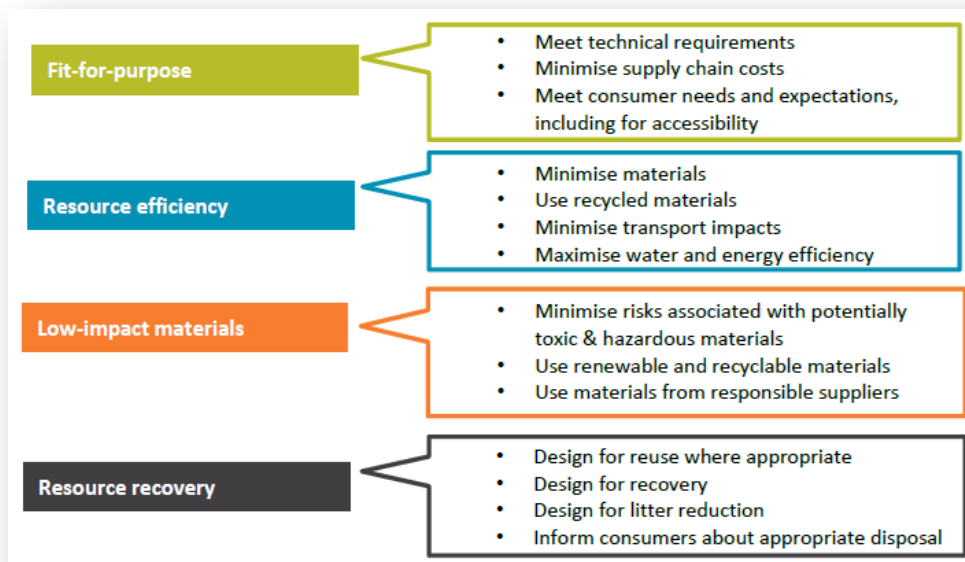


Figure 8.1. Four principles of the Sustainable Packaging Guidelines (SPG)

For **Initiative A** (reduce the need for repackaging and handling of our MagnaLatch® tubes), we have managed to reduce the need for repackaging and handling of our MagnaLatch® tubes. Under **Initiative A**, D&D has managed to:

- Reduce the carbon footprint from the supply chain. Based on the 2018 forecasted figures, it is anticipated a reduction of 277.15kg of Carbon Dioxide emitted into atmosphere from the tail pipe, and a reduction of 1194.62km distanced travelled by the subcontractor.
- The reduction of 1194.62km equates to a fuel saving of \$142.97 based on fuel prices of \$1.36 for diesel.
- Provide an additional benefit by removing subcontractors' costs and reducing the supply lead-time. Based on the 2018 forecasted figures, it is anticipated a reduction of \$77,489.10 on subcontractor costs.

For **Initiative B** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our US retail product lines. Under **Initiative B**, D&D has managed to:

- Reduce the consumption of cardboard packaging by 8,450kg. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of 10,127kg in the use of cardboard packaging.
- Reduce the shipping cost of our US Retail Product Lines by \$52,784.61, which equates to a reduction of 54%. To put this figure into perspective, if we were to continue with the previous 2\*6 packaging configurations for 2018, we estimated a further greater potential saving of \$99,495.59 in shipping costs for forecasted 2018 calendar year.



For **Initiative C** (Consolidating and harmonising packaging material specifications) for our retail pouches, D&D worked closely with various suppliers and testing laboratories to achieve a common material specification for our retail pouches that allows a more robust packaging material that is more suited D&D's requirements. All D&D packaging artwork now includes a specification table with the material specification

