

Australian Packaging Covenant

Annual Report for calendar year 2022



D[®] D&D Technologies
World's most trusted gate hardware

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Australian Packaging Covenant Organisation

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1. Foreword

The role of sustainable packaging in our business is crucial as it ensures that humans and nature can coexist in a productive and harmonious way while safeguarding our products and brand. Our sustainable packaging practices not only benefit our suppliers, customers, and staff but also have a positive impact on the broader community.

We are committed to ensuring that our sustainable packaging practices not only consider the present but also their impact on future generations.



'One Nation – Global Impact'



2. Executive Summary

Our global operations, spanning from Product Development to Supply Chain and Sales and Marketing, have been significantly influenced by the sustainable packaging guidelines established by the **Australian Packaging Covenant Organisation (APCO)**. APCO has played a critical role in shaping our business operations to align with a more sustainable future. We acknowledge APCO as a vital partner in our efforts to integrate sustainable practices throughout our business.

The top six measurable benefits D&D gained from adopting the APCO guidelines are below.

1. D&D shifted its US retail product lines to a new bulk packaging configuration in 2018, resulting in actual accumulative savings of **\$872,230.10** in shipping costs and a reduction of **133,239.25 kg** in cardboard packaging consumption from 2018 to 2022 calendar years.
2. In 2019, D&D reconfigured the packaging for its TruClose® Trade product line, removing all inner cartons of five and resulting in actual savings of **\$53,893.97** in shipping costs and a reduction of **8,215.99 kg** in cardboard packaging consumption for the 2022 calendar year.
3. D&D initiated a review of its MagnaLatch® retail packaging in 2020 to further reduce shipping carton volume, leading to actual savings of **\$36,899.97** in shipping costs and a reduction of **1,634.69 kg** in cardboard packaging consumption for the 2022 calendar year.
4. D&D adopted the Australian Packaging Covenant Organisation (APCO) and Packaging Recyclability Evaluation Portal (PREP) tools in 2020 to review the pouch bag design and use effective recyclable materials, reducing material waste and associated environmental impacts in the packaging lifecycle.
5. In 2022, D&D worked continuously with various suppliers and testing laboratories to achieve a 100% recyclable material specification for its retail pouches, aligning with APCO sustainability targets.
6. D&D continuously engages staff to encourage ongoing recycling of disposed used cartons in the factory.

For the year 2023, D&D estimated a potential savings of **\$273,945.35** in shipping costs and a further reduction of **29,023.68 kg** in continued cardboard packaging initiatives for its US retail, TruClose® Trade, and MagnaLatch® retail product lines.

Our analysis has revealed that in 2022, there was a significant increase of approximately 61% per m3 in international freight cost. This increase is expected to have a considerable impact on the potential savings in shipping costs, emphasising the need to continually evaluate and optimise our shipping and packaging strategies to reduce costs and minimise our environmental impact.



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.”

D&D Technologies is strongly committed to achieving its sustainable packaging goals outlined by the **APCO** through responsible leadership, efficient operations, and optimal outcomes. As a signatory to the **APCO** guidelines, D&D Technologies and **APCO** have collaboratively established a rigorous schedule of achievable targets supported by key performance indicators in 2016. These KPIs are continuously monitored and tracked by D&D's Product Development Team to ensure effective implementation.

The **APCO** mandates that all signatories, including D&D Technologies, report annually on their progress and accomplishments towards meeting sustainable packaging goals. All signatories are evaluated based on their performance. This process aims to ensure that by 2025, all signatories satisfactorily fulfill the **APCO's** goals for sustainable packaging.

100% of all Australia's packaging will be reusable, recyclable or compostable
70% of Australia's plastic packaging will be recycled or composted
50% average recycled content will be included across all packaging
Problematic and unnecessary single-use plastic packaging will be phased out through design, innovation or introduction of alternatives.

Starting in 2016, D&D Technologies has embarked on a new challenge by engaging various cross-functional teams across the business in the **APCO**, including Product Development, Logistics, and Supply Chain. Adhering to the principle of "One Nation - Global Impact," D&D is committed to investing resources to improve the world, exemplified by products like MagnaLatch® designed for pool and child safety gates.



4. Our 2025 APCO targets

For 2025, our target as follows:

Performance Goal	Key Performance Driver	Measurable	Targets by 2025
1. Leadership	Packaging Sustainability Strategy	Proportion of New and Existing products that are in accordance to the APCO guidelines via metrics.	Integrate packaging sustainability goals and targets into corporate strategy. Apply packaging environmental performance matrix to the New Product Process.
	Closed-loop collaboration - Improve recovery of packaging.	Barriers addressed to the recovery and reuse of waste packaging. Data to monitor the outcomes of a collaborative program.	Introduce a formal process to continually identify new opportunities for collaboration.
	Consumer Engagement - Inform and educate consumers about sustainability.	In accordance to the APCO guidelines via metrics.	Provide consumers with information of the sustainability of D&D packaging through D&D website or other public media
	Industry Leadership - Improve packaging sustainability through collaborations.	In accordance to the APCO guidelines via metrics.	Receive external recognition for contributions to packaging sustainability.

Performance Goal	Key Performance Driver	Measurable	Targets by 2025
2. Outcomes	Packaging Design and Procurement - Apply sustainability principles in the design & procurement of packaging.	Proportion of New and Existing products that are in accordance to the APCO guidelines.	100% of D&D product packaging have had their packaging designed or reviewed to meet SPG guidelines and using an LCA tool with supporting evidence.
	Packaging Materials Efficiency - Reduce material consumption and associated environmental impacts in the packaging life cycle.	Progress towards material efficiency (packaging weight reduced or optimised).	100% of D&D product packaging has been optimised for material efficiency.
	Recycled Materials - Support a circular economy for packaging	The percentage of products have packaging that incorporates recycled or renewable content.	Recycled content has been optimised for all packaging.



	<i>Post-Consumer Recovery - improve the recovery of packaging at the end of its life.</i>	<i>Proportion of primary packaging that can be collected for reuse, recycling, composting or energy recovery through existing post-consumer recovery systems.</i>	<i>Achieve the highest potential environmental value.</i>
	<i>Consumer Labelling - Improve consumer information about appropriate disposal.</i>	<i>Proportion of New and Existing products that are in accordance to the APCO guidelines.</i>	<i>100% of products have labels on packaging for disposal or recovery.</i>
	<i>Product-Packaging Innovation - Reduce the life cycle environmental impact of packaging.</i>	<i>Number of product-packaging systems that have been evaluated and optimised.</i>	<i>Identify any remaining opportunities for innovation.</i>

Performance Goal	Key Performance Driver	Measurable	Targets by 2025
3. Operations	<i>Business-to-Business (B2B) Packaging - Reduce the amount of material used in B2B packaging.</i>	<i>The amount of B2B packaging used, pallet utilisation and weight.</i>	<i>Reduce greater than 50% in consumption of single-use B2B packaging.</i>
	<i>Supply Chain Influence - Engage suppliers and business customers in packaging sustainability</i>	<i>Proportion of New and Existing products that are in accordance to the APCO guidelines.</i>	<i>Develop a new packaging material or/and packaging format.</i>



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



5. Initiatives

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

- Evaluating packaging using SPG (Sustainable Packaging Guidelines) for our US retail product lines.
- Evaluating packaging using SPG for our TruClose® product lines.
- Evaluating shipping carton sizes for our MagnaLatch® S3 retail lines.
- Consolidating and developing recyclable packaging for our retail product lines.
- Evaluating shipping carton size and packaging specification for imported FG items.

Initiative A

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



Figure 5.1. Previous 2*6 inner and outer carton packaging configuration for our US Retail Product (LLAARS).

Although this packaging configuration was requested by the customer, it has resulted in an increase in our transport and logistics footprint as opposed to packaging the product in 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 ³)	Quantity per outer carton	Units per m ³
LokkLatch US retail	LLAARS	0.0361	12	332
LokkLatch US trade	LLAA	0.0485	50	1030



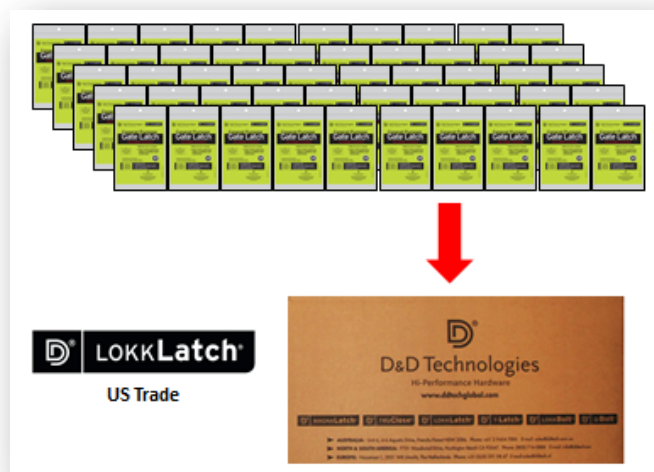


Figure 5.2. Previous bulk packaging configuration for our US Trade Product (LLAA).

Under D&D's new idea research initiative process, reference IRN2135, was raised to review and experiment various packaging configuration of our US retail line.

Our APCO goals for **Initiative A**:

APCO Goal Three: Leadership

- 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 2021.

APCO Goal Two: Outcomes

- 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 One: Operations

- i. Implementing a standardised outer carton for our US retail line.
- ii. Reduction in the amount of material used in B2B packaging.

D&D Technologies implemented bulk packaging for all its US retail products in November 2017, in accordance with ECN047.17. In December 2018, we successfully introduced new SKUs using the bulk packaging configuration outlined in ECN090.18. 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 m^3	SHIPPING COST PER PRODUCT	OUTER CARTON PART#	QTY PER OUTER CARTON	PRODUCTS PACKED PER m^3	SHIPPING COST PER PRODUCT	\$	%
LLAABRU	TCARP000017PA	12	219	\$0.753	MLC00000011PA	36	742	\$0.228	-\$0.52	-70%
LLAARU	LLMK2RP0012PA	12	333	\$0.753	MLC00000011PA	48	990	\$0.171	-\$0.58	-77%
ML3TPKARU	MLTPRP00018PA	12	104	\$1.506	MLTPRP00016PA	12	268	\$0.717	-\$0.79	-52%
ML3VPKARU	ML300000064PA	12	151	\$1.506	MLC00000011PA	18	371	\$0.456	-\$1.05	-70%
MLTPS2RU	MLTPRP00018PA	12	104	\$1.506	MLTPRP00016PA	12	268	\$0.717	-\$0.79	-52%
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%
TCHD2S3RU	TCARP000017PA	12	219	\$0.753	TCAMK200009PA	12	297	\$0.538	-\$0.22	-29%
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%
ML3TPKARS	MLTPRP00018PA	12	104	\$1.506	MLTPRP00016PA	12	268	\$0.717	-\$0.79	-52%
ML3VPKARS	ML300000064PA	12	151	\$1.506	MLC00000011PA	18	371	\$0.456	-\$1.05	-70%
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 5.3. Packaging and Shipping cost analysis of US Retail Products in previous 2*6 inner and outer carton configurations vs bulk packaging



Initiative B

Previously our TruClose® product lines are packaged in 5*4 inner and outer carton configurations.



Figure 5.6. Previous 5*4 inner and outer carton packaging configuration for TruClose® Trade Product

Although this packaging configuration ensures the product is well-protected during transportation from the manufacturing site to trade stores, it has resulted in increased transport and logistic footprints compared to packaging the product in outer cartons only.

An example is illustrated below showing the differences between two types of packaging configurations:

Packaging Configuration	Product Code	Outer carton volume (m ³)	Units per m ³
Previous 5x4	TCA1S3BT	0.041	487
Outer Carton only	TCA1S3BT	0.018	1111





Figure 5.7. New Bulk packaging configuration implemented for our TruClose® Trade Product

D&D initiated the review of the packaging configuration of all TruClose® Trade SKUs under the Engineering Change Review procedure, ECR015.18.

Our APCO goals for **Initiative B**:

APCO Goal Three: Leadership

- iii. Working closely with the US Sales and Marketing team for customer approval of the bulk packaging configuration.
- iv. Reducing transport and logistic footprints, including metrics to ascertain reduction in transport and logistic footprints throughout the APCO period of 2019 to 2024.

APCO Goal Two: Outcomes

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

APCO Goal One: Operations

- iii. Implementing a standardised outer carton for our US retail line.
- iv. Reduction in the amount of material used in B2B packaging.

In June 2018, D&D Technologies implemented bulk packaging for all of its TruClose® Trade products through ECN031.18, which included the removal of inner cartons and the use of only outer cartons for packaging. The new packaging configurations were put in place, which included:



Part Number	QTY Per Outer Carton	5x4 Packaging Configuration			Bulk Packaging Configuration			Variance %	
		Net Weight (KG)	Gross Weight (KG)	Volume (M3)	Net Weight (KG)	Gross Weight (KG)	Volume (M3)	KG	M3
TCA1L2S3BT	20	6.60	8.26	0.04	6.65	7.20	0.03	-13%	-35%
TCA1L2S3BTS	20	6.60	8.26	0.04	7.57	8.13	0.03	-2%	-35%
TCA1L2S3CS	20	6.70	8.36	0.04	7.32	7.87	0.03	-6%	-35%
TCA1L2S3CT	20	6.70	8.36	0.04	6.65	7.20	0.03	-14%	-35%
TCA1L2S3ST	20	6.70	8.36	0.04	6.65	7.20	0.03	-14%	-35%
TCA1L2S3WT	20	6.60	8.26	0.04	6.65	7.20	0.03	-13%	-36%
TCA1S3BT	20	6.10	7.76	0.04	5.91	6.30	0.02	-19%	-54%
TCA1S3BTC	20	6.53	8.19	0.04	6.26	6.65	0.02	-19%	-55%
TCA1S3CT	20	6.20	7.86	0.04	5.91	6.30	0.02	-20%	-55%
TCA1S3ST	20	6.20	7.86	0.04	5.91	6.30	0.02	-20%	-55%
TCA1S3WT	20	6.10	7.76	0.04	5.91	6.30	0.02	-19%	-57%
TCA2L2S3BT	20	7.20	8.86	0.04	7.25	7.80	0.03	-12%	-36%
TCA2S3BT	20	6.70	8.36	0.04	6.65	7.20	0.03	-14%	-35%
TCA3L2S3BT	20	7.80	9.46	0.04	7.82	8.37	0.03	-12%	-36%
TCA3L2S3WT	20	7.80	9.46	0.04	7.82	8.37	0.03	-12%	-36%
TCA3S3BT	20	6.70	8.36	0.04	6.71	7.26	0.03	-13%	-36%

Table 5.8. Packaging consumption and volume analysis of TruClose® Trade Products in Previous 5x4 inner and outer carton configurations vs bulk packaging



Initiative B

Previously, all MagnaLatch® retail product lines were packaged in a single shipping carton size of 60x50x15 cm.



Figure 5.9. Previous packaging configuration for MagnaLatch® Retail Products

While this packaging configuration offers excellent protection from the manufacturing site to retail stores, the issue with the number of units per box has led to problems when palletising, causing the bottom boxes to crush. Additionally, this configuration has increased our transport and logistic footprints, as it does not utilise customised packaging options with appropriate sizes for each product, resulting in inefficiencies.

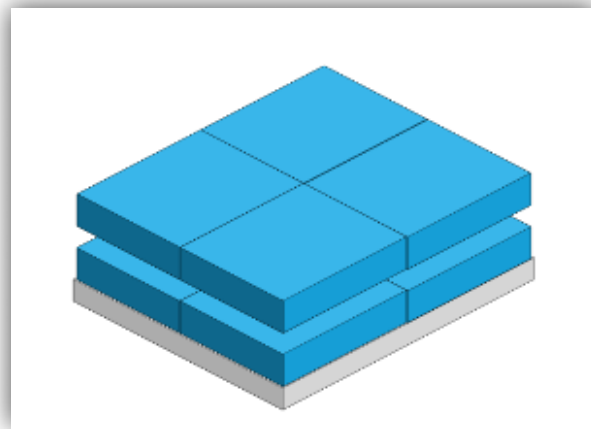


Figure 5.10. Previous pallet loads for MagnaLatch® Retail Products



In 2020, we optimised the material efficiency of our packaging, and our experiments indicated that no additional reduction in packaging weight or volume was feasible.

An example is illustrated below showing the differences between the two types of packaging configurations:

Packaging Configuration	Product Code	Outer carton volume (m ³)	Units per m ³
Previous 60x50x15 cm carton	ML3TPLARB	0.048	125
Customised 63.5x28x15 cm carton	ML3TPLARB	0.027	223



Figure 5.11. New packaging configuration to be implemented for our MagnaLatch® US Retail Products



Figure 5.12. New packaging configuration to be implemented for our MagnaLatch® AU Retail Products



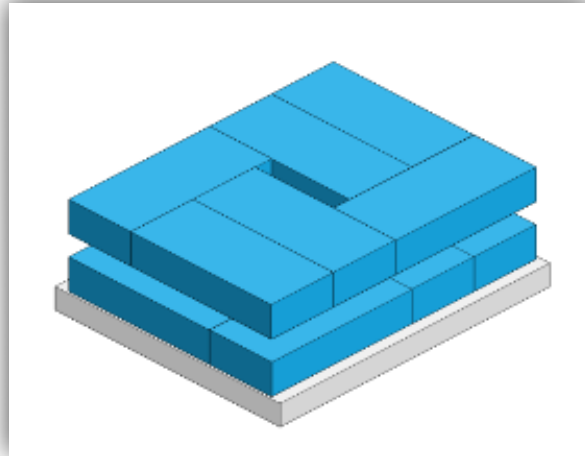


Figure 5.13. New optimised pallet loads for MagnaLatch® Retail Products

Under D&D's Engineering Change Review procedure, an initiative was managed to review packaging configuration of all MagnaLatch® Retail Products.

Our APCO goals for **Initiative C**:

APCO Goal Three: Leadership

- i. Working closely with the Sales and Marketing team for customer approval of the new packaging configuration.
- ii. Reducing transport and logistic footprints, including metrics to ascertain reduction in transport and logistic footprints throughout the APCO period of 2020 to 2025.

APCO Goal Two: Outcomes

- iii. Minimising the use of cardboard packaging for our Retail product lines.
- iv. Progress towards material efficiency (packaging weight reduced and optimised).

APCO Goal One: Operations

- v. Develop new packaging formats for our MagnaLatch® Retail products for improved supply chain efficiency.
- vi. Reduction in the amount of material used in B2B packaging.

The packaging configurations listed below have been fully implemented in 2021:

Part Number	QTY Per Outer Carton	Current Packaging			New Packaging			Variance %	
		Net Weight (KG)	Gross Weight (KG)	Volume (M3)	Net Weight (KG)	Gross Weight (KG)	Volume (M3)	KG	M3
ML3KFSKRB	6	6.12	7.22	0.05	6.12	7.12	0.03	-1%	-37%
ML3TPKARS	12	9.96	11.06	0.05	9.96	10.96	0.05	-1%	0%
ML3TPKARU	12	9.96	11.06	0.05	9.96	10.96	0.05	-1%	0%
ML3TPLARB	6	4.86	5.96	0.048	4.860	5.660	0.027	-5%	-44%
ML3TPLARO	6	4.86	5.96	0.05	4.86	5.66	0.03	-5%	-44%
ML3TPLATCA1RC	6	6.75	7.85	0.05	6.75	7.60	0.03	-3%	-37%
ML3TPLDTCA1RE	6	6.60	7.70	0.05	6.60	7.45	0.03	-3%	-37%

Table 5.14. Packaging consumption and volume analysis of MagnaLatch® Retail Products in previous vs new carton configurations packaging



Initiative D

The Product Development team at D&D Technologies is collaborating with Sales, Marketing, and Supply Chain teams to develop recyclable pouches as part of the Sustainable New Retail Packaging Program (PGN00100). The team is using the APCO and PREP tools to review the pouch design and identify effective recyclable materials. This initiative aims to reduce material waste and associated environmental impacts throughout the packaging lifecycle.



In 2022, after conducting comprehensive assessments, D&D Technologies has specified and ensured that the new packaging concept meets Sustainable Packaging guidelines while effectively serving its primary function of packaging the product from the point of manufacture, through the supply chain to the retail store, and end-user.

D&D Technologies is currently reviewing supply agreements to reinforce the material specification in a cost-effective manner. Furthermore, D&D is taking this opportunity to consolidate the retail lines, redesign artwork, and add recycling markers on pouches.



Current pouch bag has the substrate consists of four layers of PET, VMPET, NY, and PE, and unfortunately, it is not recyclable. The bags are designed to stand upright but do not have gussets on the sides.



The new bag has a gusseted design that enables a neater front panel. It is made up of two layers of special PE clear plastic that are fully recyclable. Additionally, the back of the bag features a larger and more transparent window to deter tampering.

Our APCO goals for **Initiative D**:

APCO Goal One: Leadership

- i. Standardise material specification for our pouches.
- ii. Integrate packaging sustainability goals and targets into corporate strategy.

APCO Goal Two: Outcomes

- i. Minimising waste in production and on the retail shop floor.
- ii. Improve see through window to reduce unnecessary opening of product packaging.
- iii. Optimise recycled content for all pouch packaging.
- iv. Achieve the highest potential environmental value.

APCO Goal Three: Operations

- i. Working closely with suppliers to standardise material specification.
- ii. Develop a new packaging material and packaging format.



6. Our 2022 Achievements and Forecasted 2022 Projections

Internal references IRN2135, ECR017.16, ECR037.16, ECN047.17, ECN090.18, ECR023.21 and PGN00100 were raised for the following initiatives:

- Initiative A* – Evaluating packaging using SPG (Sustainable Packaging Guidelines) for our US retail product lines. Internal references IRN2135, ECN047.17 and ECN090.18
- Initiative B* – Evaluating packaging using SPG guidelines for our TruClose® Trade Product line. Internal references IRN2278, ECR015.18, and ECN031.18.
- Initiative C* – Evaluating packaging using SPG guidelines for our MagnaLatch® Retail Product line. Internal references IRN2787 and ECR023.21.
- Initiative D* – Consolidating and developing recyclable packaging material for our retail pouches using SPG guidelines, APCO and PREP tools. Internal references PGN00100.

For *Initiative A* (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our US retail product lines), we have observed a positive outcome in terms of reducing the consumption of cardboard packing.

Table 6.1 and Figure 6.2 below illustrate the environmental impact on our business resulting from the changes made to the packaging configurations of our US Retail Products, based on both actual figures from 2017 to 2022 and our forecast for 2023.

PACKAGING IMPACT (CALENDER YEAR)	2017	2018	2019	2020	2021	2022	2023
QTY of US Retail Products Shipped to DDINC	107,136	113,627	130,004	300,767	233,905	234,436	150,705
Quantity of Packaging used (kg)	13,104.13	5,555.71	6,433.67	11,241.26	9,855.49	9,750.02	6,573.86

Table 6.1. Environment impact trend on packing US Retail Products in bulk packaging configurations

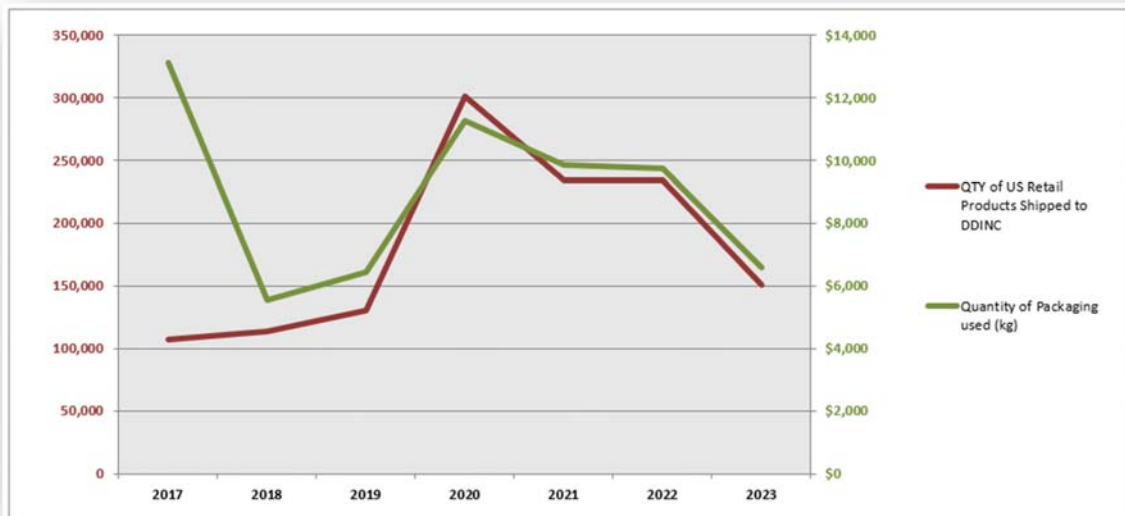


Figure 6.2. Environment impact trend on packing US Retail Products in bulk packaging configurations

If we were to maintain the previous 2*6 packaging configurations, our calculations show a possible decrease of 30,850.34 kg in the consumption of cardboard packaging for 2023.



In addition to reducing our carbon footprint through decreased transportation and minimised packaging, we anticipate that this initiative will yield further benefits by reducing our freight costs.

Table 6.3 and Figure 6.4 illustrate the effect on shipping costs for our US retail product lines resulting from the implementation of efficient packaging, based on both our actual figures from 2018 to 2022 and our projected figures for 2023.

SHIPPING COST IMPACT (CALENDER YEAR)	2017	2018	2019	2020	2021	2022	2023
QTY of US Retail Products Shipped to DDINC	107,136	113,627	130,004	300,767	233,905	234,436	150,705
Cost of Shipping US Retail Products to DDINC	\$132,459.12	\$41,941.67	\$72,274.27	\$128,792.77	\$116,036.01	\$182,081.72	\$125,961.66

Table 6.3. Shipping Cost Impact of US Retail Product lines from 2017 to forecasted 2023.

In 2017, the US Retail product line was shipped 107,136 products, incurring a shipping cost of \$132,459.12. As of 2022, the number of products shipped to the US has increased by 127,300 (approximately a 119% increase). Despite this increase, the calculated shipping cost has increased by 37%, resulting in a cost saving of \$291,462.78 if we were to continue using the previous 2*6 packaging configurations.

The drop in shipping cost is attributable to the adoption of bulk packaging, as explained in Initiative A of Section 5, which also details the shipping cost variance between the previous 2*6 inner and outer carton configurations and bulk packaging.

If we were to maintain the previous 2*6 packaging configurations, our 2023 forecast predicts an additional potential saving of \$192,882.09 in shipping costs.

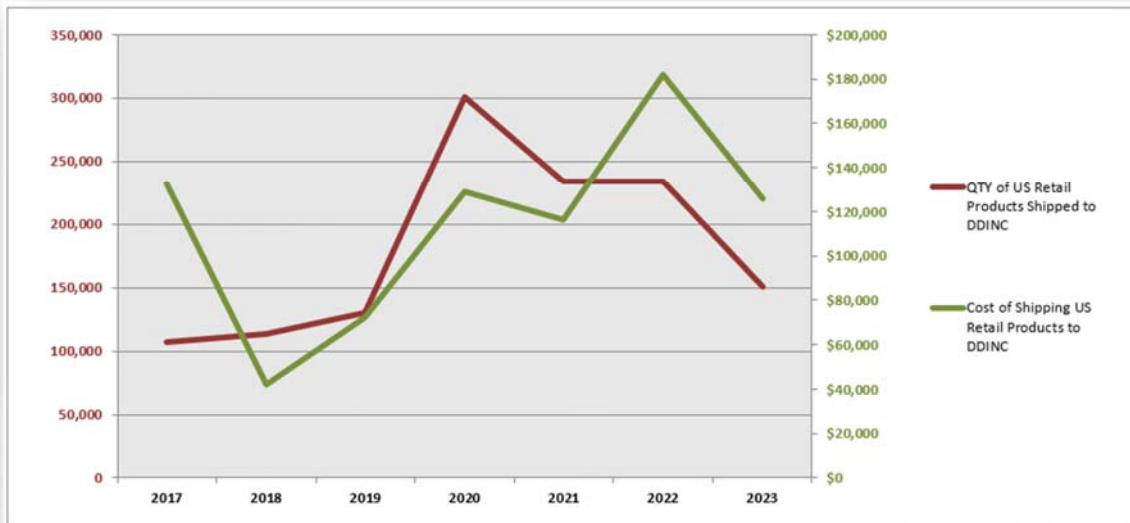


Figure 6.4. Shipping Cost Impact of US retail product lines from 2017 to forecasted 2023.



The overall impact of our initiative to reduce transportation and minimise packaging has been significant. Since its implementation in 2018, we have managed to reduce the consumption of cardboard by 133,239.25 kg, achieve cost savings of \$872,230.10 in shipping costs, and reduce our carbon footprint through decreased transportation and minimised packaging.

SHIPPING COST IMPACT (CALENDER YEAR)	2018	2019	2020	2021	2022	Total
Previous 2*6 packaging configuration	\$ 106,903.02	\$ 184,281.08	\$ 356,831.18	\$ 291,796.75	\$ 473,544.50	\$ 1,413,356.52
Bulk Packaging	\$ 41,941.67	\$ 72,274.27	\$ 128,792.77	\$ 116,036.01	\$ 182,081.72	\$ 541,126.42
Saving in shipping cost	\$ 64,961.35	\$ 112,006.81	\$ 228,038.42	\$ 175,760.74	\$ 291,462.78	\$ 872,230.10

Table 6.5. US retail product line shipping costs for previous vs current packaging configurations from 2018 to 2022

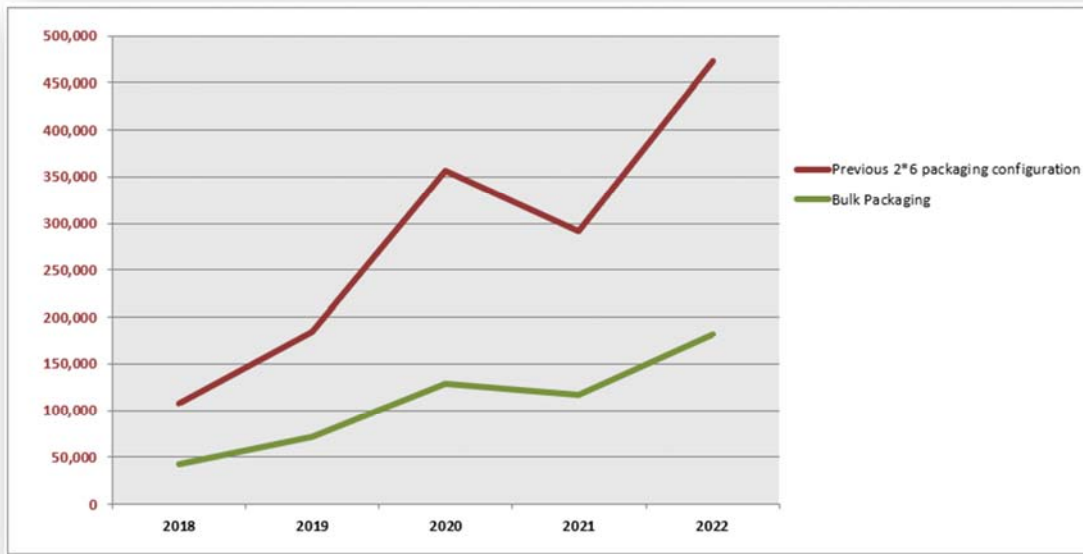


Figure 6.6. compares US retail product line shipping costs for previous vs current packaging configurations from 2018 to 2022.

Our analysis has revealed that in 2022, there was a significant increase of approximately 61% per m3 in international freight cost. This increase is expected to have a considerable impact on the potential savings in shipping costs, emphasising the need to continually evaluate and optimise our shipping and packaging strategies to reduce costs and minimise our environmental impact.



PACKAGING IMPACT (CALENDER YEAR)	2018	2019	2020	2021	2022	Total
Previous 2*6 packaging configuration	21,201.52	24,540.00	49,414.71	40,318.81	40,600.36	176,075.40
Bulk Packaging	5,555.71	6,433.67	11,241.26	9,855.49	9,750.02	42,836.15
Saving in the use of cardboard packaging	15,645.81	18,106.33	38,173.44	30,463.32	30,850.34	133,239.25

Table 6.7. US retail product line the amount of cardboard used in kg for previous vs current packaging configurations from 2018 to 2022.

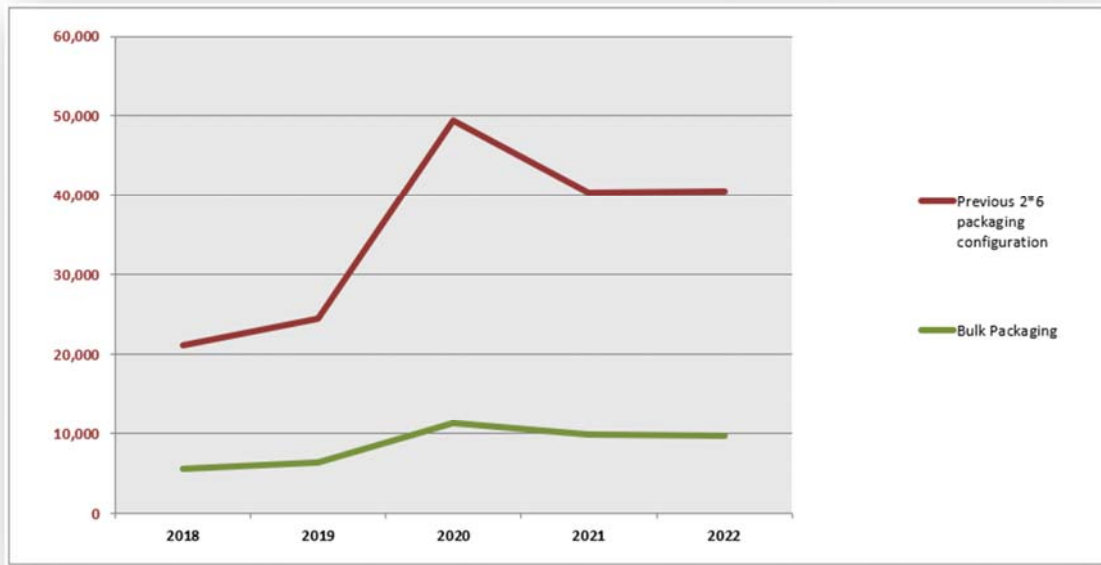


Figure 6.8. Compares US retail product line the amount of cardboard used in kg for previous vs current packaging configurations from 2018 to 2022.



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

Table 6.9 and Figure 6.10 below illustrate the environmental impact on our business resulting from the changes made to the packaging configurations of our TruClose® trade product lines, based on both actual figures from 2017 to 2022 and our forecast for 2023.

PACKAGING IMPACT (CALENDER YEAR)	2018	2019	2020	2021	2022	2023
QTY of TruClose Products Shipped to Trade Market	121,600	130,648	148,717	182,747	158,368	138,250
QTY of Packaging Used (KG)	49,514	45,916	52,235	64,644	56,230	48,863

Table 6.9. Environment impact trend on packing TruClose® Trade Products in bulk packaging configurations

The shipment carton weight for TruClose® Trade product lines in 2018 was 49,514 KG. By 2022, the calculated figures indicate that the sales of TruClose® Trade products increased by around 30%, or 36,768 units. However, despite this growth, the implementation of bulk packaging led to an increase in cardboard consumption of 6,716 kg, reflecting a 13.6% rise.

With reference to the projected figures for 2023, it is expected that sales of TruClose® Trade products will increase by approximately 14%, or 16,650 units, compared to 2018. However, if we were to maintain the previous 5*4 packaging configuration, the implementation of bulk packaging is expected to result in a reduction of 651 kg in cardboard consumption.

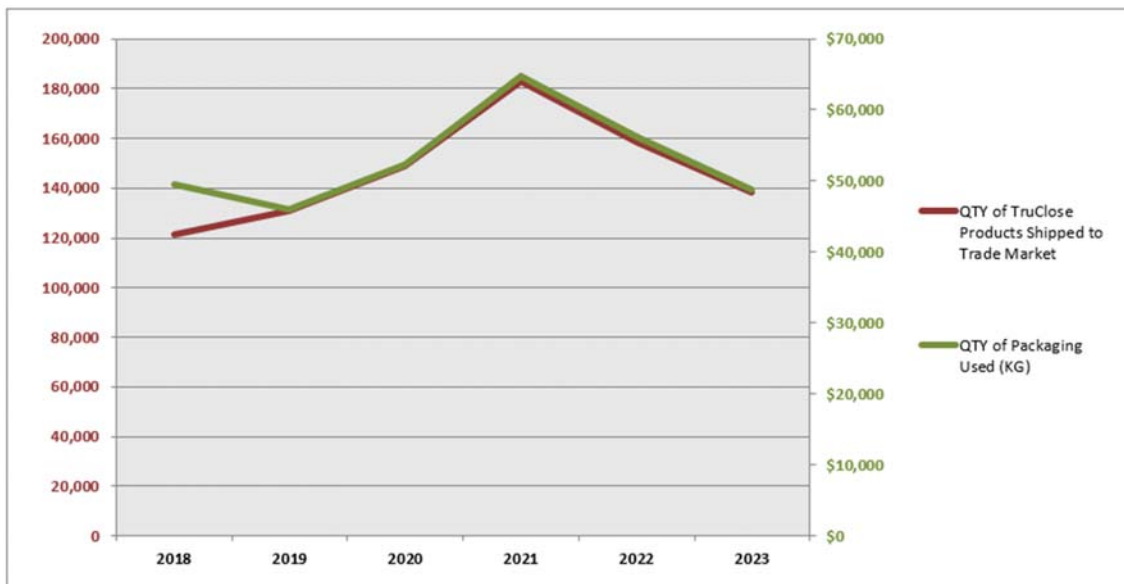


Figure 6.10. Environment impact trend on packing TruClose® Trade Products in bulk packaging configurations

In addition to reducing our carbon footprint through decreased transportation and minimised packaging, we anticipate that this initiative will yield further benefits by reducing our freight costs.

Table 6.11 and Figure 6.12 illustrate the effect on shipping costs for our TruClose® Trade products resulting from the implementation of efficient packaging, based on both our actual figures from 2018 to 2022 and our projected figures for 2023.



SHIPPING COST IMPACT (CALENDER YEAR)	2018	2019	2020	2021	2022	2023
QTY of TruClose Products Shipped to Trade Market	121,600	130,648	148,717	182,747	158,368	138,250
Cost of Shipping TruClose Products to Trade Market	\$ 61,232.79	\$ 37,443.81	\$ 42,379.81	\$ 58,274.30	\$ 75,234.78	\$ 65,189.53

Table 6.11. Shipping Cost Impact of TruClose® Trade Product lines from 2018 to forecasted 2023.

In 2018, the TruClose® Trade products were shipped 121,600 products, incurring a shipping cost of \$61,232.79. As of 2022, the number of products shipped to the US and ANZ has increased by 36,768 (approximately a 30% increase). Despite this increase, the calculated shipping cost has increased by 23%, resulting in a cost saving of \$53,893.97 if we were to continue using the previous 5*4 packaging configurations.

The drop in shipping cost is attributable to the adoption of bulk packaging, as explained in Initiative B of Section 5, which also details the shipping cost variance between the previous 5*4 inner and outer carton configurations and bulk packaging.

If we were to maintain the previous 5*4 packaging configurations, our 2023 forecast predicts an additional potential saving of \$47,070.93 in shipping costs.

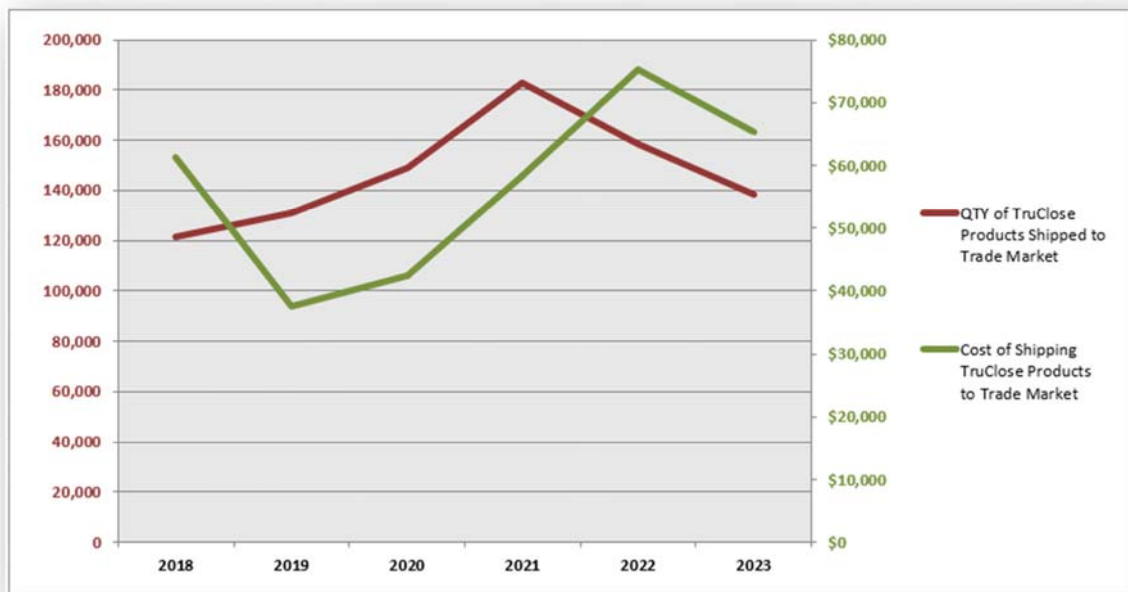


Figure 6.12. Shipping Cost Impact of TruClose® Trade product lines from 2018 to forecasted 2023.

According to our analysis, the average freight cost per m3 increased by around 32% in 2022. This rise is likely to have a significant effect on the possible reductions in shipping expenses.

D&D shall continue to track progress of this initiative throughout the 2019-2024 reporting period.



For **Initiative C** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our MagnaLatch® Retail product lines), we have seen a positive result in reducing consumption of cardboard packaging.

In 2020, we initiated a review of cartons used for the shipment of MagnaLatch® Retail product lines.

Table 6.13 and Figure 6.14 below illustrate the environmental impact on our business resulting from the changes made to the packaging configurations of our MagnaLatch® retail product lines, based on both actual figures from 2019 to 2022 and our forecast for 2023.

PACKAGING IMPACT (CALENDER YEAR)	2019	2020	2021	2022	2023
QTY of MagnaLatch Products Shipped to Retail Market	45,258	54,754	59,708	64,336	58,474
QTY of Packaging Used (KG)	46,239.87	53,952.29	59,014.72	63,362.62	50,860.43

Table 6.13. Environment impact trend on packing MagnaLatch® Retail Products in bulk packaging configurations

The shipment carton weight for MagnaLatch® Retail product lines in 2019 was 46,239.87kg. By 2022, the calculated figures indicate that the sales of MagnaLatch® Retail product lines increased by around 42%, or 19,078 units. However, despite this growth, the implementation of new packaging led to an increase in cardboard consumption of 17,122 kg, reflecting a 37% rise.

With reference to the projected figures for 2023, it is expected that sales of MagnaLatch® Retail product lines will increase by approximately 29%, or 13,216 units, compared to 2019. However, if we were to maintain the previous packaging configuration, the implementation of new packaging is expected to result in an increase of 10% cardboard consumption.

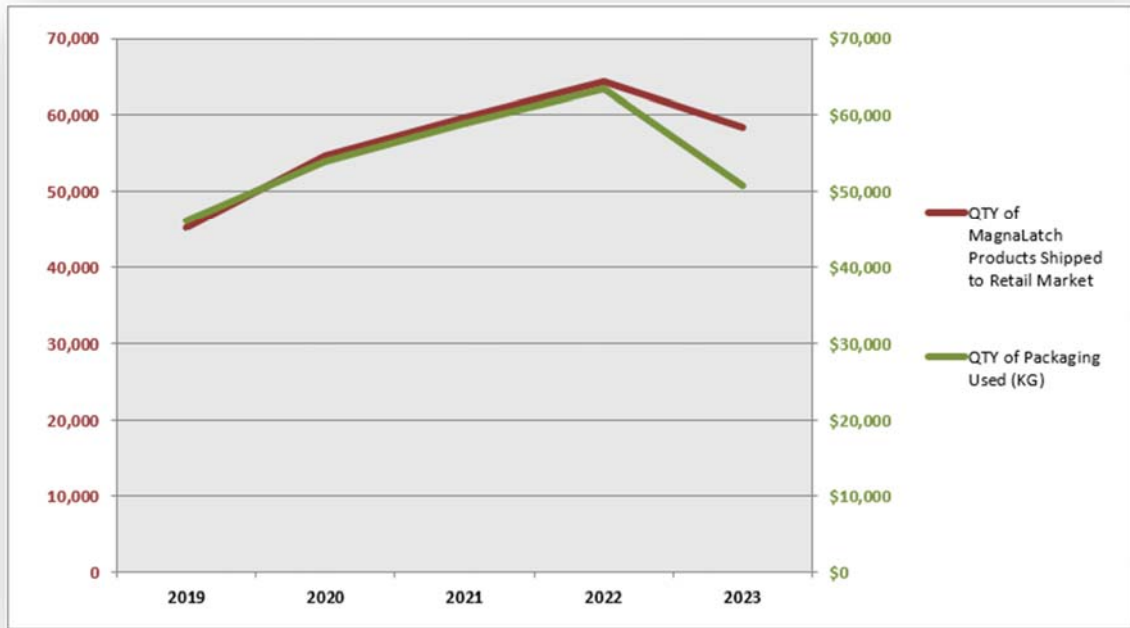


Figure 6.14. Environment impact trend on packing MagnaLatch® Retail Products in bulk packaging configurations



In addition to reducing our carbon footprint through decreased transportation and minimised packaging, we anticipate that this initiative will yield further benefits by reducing our freight costs.

Table 6.15 and Figure 6.16 illustrate the effect on shipping costs for our MagnaLatch® Retail product line resulting from the implementation of efficient packaging, based on both our actual figures from 2019 to 2022 and our projected figures for 2023.

SHIPPING COST IMPACT (CALENDER YEAR)	2019	2020	2021	2022	2023
QTY of MagnaLatch Products Shipped to Retail Market	45,258	54,754	59,708	64,336	58,474
Cost of Shipping MagnaLatch Products to Retail Market	\$ 74,935.56	\$ 61,291.23	\$ 79,071.29	\$106,228.45	\$ 83,964.76

Table 6.15. Shipping Cost Impact of MagnaLatch® Retail Product lines from 2019 to forecasted 2023.

In 2019, the MagnaLatch® Retail product line was shipped 45,258 products, incurring a shipping cost of \$74,935.56. As of 2022, the number of products shipped to the US and ANZ has increased by 13,216 (approximately a 29% increase). Despite this increase, the calculated shipping cost has increased by 41.8%, resulting in a cost saving of \$36,899.97 if we were to continue using the previous packaging configurations.

The drop in shipping cost is attributable to the adoption of new packaging, as explained in Initiative C of Section 5, which also details the shipping cost variance between the previous and new carton configurations.

If we were to maintain the previous packaging configurations, our 2023 forecast predicts an additional potential saving of \$33,992.34 in shipping costs.

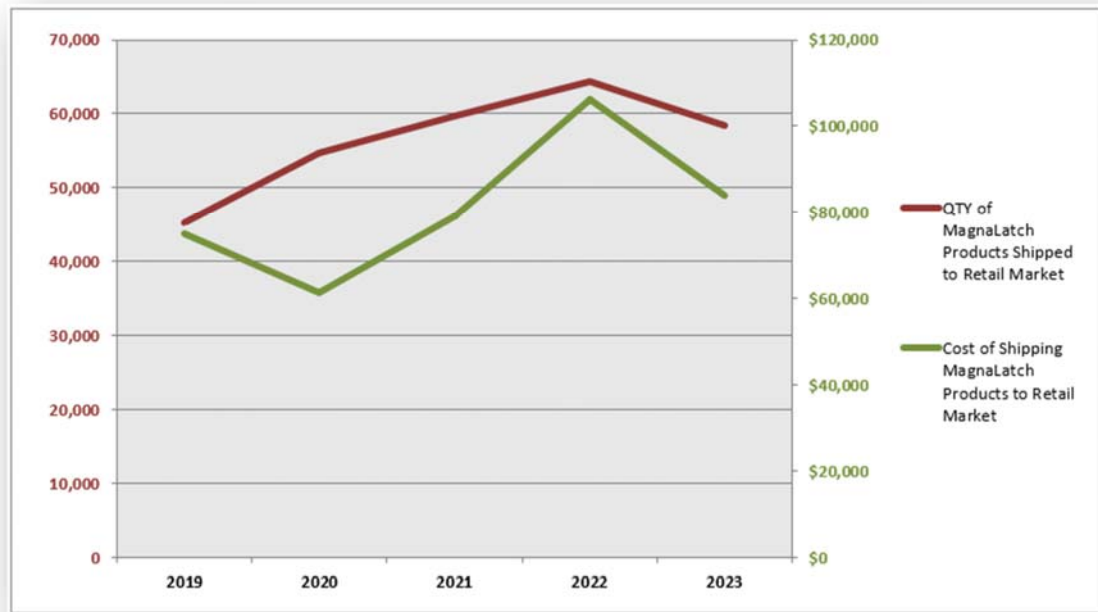


Figure 6.16. Shipping Cost Impact of MagnaLatch® Retail product lines from 2019 to forecasted 2023.

According to our analysis, the average freight cost per m3 increased by around 32% in 2022. This rise is likely to have a significant effect on the possible reductions in shipping expenses.

D&D shall continue to track progress of this initiative throughout the 2020-2025 reporting period.



7. New Opportunities and Challenges

D&D has recognised the need to minimise its cardboard packaging consumption and has formulated a plan to do so. At present, D&D utilises a staggering number of over 40 distinct models of cardboard packaging, each of which carries its safety stock level and a Minimum Order Quantity (MOQ). While these measures are in place to avoid stock shortages, they inadvertently lead to increased consumption of cardboard packaging.

To overcome this challenge, D&D is taking a proactive approach to consolidate its range of cardboard packaging models during manufacturing. To that end, we have already streamlined the packaging configurations for the US Retail, TruClose® Trade, and MagnaLatch® Retail product lines. This strategy is expected to significantly reduce the quantity of cardboard packaging consumed during production, resulting in substantial savings in the long run.

In addition to this, D&D is actively seeking to collaborate with suppliers to explore new opportunities for designing and implementing lightweight recycled LDPE flexible packaging for our trade product lines. This approach will not only reduce our carbon footprint but also demonstrate our commitment to sustainable business practices.

Furthermore, D&D is looking to consolidate retail pouch bags, optimise product packaging sizes and adopt recyclable materials for our retail pouch bags in a cost-effective manner, aligning our efforts with the APCO 2025 national targets. By taking these steps, D&D aims to reduce its impact on the environment and promote a greener future.



8. Conclusion

Although cost is often the primary motivator for making changes to packaging, utilising the four principles of the Sustainable Packaging Guidelines (SPG) to strengthen the business has been proven to be advantageous.

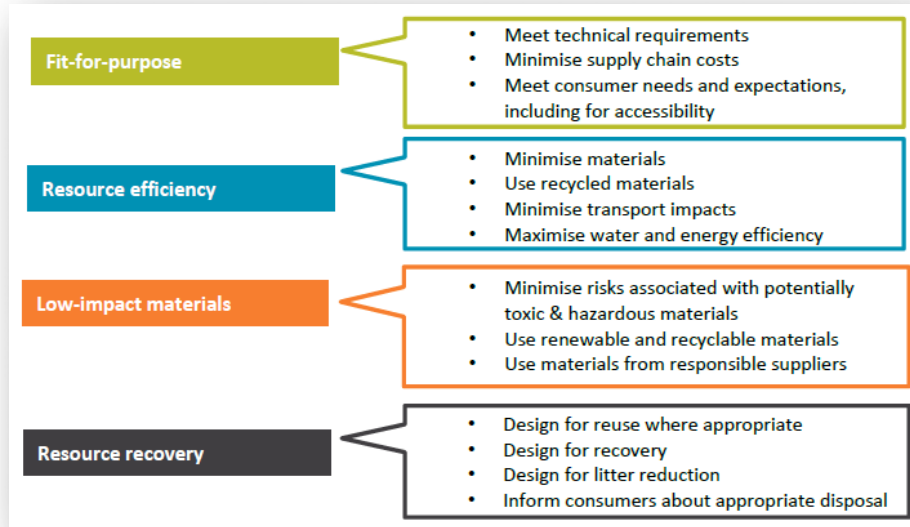


Figure 8.1. Four principles of the Sustainable Packaging Guidelines (SPG)

For **Initiative A** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our US retail product lines. Under **Initiative A**:

- D&D has managed to decrease the consumption of cardboard packaging by 133,239.25 kg from 2018 to 2022, despite experiencing an average sales growth of approximately 26% per calendar year.
- Our US Retail Product Lines experienced a reduction in shipping costs by \$872,230.10 from 2018 to 2022, marking a 62% decrease compared to if we had maintained the previous 2*6 packaging configurations.

For **Initiative B** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our TruClose® Trade Product lines. Under **Initiative B**:

- In 2022, we managed to decrease our consumption of cardboard packaging by 651.3 kg, despite experiencing a sales growth of approximately 14% compared to the same period in 2018. To illustrate the impact of this achievement, if we were to continue using the previous 5*4 packaging configurations for 2022, we would not be able to save an additional 8,215.99 kg in cardboard consumption.
- In 2022, our TruClose® Trade Product lines experienced an increase in shipping costs by 23%, despite experiencing a sales growth of approximately 30% compared to the same period in 2018. To put this into perspective, if we had maintained the previous 5*4 packaging configurations, we could not have saved \$53,893.97 in shipping costs for the calculated 2022 calendar year.

For **Initiative C** (Evaluating packaging using SPG – Sustainable Packaging Guidelines) for our MagnaLatch® Retail Product lines. Under **Initiative C**:

- In 2022, we managed to decrease our consumption of cardboard packaging by 5.1%, despite experiencing a sales growth of approximately 42% compared to the same period in 2019. To illustrate the impact of this achievement, if we were to continue using the previous packaging configurations for 2022, we would not be able to save an additional 1,634.69 kg in cardboard consumption.



- b. In 2022, our MagnaLatch® Retail Product lines experienced an increase in shipping costs by 5.5%, despite experiencing a sales growth of approximately 31.9% compared to the same period in 2019. To put this into perspective, if we had maintained the previous packaging configurations, we could not have saved \$36,899.97 in shipping costs for the calculated 2022 calendar year.

For **Initiative D** (Consolidating and developing recyclable packaging material) for our retail pouches. **Under initiative D:**

In the year 2021, D&D embarked on a close partnership with various suppliers and testing laboratories to create a breakthrough solution for our retail pouches. In 2022 and through rigorous experimentation and collaboration, we were able to achieve a recyclable material specification for our pouches that not only meets SPG guidelines but also aligns with D&D's sustainability goals.

Our new material specification allows us to create sustainable packaging that is both eco-friendly and tailored to meet our unique packaging requirements. One of the key features of this new specification is the use of 100% recyclable special PE clear plastic, which ensures the packaging is both durable and environmentally responsible.

Furthermore, we have developed a plan to reduce the consumption of pouch bags by consolidating retail items and streamlining safety stock levels and minimum order quantities for each retail customer.

