



## Returnable Protective Packaging and Reverse Logistics for Major Domestic Appliances (MDA).

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# Agenda



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# Introduction.

Packaging plays a critical role in almost every industry, every sector and every supply chain. Appropriate packaging is essential to prevent loss of goods and, as a result, decrease impact on environment. Effective packaging makes a positive contribution towards achieving a sustainable society by, (e.g):

- i. Meeting consumers' needs and expectation for the protection of goods, safety, handling and information.
- ii. Efficiently using resources and limiting environmental impact.
- iii. Saving costs in the distribution and merchandising of goods.

An environmental assessment of packaging may include the manufacturing and distribution system, the wastage of goods, damages and commercial returns, the collection systems, as well as recovery or disposal operations. This group of standard activities and supporting reports including LCA, provides a set of solutions which aims to:

- a) Reduce environmental impact;
- b) Support innovation in products, packaging and the supply chain;
- c) Avoid undue restrictions on the use of packaging;
- d) Prevent barriers and restrictions to trade.

Packaging is designed to provide a number of functions for users and producers such as : containment, protection, information, convenience, utilization, handling, delivery or presentation of goods. A major role of packaging is prevention of damage to or loss of goods. (see ISO 18601, Annex A for a list of the functions of packaging).

# Circular Economy.

On April 2018, the European Directive has been finally approved with 553 votes in favor, 37 against and 57 abstentions.

With end of life of plastics, reuse, reverse logistics and Ecodesign, the directive proposes actions designed to make the vision for a more circular plastics economy.

The Ecodesign Working Plan contributes to the Commission's new initiative to promote measures covering the whole lifecycle of products and materials, encouraging and finalizing, the Extended Producer Responsibility (EPR) scope.

Finally, the Energy Label will be affected by the KIND of packaging used and the amazing (and often forgotten) product damages occurring along the whole the supply chain from the factory to the end-consumer.

In the meantime, through our Circular Supply Chain solutions and relevant services, we support global Authorities and Citizens into the creation of a better Environment.

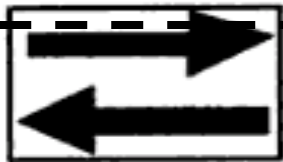


# Packaging waste

## Verpackungsabfall

The **Reusable** Package symbol is placed on **packaging** that can be recycled. It is designed to encourage the reduction and recycling of **packaging**. Most manufactures of large **appliances**, such as washers, must use **reusable packaging**. The seller is to pick up the **shipping container and return it to the manufacturer**.

### **Reusable** Package



The Europeans have put a great deal of emphasis on recycling and reusing. Most manufacturers that ship to the EU will need to have a formal recycling plan. The

symbols discussed above and the laws regarding **packaging** and recycling are in the *EU **Packaging** Waste* and *ECO-Label Directives*. Their numbers are Directive 93/C 205/01, Regulation (EEC) No. 880/92, Commission Decision 93/326/EEC, and Commission Decision 93/517/EEC. While recycling is still under national authority, proposal 93/C 205/01 is patterned after German law. The ECO-Label requires a formal recycling program.

# The disposable packaging history.



- In 1960 the sales price of a washing machine was around 250 Euro, the same of an entry level car.

Damage rate along the whole supply chain was less than 1%.

- Around 1970, with volumes increase and the aim in reducing non core business costs (disposable packaging) and transports costs, the

product/packaging become “clampable” and from that moment, Major Domestic Appliances technologies have **been linked to** and **limited to** the type of packaging and handling / transport requirement specifications.

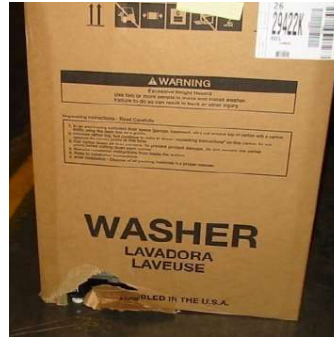
**In 2017 the sales price of a washing machine was still 250 Euro and the cost of an entry level car was around 10.000 Euro!**

**While volumes are always growing as well as the need to reduce industrial costs, incredibly, damages along the supply chain are from 5% to 9%, with relevant economical losses, further environmental impact and additional costs to citizens.**

(USA - has been calculated that due to the high % of commercial returns, retailers are increasing sales price by 11%)

# The problems we solve.

1



## Damages

Global average of 5%



2



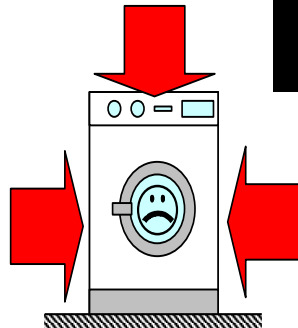
## Environmental impact

average of 2,4 Kg x piece x 320 Mpcs

Disposable packaging global impact per year 768.000 Toe



3



## Structures oversized

MDA structures are designed to withstand vertical & lateral pressures up to 1200 Kg.



... but, what are the benefits for Citizens ?



# The disposable packaging



# Who's Free Pack Net.



Company Purpose : sustainable development and supply chain costs reduction by integrating **Returnable Protective Packaging (RPP)** with Reverse Logistic Management.

It developed its own:

- Global patents.
- RPP - (mono material – PP & EPP) Standard for White Goods product families .
- Reverse Logistics Network & RPP Tracking Management System.

## **Our services**

- Offer 1 : RPC - RPP rented per cycle to Manufacturers or Retailers** to protect the appliances and the environment from the factories to the final customers. The offer include RPP Reverse Logistics. The offer may include an insurance.
- Offer 2 : RPS - Regional Protection Service to Manufacturers** – include RPP assembly in the factory, transports, warehousing, transports to Retailers **or** transports to final customers and WEEE collection, RPP Reverse Logistics.
- Offer 3 : Long Term Rent for Commercial Returns to Retailers or Manufacturers** – Universal RPP rented for a period (usually 24 months) to protect commercial returns.

# White goods first because.

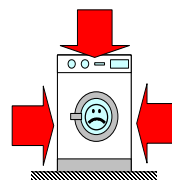
1. Over the past 30 years there has been not technological innovation in packaging **and Disposable Packaging is not the core business for Manufacturers and Retailers** (and they always need to reduce their costs).
2. White Goods have standard dimensions. The washing machine that is produced by Electrolux in Europe, is the same that is produced by Haier in China, by Whirlpool in the USA or Brasil, or by the same Electrolux in Curitiba-Brasil .
3. The White Goods Manufacturers are Global organisations.
4. White Goods are sold through the logistic platforms of the major Global Retailers (they deliver/install the appliance and they take back the disposable packaging) and most of them have Global Sourcing Organization.
5. The disposable packaging does not protect adequately products and the global average in damages is around 5% (with relevant economical losses).
6. Retailers suffer the problem of damages on other types of products (TV).
7. The bulky disposable packaging in Polystyrene, Cartoon, Wood and Thermoshrinking film is difficult to dispose and disposable costs are still rising.
8. Global Authorities are pushing Manufacturers and Retailers to eliminate packaging waste and reduce CO<sub>2</sub> emissions.



# The problem



Disposable Packaging are not able to resist to stacking and clamping forces.  
Metal Structures oversized.



# Damages, the introduction.



The boom in e-commerce has further raised the number of commercial returns to record levels and the trend is constantly growing with millions of Euros/Dollars/RMB/Pounds of returned goods, additional costs, loss of profit and environmental damages.

At the end, all these costs have an impact on the final consumer and on the community.

Damages destroy customer satisfaction and you'll never be able to satisfy the expectations of your clients.

A structural protective packaging is **URGENTLY** requested to avoid relevant enormous economical losses.

外损破坏了客户的满意度，  
而且你永远无法达到你的合作伙伴的期望。

# Where 5% of damages happen



CLAMPING

**1 % factory & primary distribution.**



CLAMPING

**2.5 % warehouse, handling, secondary distribution.**



CLAMPING

**1.5 % POS, handling, final delivery.**



# Clamping forces on the products

from 600 Kg to 1200 Kg



# Damages 1





# Damages 2



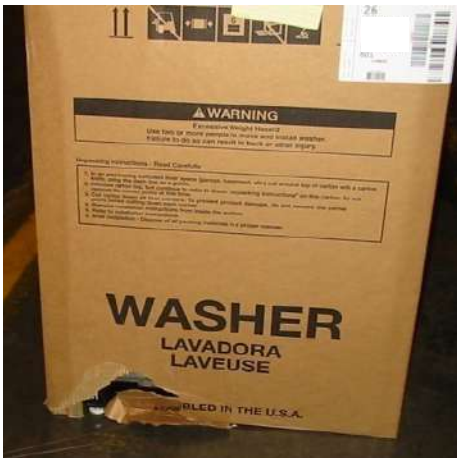
# Damages 3



# Damages 4



CLAMPING



damages destroy customer satisfaction, sometimes never replaced !



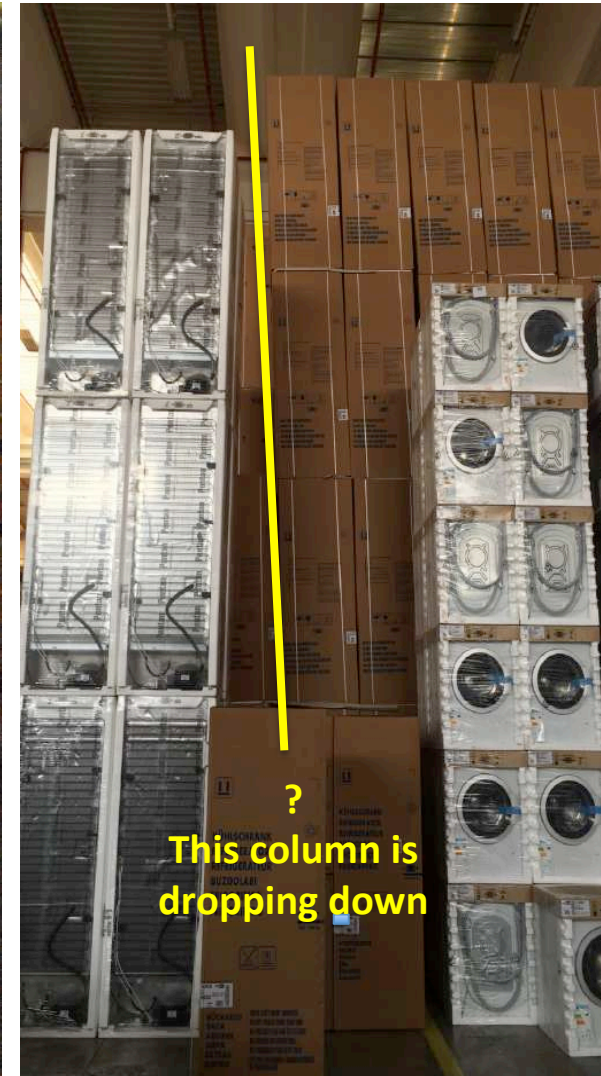
# Damages 5



# Damages 6



# Stacking with cardboard packaging



# Damages and Re-packaging costs.

Due to the common use of Retailers and 3PL, today all the products with minor damages on the EPS or Cardboard are Rejected and Manufacturers are obliged to re-pack the appliances with a cost up to 56 Euro per piece.



# Damages, CO<sub>2</sub> and Extended Producer Responsibility.

Image from the 2016 public balance of a Manufacturer

Average CO<sub>2</sub> impact during the lifetime of an appliance\*



Recycling	1%
Materials	9%
Manufacturing	1%
Transportation	1%
Product usage	88%



the overall CO<sub>2</sub> impact that is generated with product damaged along the supply chain, commercial returns and disposable packaging is not included.





The solution  
Returnable Protective Packaging

全球性的问题，全球性的解决方案

With a structural RPP the appliance could be developed and produced only to function and NOT to withstand vertical and lateral forces!

# The RPP breakthrough technology.

Our competitive advantage is in our unique technical solution.

In order to eliminate product damages, we have separated the appliance protection in two main areas:

- **protection from external loads.**
- **protection from drops.**

The structural Shell is the element that is fully taking under control the stacking and clamping forces; it is extremely resistant and therefore useful to be re-used several times.

The Spacers are decoupling the appliance from the external shell and, at the same time are absorbing kinetic energy during drops. They are produced in accordance with the standard shape of each product family.



Through our unique experience, we are able to control the movements (and relevant kinetic energy) of an appliance that aim to be protected along the supply chain by structural parallelepiped.

# Advantages of the RPP solution



Damages reduced to zero.

Net saving per piece along the Supply Chain - from 25 to 40 €.

Manufacturer Net Earning increase.

Packaging waste reduced to zero.

CO<sub>2</sub> reduced by 77%.

The RPP is not an investment for Manufacturers and Retailers.

Improved utilization of warehouse space - structural shell up to 1200 Kg.

Industry 4.0 ready.

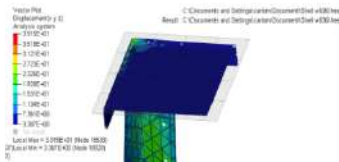
Easy handling & Easy Re-Packaging.

Product Technology Change allowed.

Major Retailers involved.



# RPP – Designed to resist



# RPP – Designed to protect

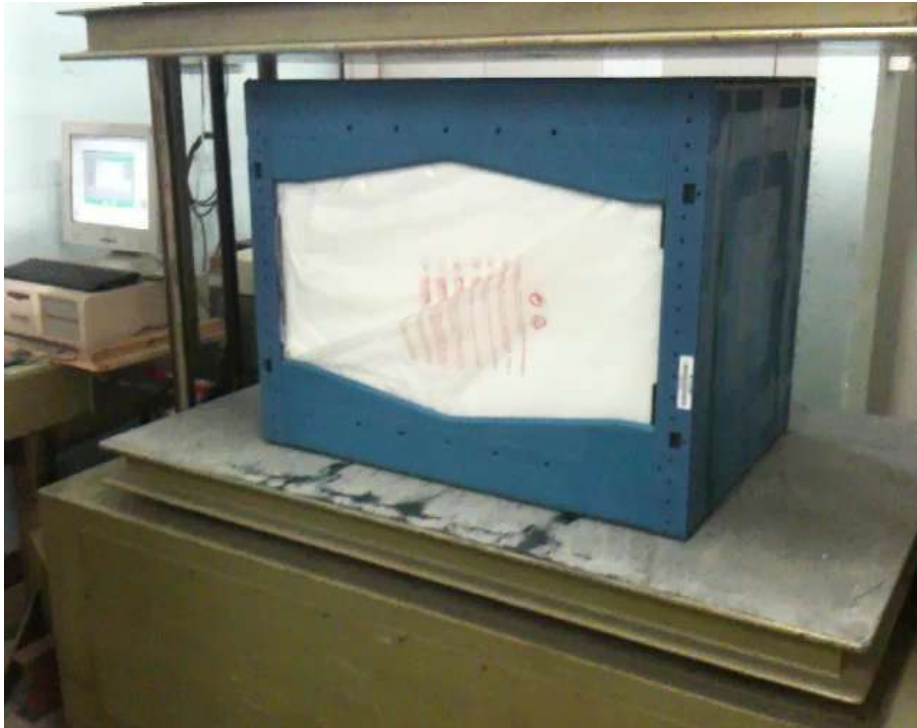


because Returnable Protective Packaging is our core business

# RPP – DW protection is certified by



Certification tests:  
each RPP model  
(and relevant  
product model)  
is certified by  
TUV.



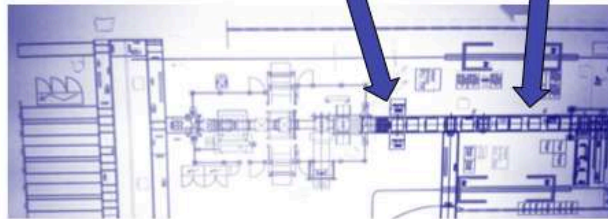
# The Factory validation

## Interventions on Assembly lines - 3



The current label can be applied on the RPP as today

Space for storing the RPP parts to be identified



5

We support the MDA Manufacturer in the identification of the better solutions to be adopted in the factories.

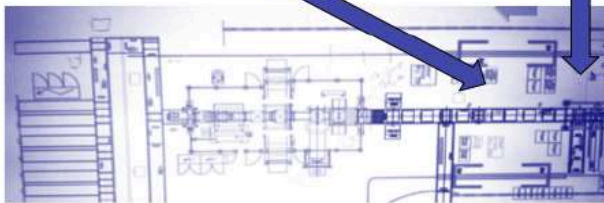
Please see the three pictures from a Manufacturer's Report.

## Objective

## Interventions on Assembly line - 1

RPP assembly cycle remain the same

Line for feeding RPP bases to be added. Rfid reading for model identification to be considered to activate alternatively the 2 lines



5

Is it feasible to use RPP on the production line at the \_\_\_\_ factory to package Tumble Dryers?

- Technically Yes
- Logistically Yes
- Economically Yes
- IME objectives Yes

# In Stores Carry out



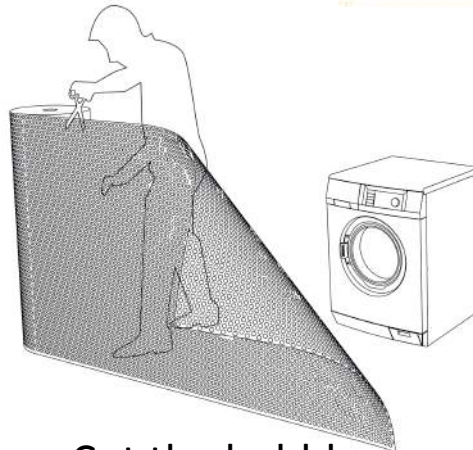
**FREEPACKNET**

Working together to  
eliminate Waste and reduce CO<sub>2</sub> emissions by 76%

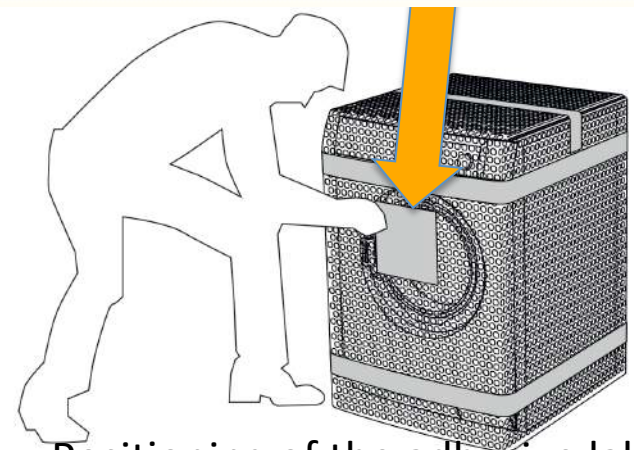
Environmental Protective Packaging made in  
Biodegradable Bubble Wrap suitable for home  
transport and handling

**FREEPACKNET**

Few customers buy and bring home the appliance. In this case the RPP remain in the store and the appliance is re-packed with a **Biodegradable bubble wrap sleeve**.



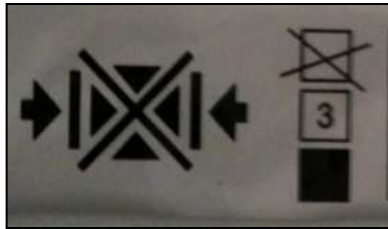
Cut the bubble wrap



Positioning of the adhesive label



# Stacking differences



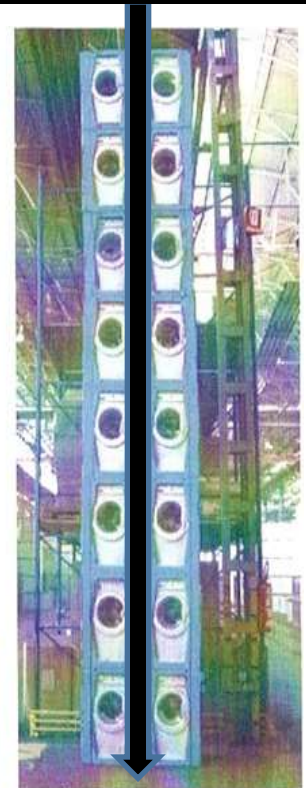
Disposable packaging  
1200 Kg on  
the product



RPP  
1200 Kg on  
the shell



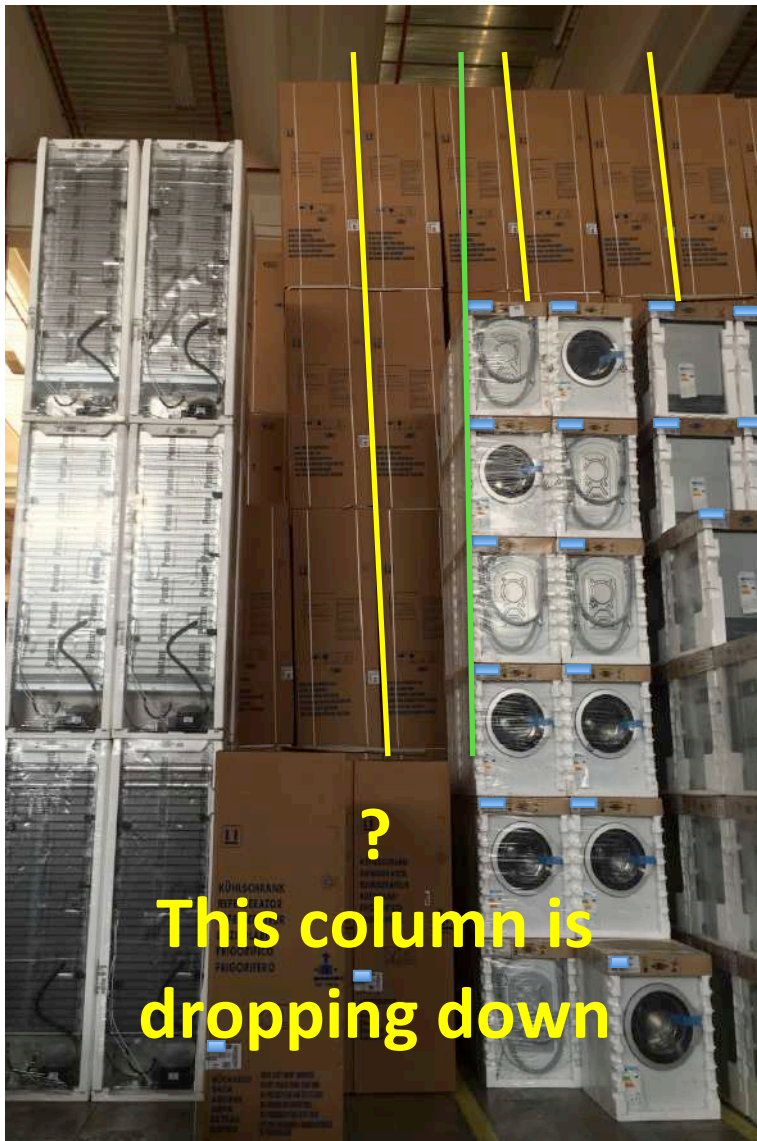
**The stacking limit is the height  
of the warehouse**



**The product can be redesigned with  
important savings in material !**



# Stacking - comparison



?  
**This column is dropping down**

With our antisliding technology, there is not any relative movements between the products



# Stacking economical differences

a) Warehouse 40.000 sqm

b) n. 2 appliances ( 640 x 670 mm - W x D ) x sqm

c) n. 12 rotations x year

✓ Example 1

**Stacking 3** level :  $3 \times 40.000 \times 2 \times 12 = 2.880.000$  pcs / year

✓ Example 2

**Stacking 5** level :  $5 \times 40.000 \times 2 \times 12 = 4.800.000$  pcs / year

✓ Example 3

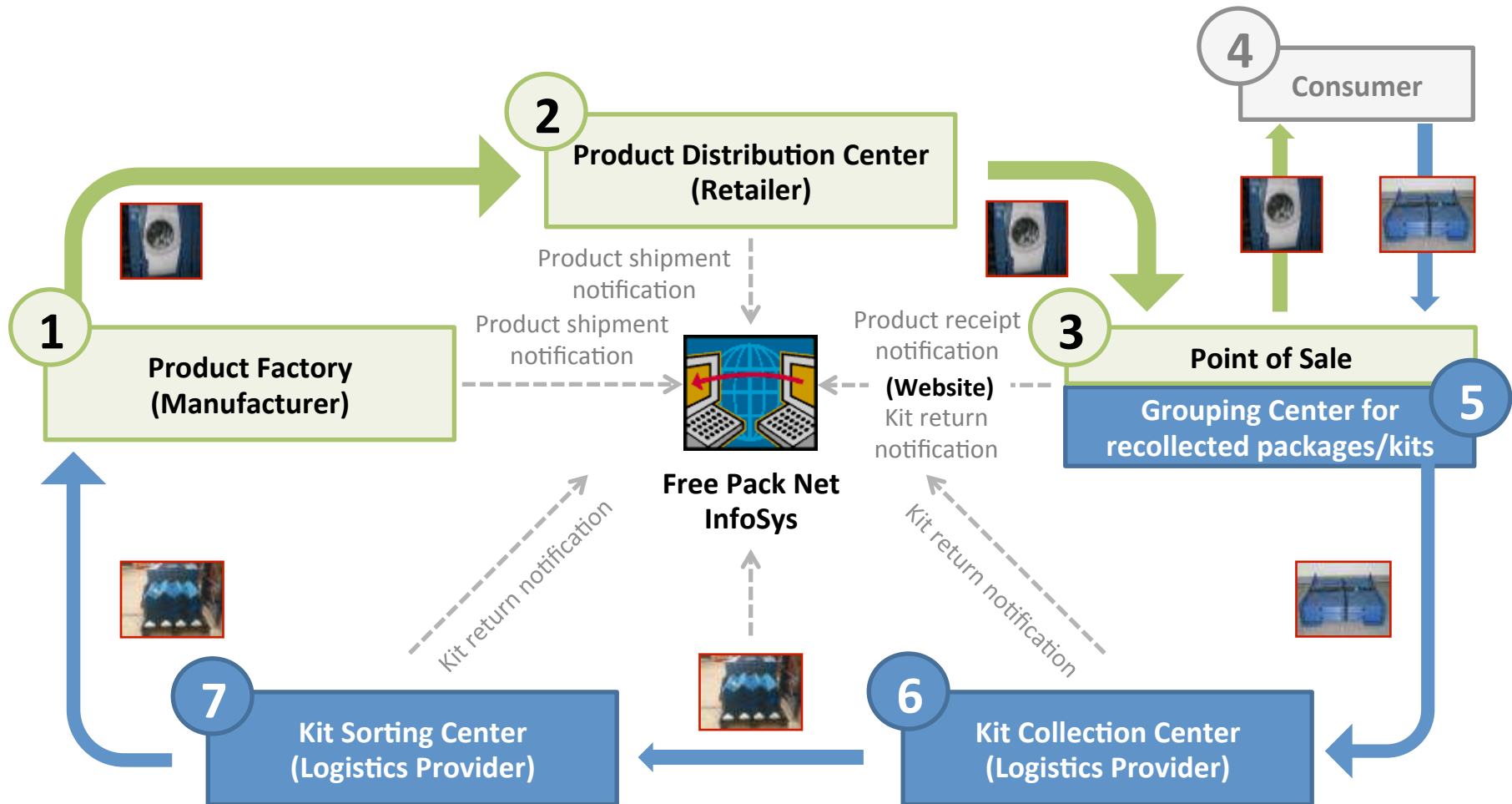
**Stacking 8** level :  $8 \times 40.000 \times 2 \times 12 = 7.680.000$  pcs / year

With the RPP it is possible to manage the seasonality and overstock without extra investments



# The logistic validation and Circular Supply Chain

# Reverse Logistics process



# The RPP and Industry 4.0



Today's logistics technology has to keep pace with an ever-expanding volume of goods and growing customers demands for more frequent, more reliable deliveries.

In this environment, it becomes critical for manufacturers and 3PL to transform original models to enable a more real-time, digitally enabled service able to put in place the **internet of goods**.



Ready for automation, robotics and internet of goods

# Integration with major global 3PL.

Yes,  
because we  
are expert in  
Products  
Protection,  
Reverse  
Logistics and  
Circular  
Supply Chain





# The RPP Trial with 3PL in the UK

KUEHNE+NAGEL



## Kuehne+Nagel's /Freepacknet End Trial

- KN to assess value and durability of the product as a returnable unit. Damages reduced to zero.
- Within the UK market, KN to assess feasibility of collecting and sorting the RTP in accordance with the Freepacknet reverse logistics procedures. Procedures OK.

**POS Collections**



**Collection Center**





# The market validation

# The Factory

In this case, for the assembly of the RPP, a semi-automatic assembly line has been used in parallel of the main production flow.



# In Field results - 1

## Solution

---

### Freepack net

Reusable product packaging that provides full protection for under the counter MDA products. The packaging allows:

- the multiple stacking of products for better storage utilisation.
- The use of MHE to move product reducing the manual labour needed.

We have trialed this packaging on Recoveries product transported to Manchester Clearance Store, with a ZERO damage finding\*

We have also tried this packaging for Customer/Supplier collections of faulty products. The feedback is:

- Store
- Customer
- Driver
- HDC

**DSG international**  
bringing life to technology

# In Field results - 2

## Internal Trials



- Internal trials have been completed within Acton Gate to review the handling and feasibility of the new packaging solution.
- Checks have been made to ensure stability of packaging in storage, handling by DC staff and delivery drivers and movement by clamp truck around the DC



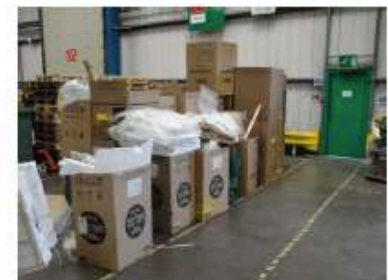
## Internal trial conclusions

- Acton Gate have approved the new packaging for health and safety and warehouse handling.

# The Retailer - Environment

## White goods re-usable packaging

### *Environmental concerns*



Approximately 2kg of mixed packaging waste per unit is returned, sorted and processed at DC

Approximately 140 tonnes of polystyrene waste is generated each year just from built-in oven packaging.

Polystyrene packaging is extremely difficult to recycle as there are very few processing plants in the UK which are prepared to handle the material.

The re-usable packaging removes all of this waste and can be reused at least 20 times. The re-usable packaging is also 100% recyclable.

# The Retailer - Stacking, Clamping, Safety, Environment

## White goods re-usable packaging

### *Performance of packaging (clamping, stacking and container air bags)*



#### **Clamping**

The re-usable packaging can be safely clamped in all six directions without affecting the integrity of the product up to 1500kg of pressure



#### **Stack height**

Units can be safely stacked to 10 high or a safe stacking weight of 1000kg



#### **Container air bags**

The re-usable packaging has a specially designed lid and base which gives maximum friction when stacking and transporting which negates the need for air bags to be used.



# Retailer – damages impact on financials

Damage rate: 6%.

Damages costs per appliance equivalent to: 18 €

Total economical losses due to damages: M€ 5,4

Below, clamping tests with 1000 Kg on the RPP.



confidential



property of Free Pack Net Holding Sagl





# In Store validation



商场里的RPP  
商场经理发自内心的喜欢RPP因为他们再也不需与客户交涉由于外损产生的问题。



Stores managers really enjoy the RPP because finally they have not to have anymore discussions on damages with customers



# Extract from a survey - 1

## In-store Customer Intercept Review – Current Packaging

Customers identify issues with current MDA packaging, especially from Customers who have had negative experiences in the past with carryout packaging, especially with larger items (including MDA products)

*"It's really annoying when the packaging is so much bigger than the product and you can't get it in your car."*



### Issues arise once product is at home

A major gripe remains the polystyrene packaging, which is both messy and clunky to dispose of properly and takes time to do

The size of bins is also a consideration, with a recognition that they are getting smaller, meaning there is less disposal space

*"Polystyrene is so messy; it's like a snowstorm sometimes."*

*"The rubbish collectors are so fussy now about what they will take. I have to break it up into small pieces so that it fits in the bin."*



### Home delivery is the preferred option (if customers have time to wait)

The role of home delivery offers clear benefits – the driver will take the used packaging away, saving the customer the hassle of disposal

*"I hate being left with all that polystyrene and cardboard after getting a new machine home. That's why I prefer getting things delivered."*

There is an openness to change given customer frustrations around packaging, and recognition that current solutions are not the most environmental ones





IPPC.

The value of the Free Pack Net proposal  
in the white goods Supply Chain  
(from the factory to the final customer).

# The value of our solution – the IPPC

## Integrated Product Protection Costs comparison model

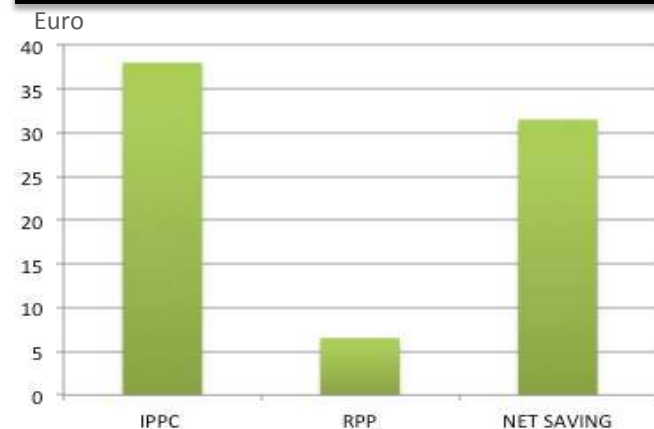
The IPPC is a dynamic model developed by FPN that allows the true induced costs associated with protecting LHA's (Large Household Appliances) throughout the whole Supply Chain to be calculated.

The IPPC model identifies the costs at each point of the Supply Chain from the current type of packaging and, as a result, the cost of damages, compliance schemes, stacking level and other areas.

The IPPC is calculating the costs applicable to the Manufacturers Supply chain as well as those associated to the Retailers area of responsibility .

5 different areas are influencing the appliance protection costs along the Supply Chain.

1. Packaging type
2. Damages
3. Stacking
4. Handling and Transports
5. Environment



## 1 - Packaging Type

- 1 Engineering
- 2 Tools (investment)
- 3 Different materials (Styrofoam, cardboard, wood, etc).
- 4 Styrofoam (depend from the barrel oil costs) and transformation costs.
- 5 Manuf/Retail Compliance scheme fee to be paid per ton.
- 6 Manufacturer Sales margin on packaging .
- 7 Retailer Sales margin on packaging.
- 8 Collection, sorting, recycling.
- 9 Disposal costs.
- 10 Waste, Energy consumption and CO<sub>2</sub> emissions.
- 11 Insurance in the factory to cover styrofoam fire risk.
- 12 Disposal of packaging waste is increasing – (in Belgium 2,42 € to dispose 1 Kg of styrofoam)
- 13 The styrofoam burning process include the production of dioxin.
- 14 The styrofoam recycling costs are dramatically influenced by the very high transports costs. One truck with the capacity of 100 m<sup>3</sup> and 40 Tons is saturated with only 3 Tons of Styrofoam with a density of 30Kg per m<sup>3</sup> .
- 15 No insurance to protect from product damages.

*“With disposable packaging the appliance have to be developed and produced to resist to vertical and clamping forces”*



## Rent of RPP

- 1 None.
- 2 None.
- 3 Monomaterial - Polypropilene
- 4 Fixed price for 3 years.
- 5 None – costs decrease.
- 6 Manufacturer Sales margin on RPP.
- 7 Retailer Sales margin on RPP.
- 8 Collection and preparation of the std loading unit.
- 9 None.
- 10 No Waste, Energy - 85%. CO<sub>2</sub> - 76%.
- 11 Practically no risk – cost decrease.
- 12 No disposal costs .
- 13 Fully recyclable – the recycled material is used to inject new pieces.
- 14 RPP Reverse logistic is on charge of Free Pack Net.
- 15 Possibility to include and insurance to protect from product damages.

## 2-Damages

30% product disposed of  
30% products sold with 30% discount  
30% products to be repaired

1. Manufacturer - Credit to retailer for Damages on arrival (5 /6 € per product).
  - a. Management of the procedure between Manufacturer and Retailer.
2. Retailer- Losses of purchasing costs (30% of products damaged and disposed of)
  - a. Retailer / Manufacturer Retrieving costs
3. Retailer - Losses on Sales margin (30% of product damaged and sold with 30% discount)
  - a. Retailer/Manufacturer – Retrieving costs
4. Retailer/Manufacturer – Losses for product damaged but suitable for repair.
  - a. Retailer/Manufacturer Retrieving Costs.
  - b. Re-Packaging (packing cost and manpower)
  - c. Re-Delivery (transport costs)
5. Manufacturer/Retailer – losses on Company Image
6. Retailer – Extra time in Store to manage damages with customers (30 min each damage) (and during the peak season?)
7. Risk of damages is influencing the insurances costs along the whole supply chain.



## RPP – zero damages

1. None or only the quota to manage “services”.
  - a. None.
2. None.
  - a. None.
3. None.
  - a. None.
4. None.
  - a. None.
  - b. None.
  - c. None.
5. Increase of Brand Image due to new Environmental Friendly RPP concept.
6. None.
7. Decrease of Insurances costs (in the factory as well in the supply chain).

## 3-Stacking



## Stacking with the RPP

### Warehouse height 9 mt

- 1 5 level (4,5 mt) for WM, DW, DRY – load on the products
- 2 7 level ( 4,7 mt) for Built In Oven – load on the products.
- 3 16 level for Hob (1,9 mt) – load on the packaging (this products are on pallet)
- 4 3PL – as above
- 5 Retailer – as above
- 6 Product sliding and risk of column drop – Health & Safety
- 7 Banding the column in the Manufacturer’s warehouse – cost increase.
- 8 3PL and Warehousing – as above
- 9 Retailer – as above

- 1 9 level (8 mt) – or up to a vertical load of 1200 Kg (saturation increase 80%) – warehousing cost reduction
- 2 12 level ( 8,2 mt) for Built In Oven – load on the products. Up to 1200 Kg.(saturation increase 70%) – warehousing costs reduction.
- 3 50 level for Hob (8 mt) – load on the packaging (saturation increase 210%) – warehousing costs reduction.
- 4 3PL – as above
- 5 Retailer – as above
- 6 None – Health & Safety OK
- 7 Not requested – cost reduction.
- 8 3PL and Warehousing – as above
- 9 Retailer – as above



## 4-Handling & Transports



## RPP – structural and safe

- 1 Clamping – load on the product (appliance's metal structure more resistant).
- 2 Clamping one way (side to side)
- 3 Truck unload from the side require manual appliance rotation by 90°.
- 4 If transport with container a cushioning on the container side wall is requested = costs increase .
- 5 If transport on truck, products banding may be required to avoid antisliding.
- 6 Clamping on different appliances may require different clamping pressure.
- 7 Manual handling require product lifting to the height of the hips (around 100 cm or 40 inches).
- 8 Damages on the Manufacturer's Logistics - Insurance fee increase do to risk of damages.
- 9 3PL and Warehousing - as above.
- 10 Retailer – as above.

- 1 None – product structure can be reduced and product redesign can allow the introduction of new technologies.
- 2 Clamping two ways – saving in costs
- 3 No manual handling – saving in time.
- 4 No cushioning are requested due to antisliding system and structural shell saving in costs, time and container saturation increase.
- 5 Not necessary – saving in costs and time.
- 6 The same clamping pressure for all the products. Side to side clamping is allowed simultaneously with Front to Rear. Front to Rear Clamping is allowed in all the conditions.
- 7 Manual handling (hands under the RPP 's Lid) allow product lifting of 5 cm from ground (no risks of damages due to slip hand and consequent uncontrolled drop). No risks for installers.
- 8 None – decrease of costs.
- 9 3PL and Warehousing - as above.
- 10 Retailer – as above.
- 11 Easy Product Repacking in all the steps of the supply chain as well in the customer home.



Packaging Waste per appliance :  
2,4 Kg (average)

Equivalent to 0,51 ton of CO<sub>2</sub>

Global picture per year

- MDA volumes : 320 M units
- Packaging waste : 768.000 Toe (equivalent to 2.560.000 Trucks)
- CO<sub>2</sub> emissions: 163 M Toe

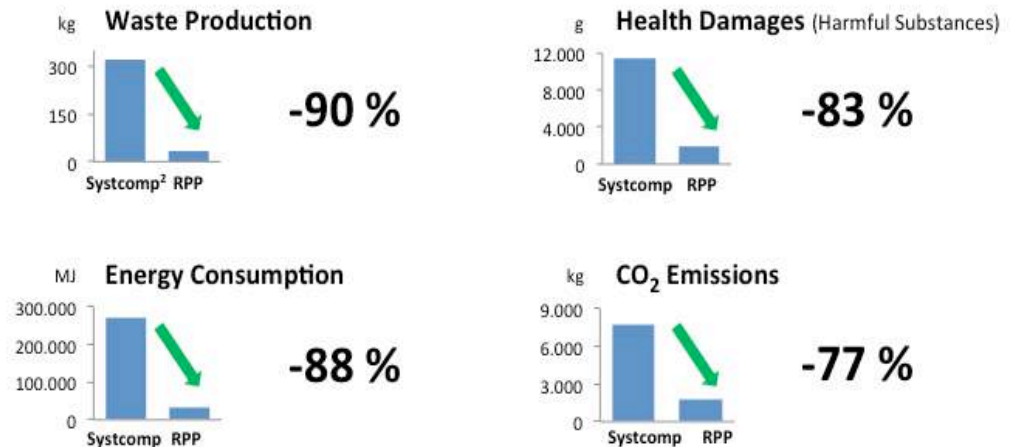
**A very urgent action of responsibility is requested.**

The LCA investigation considers seven main categories for the evaluation of the environmental impacts, e.g. health damage and greenhouse effect.

All tested environmental impact categories show at least 70 % improvements of the new RPP compared to conventional packaging.

### Results of the Life Cycle Analysis<sup>1</sup>

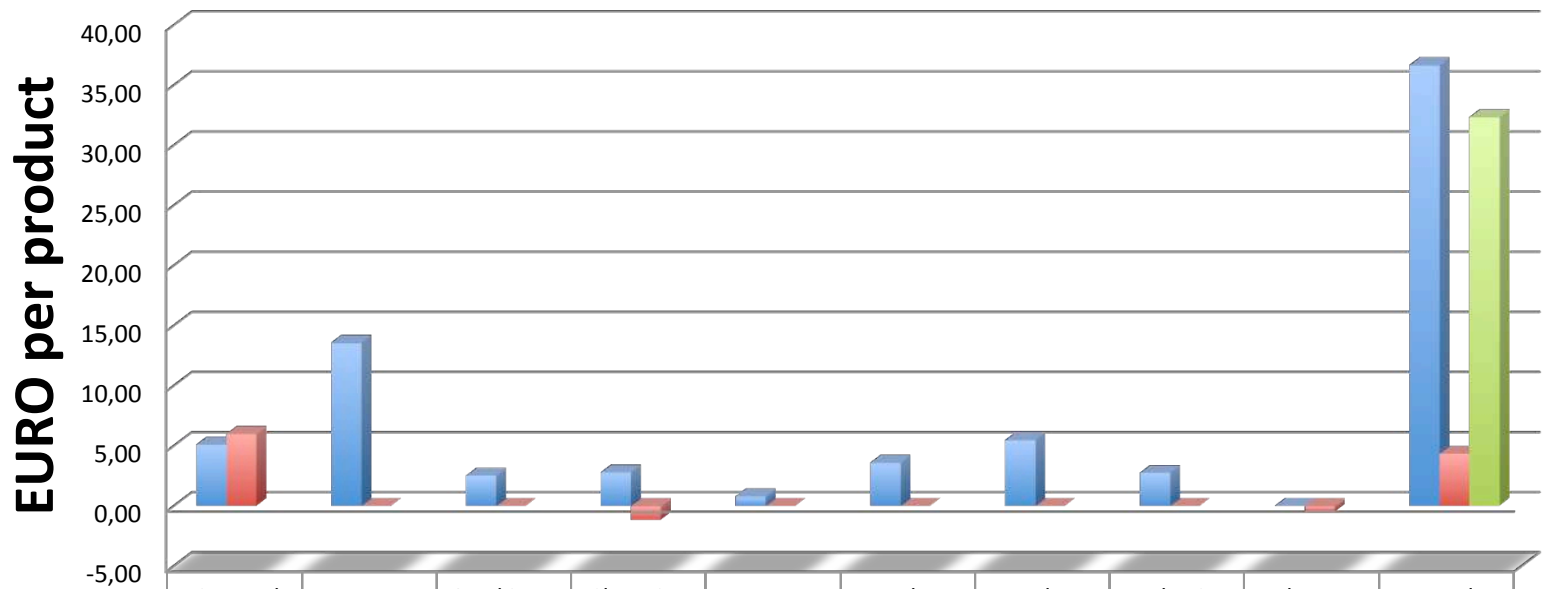
comparing conventional packages with the RPP for 1.830 washing machines each



The LCA is NOT taking in consideration potential saving in product reengineering as well truck emissions saving during the Styrofoam reverse logistics process - equivalent to 2.56 M truck x 150 km (average distance to the near recycling center).

# IPPC – Supply Chain Economical comparison

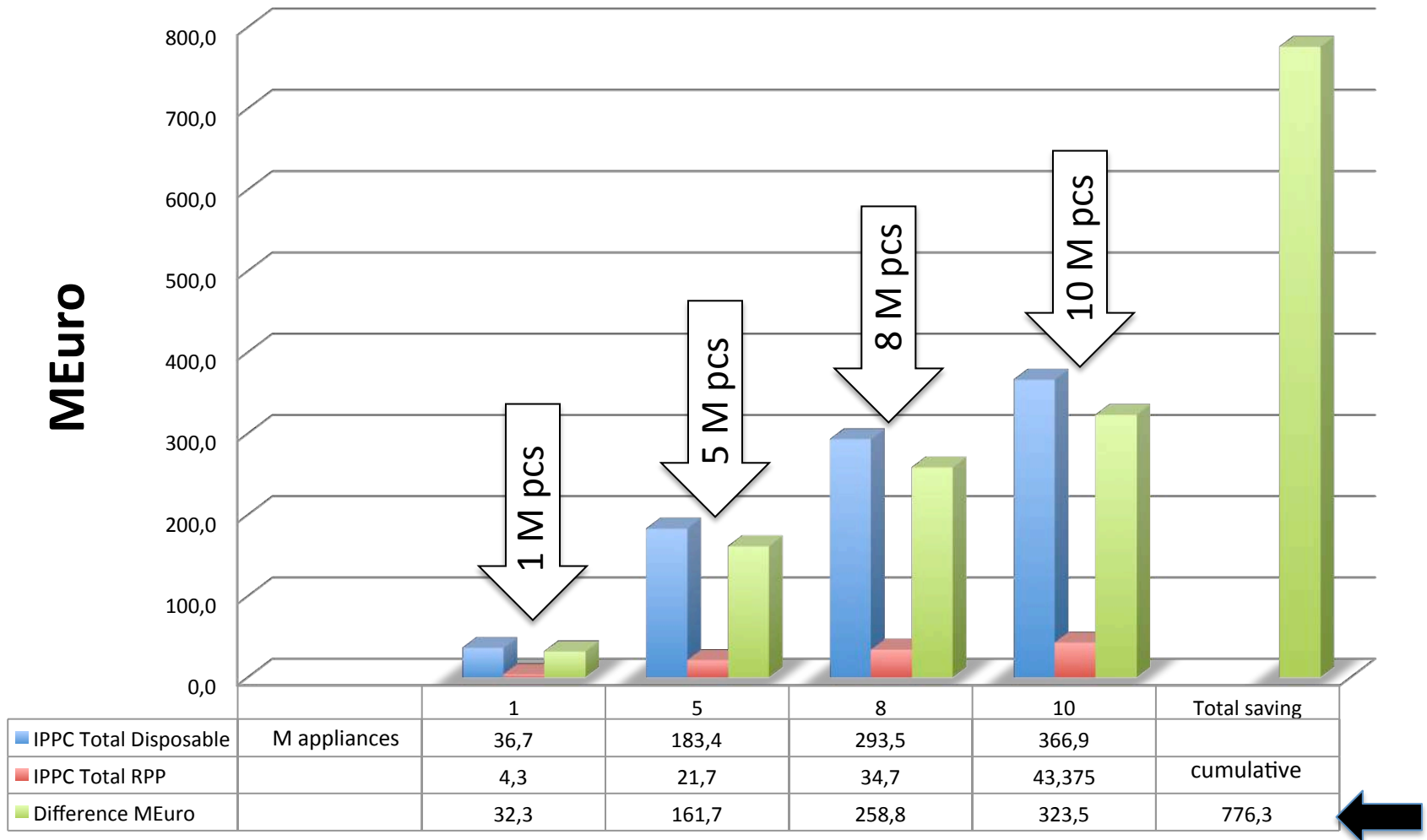
## Disposable Pack Vs RPP



	Disp pack purchase /RPP rent	Damages	Stacking - Banding and unbanding	Clamping & Stacking	Damages management	Product credit to Retailers on arrival	Product return to rework to factory	Packaging Disposal cost	Rebate to retailer	Total
■ IPPIC Total 5 Disposable Pack	5,13	13,60	2,52	2,80	0,80	3,6	5,48	2,76	0	36,69
■ IPPIC Total 8 RPP	6	0	0	-1,16	0	0	0	0	-0,5	4,34
■ Difference										32,35

**Total saving with the RPP: 32 Euro; Manufacturer 20 € and Retailer 12 €**

# IPPC – economical advantage in a 4 years plan



**RPP 4 years plan : 776 ME; Manufacturer 495 ME € and Retailer 291 ME**

# MDA Sector- the RPP impact on Financials

## Simulation on a Manufacturer the whole supply chain is considered

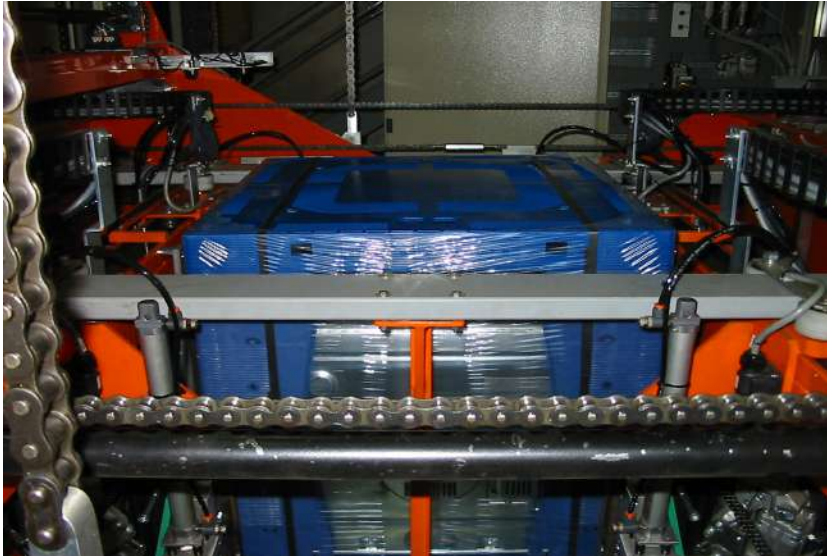
- Annual Revenues : 10,5 B Euro
- Annual Operating Margin : 580 M Euro
- Annual Volumes : 18 M pcs



- Using the RPP, the IPPC - Integrated Product Protection Cost Comparison model show an average saving of : 32 Euro per appliance
- That is equivalent of an Impact on Company Profit : + 576 M Euro

With RPP the percent incidence on the Operating Margin is: + 100 %

# Contacts



Free Pack Net is not a simple supplier of blue packaging. Our deep competencies and know how in product protection, reverse logistics and traceability, united with the knowledge in product development, technologies, factories, distribution, retailers, costs analysis and environment, make us an enviable partner from the R&D to the final customers and back.

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