



WMF 2018

– Session 2 –

Which KPI's for using Materials Smarter, Less and Longer

Guala Closures approach



Guala Closures Group

WMF KPIs 2018: Relevance for GC

How we «Use Less»

How we «Use Smarter»

Concluding remarks



Guala Closures Group Values





Guala Closures Group Strategy

Driving Value in Closures Markets



From Standard to Added Value



Simple Closure



Safety non refillable closure



Luxury Closures



Long Lasting Trusted Partner

with world's leading spirits and wine companies

Global players

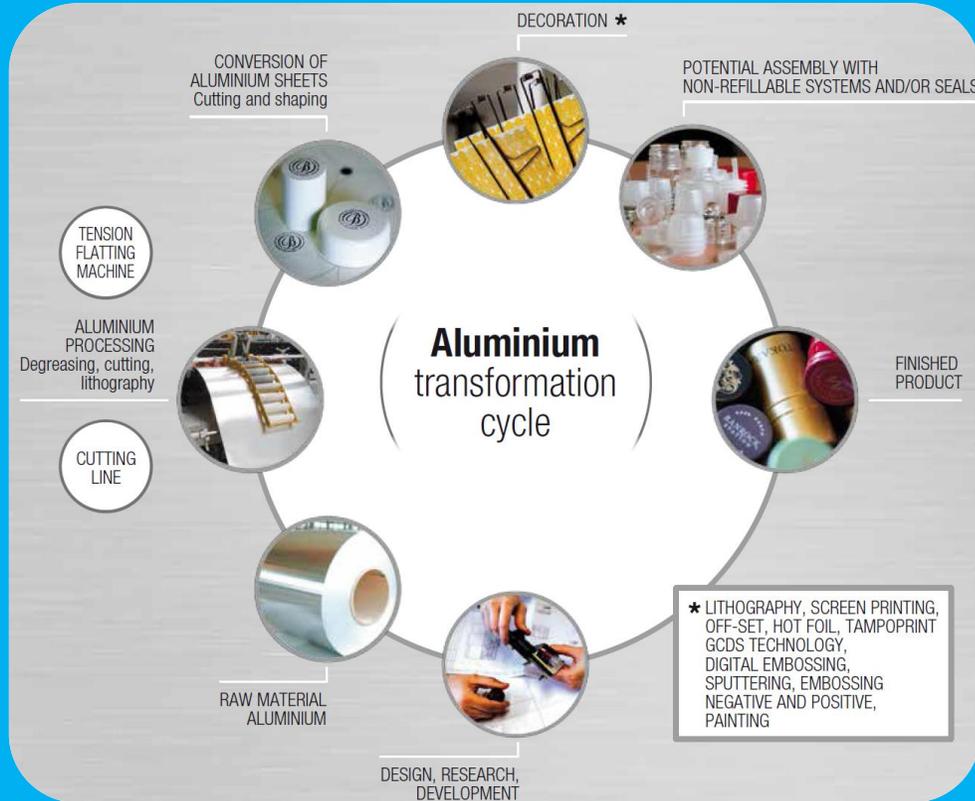


Regional champions





Production Processes



EMISSIONS



ENERGY



WASTE



RAW MATERIALS



WATER



EFFICIENCY



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WMF KPIs 2018: Relevance for GC

How we «Use Less»

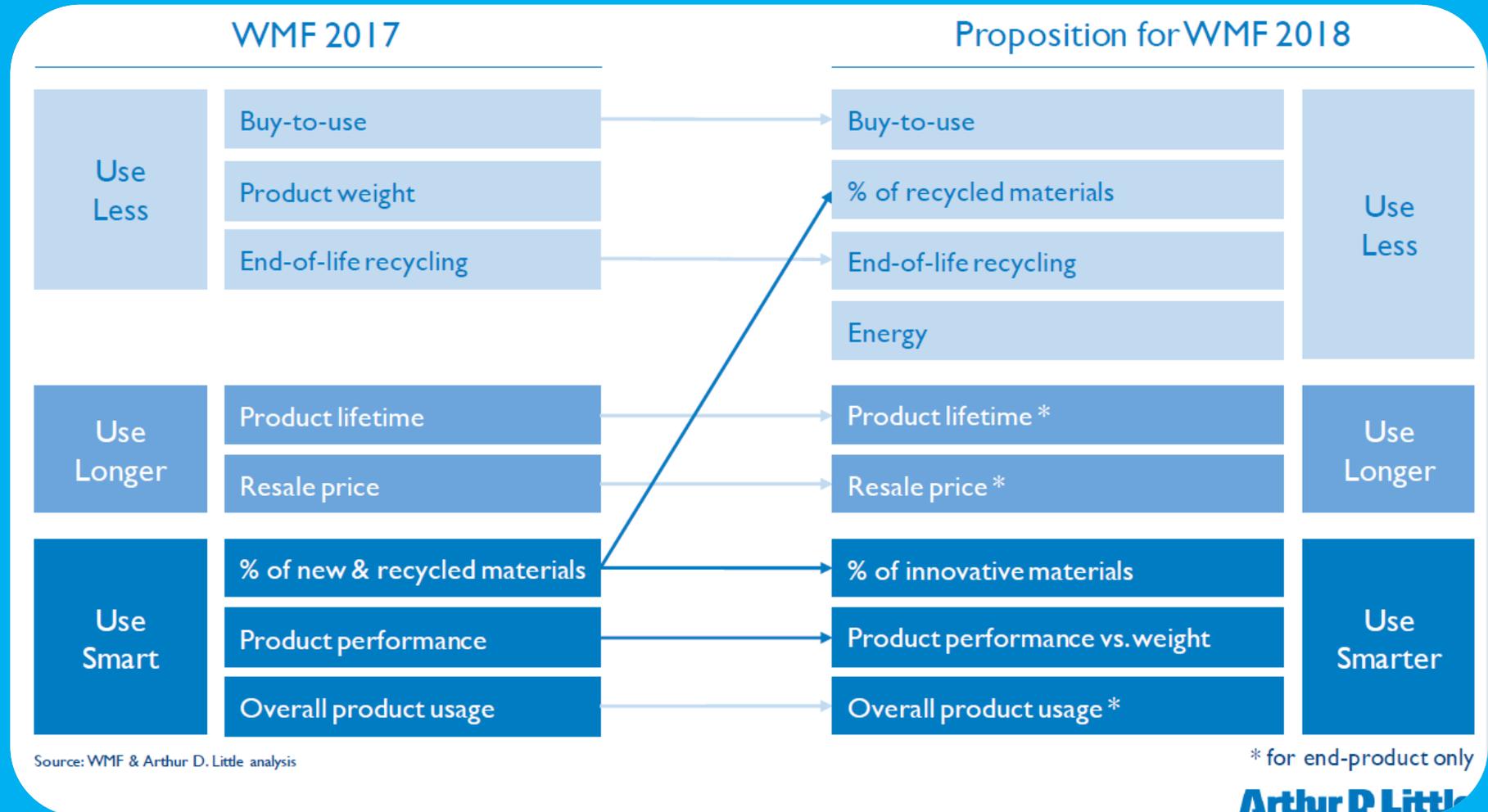
How we «Use Smarter»

Concluding remarks



KPI's WMF 2018 for GC:

Use Less & Use Smarter are more relevant





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Use less:

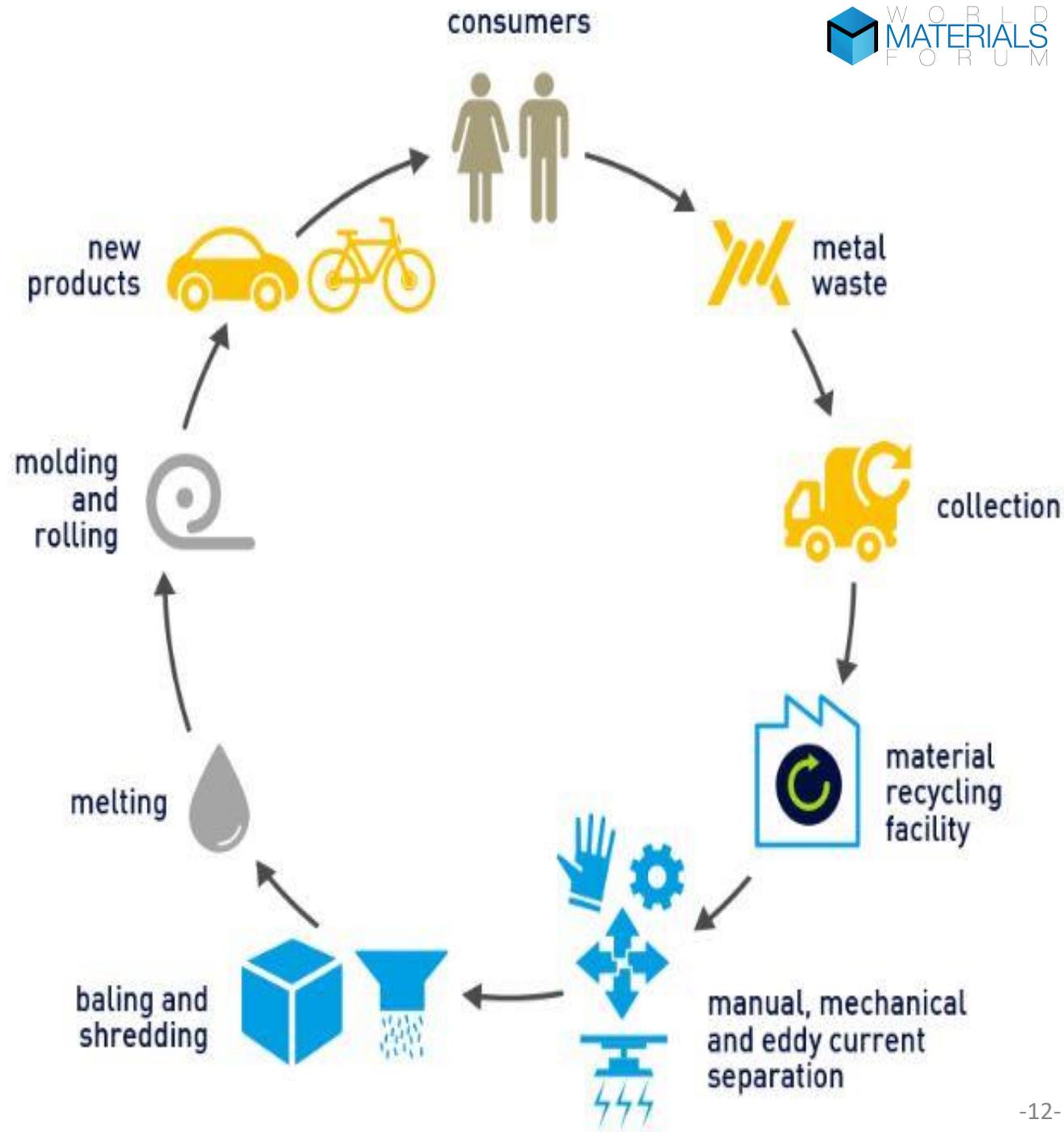
Use of recycled materials

■ % of recycled aluminium in our supply

Our suppliers certify that their material contains recycled aluminium: between 35% to 90%.

FOOD SAFETY FIRST!

Note: Due to stringent Food safety regulations, it is not possible to use recycled plastics resins in direct contact with food.





Use less: End-of-life recycling

■ % of recycled aluminium (internal policy)

Aluminium scraps are compacted, fused and transformed back into raw materials. In Magenta, in 2016:

- Total Aluminium bought: 14.500 tons of which 12.000 tons are from recycling

→ Recycled Aluminium use: 83%

■ Products developed towards full recycling:

- by our customers e.g. «Wave»:

130 Mio of closures are recycled every year and turned into a different application,

→ saving > 2.100 tons of PE/year

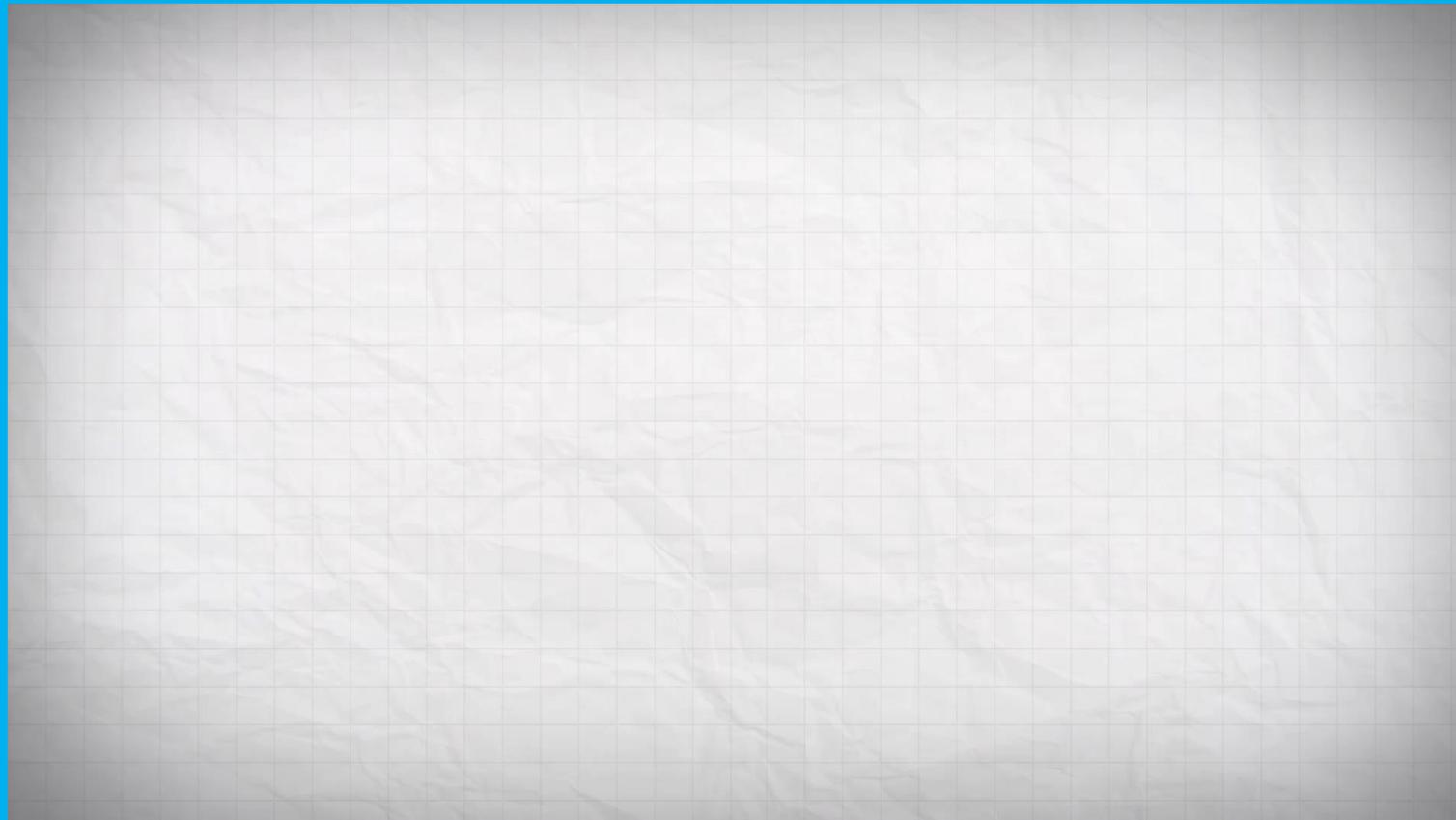




Use less: End-of-life recycling

- Products developed towards full recycling:

- by end users e.g. «Green Cap», to be launched in 2018 in Japan





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Use Smarter: innovative materials

■ Use of alternative alloy to achieve down-gauging

For all short caps in Spain and Italy, Changing aluminium alloy enabled us to reduce thickness saving 4% of aluminium, 36tons.

SPECIFICHE DELL'ORDINE / ORDER SPECIFICATIONS					
Prodotto Product	lega alloy	stato fisico temper	spessore thickness (mm)	larghezza width (mm)	lunghezza length (mm)
NASTRO	3105 PK	H24	0,230	980	

Composizione chimica / Chemical composition [%]												
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ga	V	Ti	Pb	N.Coil
0,1277	0,4424	0,0795	0,4140	0,5527	0,0054	< 0,01	0,0151	< 0,01	< 0,01	0,0385	< 0,01	3232000101
0,1209	0,4293	0,0849	0,3903	0,4760	0,0029	< 0,01	0,0120	< 0,01	< 0,01	0,0394	< 0,01	3231900101

Caratteristiche meccaniche / Mechanical Properties			
Codice rotolo / Coil number		3232000101	3231900101
Carico di rottura/Tensile Strenght	Rm MPa	178,0	178,0
Limite di snervamento/Proof Stress	Rp02 MPa	154,0	154,0
Allungamento a rottura/Elongation	A50 %	6,1	5,6
Erichsen	mm		
Anisotropia/Baring	%	1,40	1,40
Durezza/Hardness	HB		

SPECIFICHE DELL'ORDINE / ORDER SPECIFICATIONS					
Prodotto Product	lega alloy	stato fisico temper	spessore thickness (mm)	larghezza width (mm)	lunghezza length (mm)
NASTRO	8011 PK	H14	0,270	1035	

Composizione chimica / Chemical composition [%]												
Si	Fe	Cu	Mn	Mg	Cr	Ni	Zn	Ga	V	Ti	Pb	N.Coil
0,5695	0,9354	0,0771	0,0288	0,0102	0,0019	< 0,01	0,0137	< 0,01	< 0,01	0,0239	< 0,01	3282700101

Red circles highlight Fe, Mn, Mg, and Ti in both chemical composition tables. Red lines connect these elements between the two tables, showing the transition from the 3105 alloy to the 8011 alloy.



Use Smarter: innovative materials

■ Valorisation of local by-products

Residues from distillation processes can be used as natural fillers.

The advantage is twofold:

- Aesthetics and natural feel, aligned with current trends
- Reduction in the use of petrol-based resins

■ Use of Agave fibres from Tequila distillation in Mexico:

2018: 3 Mio overcaps planned
~ 30tons resin





Use Smarter: Product performance vs Weight

■ Standardization of minimum thicknesses:

Fostering the synergies of the Group and sharing best practices, seemingly minor differences can lead to significant material saving

230 tons aluminium saved going from 0.230 → 0.225 mm (*it is ½ A380!*)

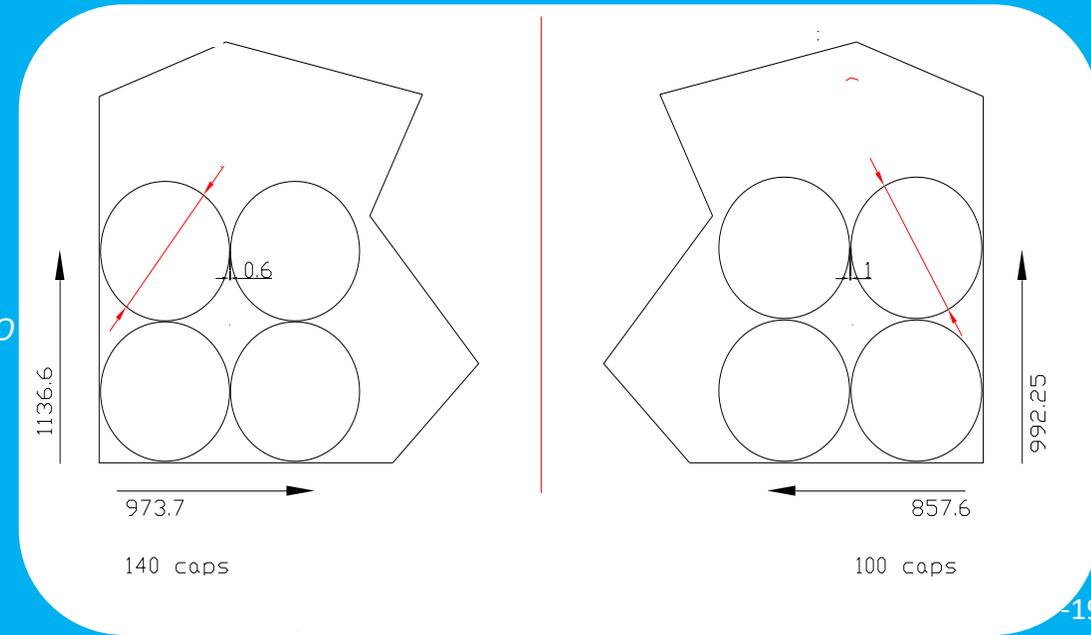
■ Optimized number of punched caps on larger aluminium sheets

1- Spring closures Italy: switch from aluminium strips to full sheets

→ Industrial scraps decrease by 3%
~ 40 tons

2- New Punching sequences in Poland, New Zealand & Mexico

→ Industrial scraps decrease by 4%
~ 300 tons





Use Smarter: Industry 4.0

With 27 factories in the world and a very precise know-how to teach, we started to work with industry 4.0 to improve production efficiency, decrease down time, work instructions, training, quality validation, maintenance thanks to augmented reality to replace human interface:

INDUSTRY
4.0





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Since 2011,
Publication of GC's Sustainable Report...



**SUSTAINABLE
DEVELOPMENT**
Annual report 2016



...we are part of a complex supply chain...



... where partnership is of paramount importance...

GC Brazil – «WAVE»



Innovative, minimum environmental impact
exclusively for the Cachaça 51 brand

100% PE:

- the material can be fully recovered
- shredded and re-used for other purposes



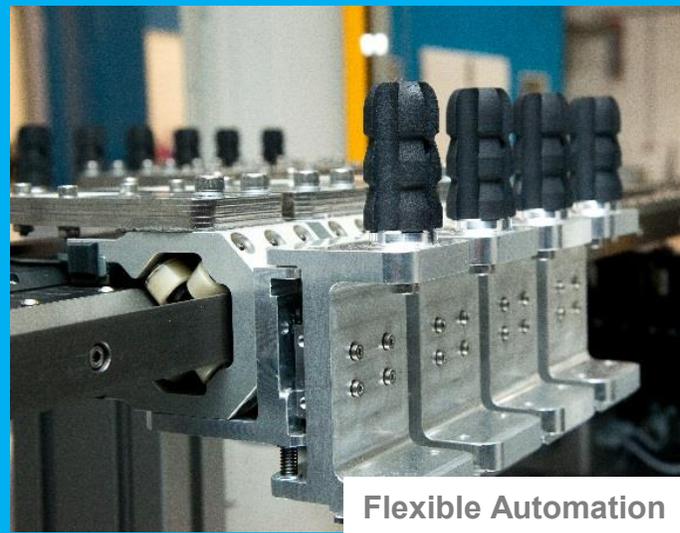
...as well as Innovation Process through
New Technologies



Magneto Shaping



3D Printing



Flexible Automation



Connected
Closures



Thanks...