

FERVER-FEVE

Meeting

Origgio, 09 April 2019

Order of Business (1)

1. Introduction (9.00 - 9.15)
 - ❖ Welcome
 - ❖ Anti-Trust Statement
 - ❖ Tour de table
2. Visit of the Eurovetro plant (9.15 - 10.30)
 - ▶ Coffee Break (10.30 - 11.00)
3. Legislation and Market - FEVE
 - ❖ New recycling targets for glass
 - ❖ New targets on PET bottles
 - ❖ Pressure on packaging collection and recycling
 - ❖ A market imperative: increasing glass collection and recycling
4. Increasing glass collection & recycling - FERVER (12.00 - 12.30)
 - ▶ Sandwich lunch (12.30 - 13.00)

Order of Business (2)

5. Aiming for furnace-ready quality (13.00 - 13.45)

- ❖ Fine fractions
- ❖ Lead
- ❖ Development of sorting and treatment techniques/innovation
- ❖ CTP's in poor collection quality systems vs in excellent collection quality systems

6. End of Waste (13.45 - 14.00)

7. Joint actions & next steps (14.00 - 15.00)

- ❖ Harmonized calculation methodology
- ❖ improve glass collection & recycling

Introduction (9.00 - 9.15)

- ❖ Welcome word (FERVER - Eurovetro - FEVE)
- ❖ Anti-Trust Statement (R. Hardy)
- ❖ Tour de table

Visit of the Eurovetro plant (9.15 - 10.30)



Coffee Break (10.30 - 11.00)



Legislation and Market - FEVE

(11.00 - 12.30)

- ❖ New recycling targets for glass
- ❖ New targets on PET bottles
- ❖ Pressure on packaging collection and recycling
- ❖ A market imperative: increasing glass collection and recycling

Increasing glass collection & recycling FERVER (12.00 - 12.30)

Increasing glass collection & recycling

Material flows from collection to recycling

- ❖ Wide variety of collection systems
 - ✓ Bottle banks
 - ✓ Curbside collection
 - ✓ Container park / Waste Islands
- ❖ Selective collection: a concept with “variable geometry” (1) on the material level
 - ✓ Only glass
 - ✓ Glass + cans
 - ✓ Dry fractions (glass, paper, metal, plastic, wood, ...)

Increasing glass collection & recycling

- ❖ Selective collection: a concept with “variable geometry”(2) on the collection vehicle :
 - ✓ Van
 - ✓ Minitruck
 - ✓ Container
 - ✓ Trailer
 - ✓ Press truck (as for residual HHW)

Increasing glass collection & recycling

- ❖ Selective collection: a concept with “variable geometry”(3) on the ownership of the collected glass:
 - ✓ Collector
 - ✓ Municipality
 - ✓ EPR-scheme (Extended Producer’s Responsibility)
 - ✓ Recycler
 - ✓ Glass factory
 - ✓ ...

Increasing glass collection & recycling

- ❖ Result: wide variety of incoming material in the sorting/recycling site
 - ✓ Quantity *versus* Quality
 - ✓ Garbage fraction
 - ✓ Non-targeted (recyclable) fractions
 - ✓ Inherent losses
- ❖ Same strict requirements at the end: the glass factory ⇒
 - Variable gaps to “bridge”
 - Variable losses

Separation of pollutions and colour sorting

Input



Treatment



Product



Waste

plastic bags
plastic bottles
other waste



CSP

ceramics
porcelain
stones



Labels

cork



Ferro

(closures,
nails,
paper-clips...)

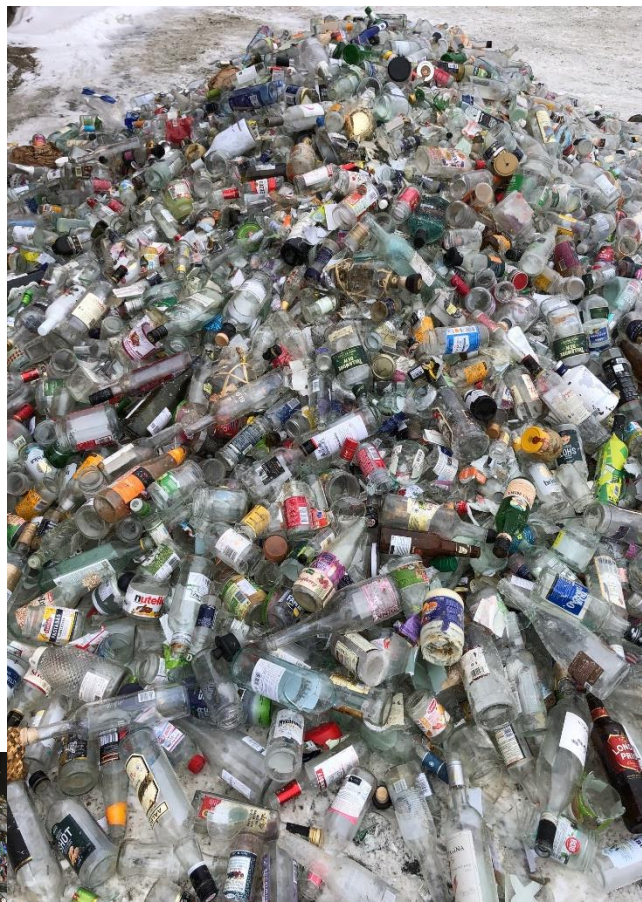


Non-ferro

(closures,,
labels...)







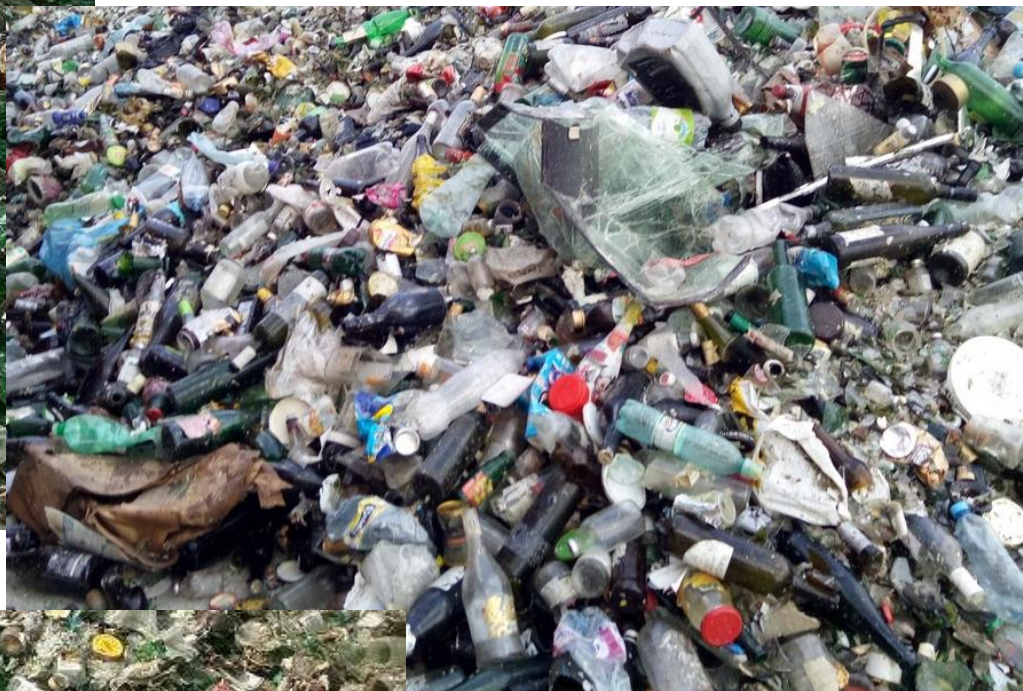
Sweden:
curbside (L)
versus
Bottle bank (R)



Glass + Metals
Italy

Spain: input
and typical
problem of
flooded
underground
bottle bank



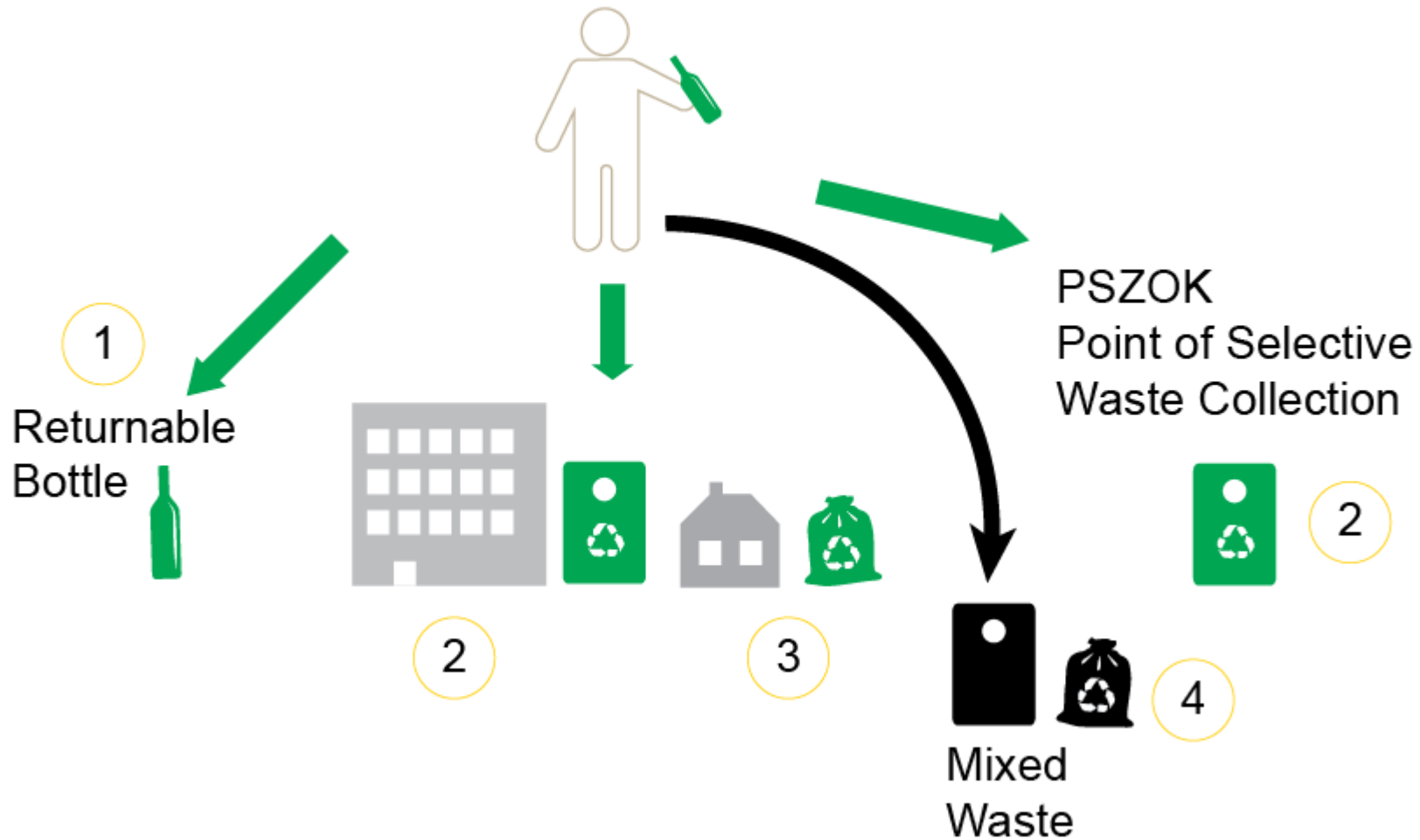


Selective collection in
Poland: good/bad quality
and in plastic bags



Selective collections in bags:
Poland

Waste (glass) collection system Poland



Poland – collection system

1. Returnable bottles

Very small letters info that the bottle can be returned



Key facts:

- In the system:
Beer, cheap „wine”, some mineral waters, juices etc.
- 400 000 000 bottles in the circle
(400 000 000 * 0,33 kg
= 132 000 Mg)
- At least 7% bottles don't return
- In 2017 biggest breweries rised return fee from 0,08 EUR (0,35 PLN) to 0,12 EUR (0,5 PLN), what helped a little

It doesn't fully work:

- To be able to return bottle to the shop, typically consumer has to show purchase receipt from that shop
- Consumers say that they don't have space for keeping returnable bottles
- Returning bottles for the fee is considered as activity of poor people
- Still many consumers don't know that they can (and where) return bottles

Bottle Bank-D



Glass + Metals-D



Bucket Collection-D



“Round & Flat”-D

Alternating each 2 weeks Input “Round”



Plastic bag collection-D



Plastic Bag Collection-D

Input





↑ CABARE-Tr

HOTEL-Tr

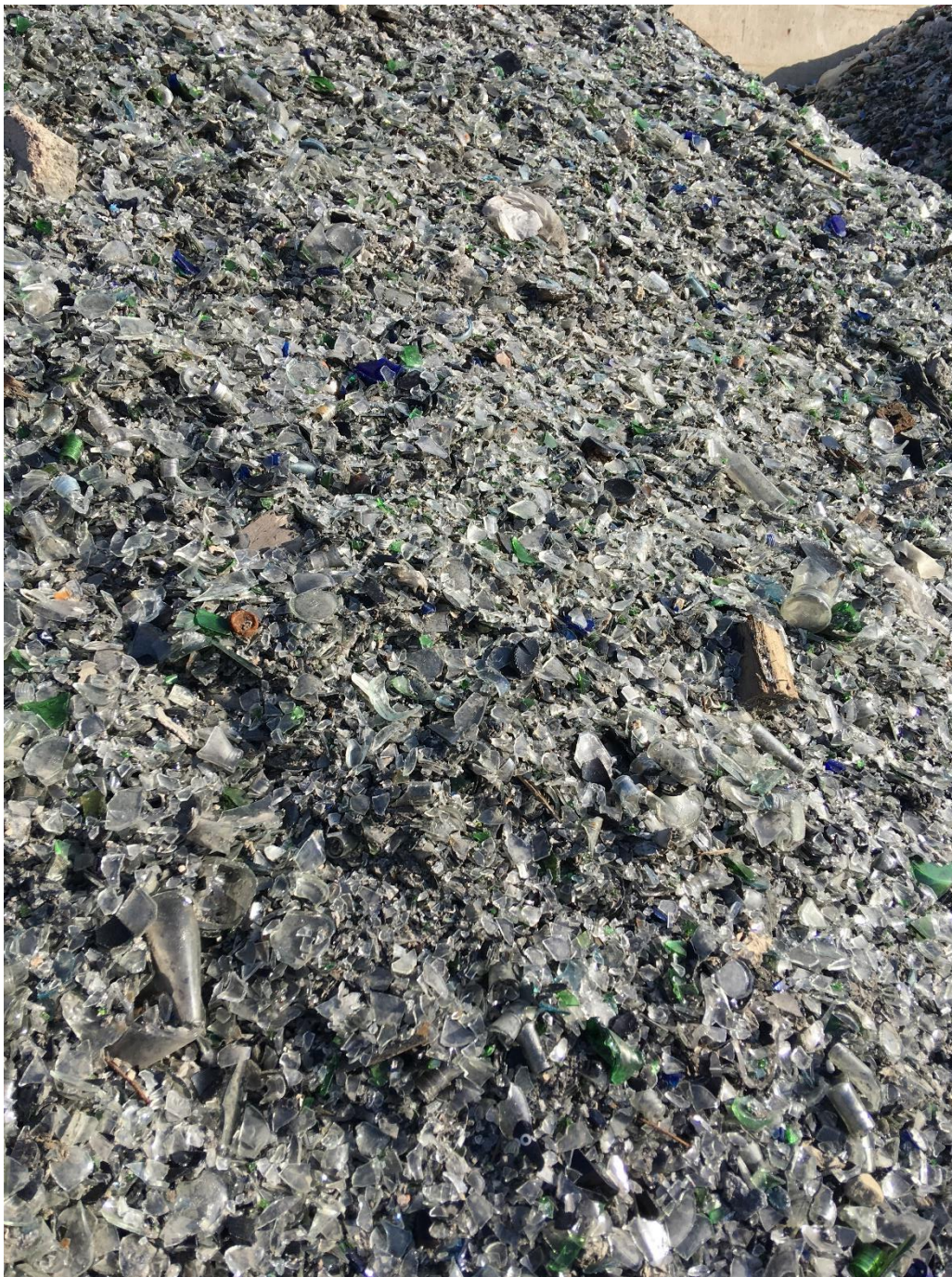




Bottle bank Mixed
colours UK



Output Inefficient MRF UK



Output efficient MRF UK

Increasing glass collection & recycling Solutions

- ❖ Advocating for an actual selective collection
- ❖ Developing high performance sorting machines to reduce the glass losses
- ❖ Maximizing the recycling/recovery of the non FRC-fractions

End of Waste

1. The one and only EOW regulation adopted without any difficulties and within the foreseen timing
2. Widely applied through Europe by the sector
3. Only known by the sector
4. Need promotion at political level
5. Automatic consideration in recycling targets is a **MUST**

Sandwich lunch (12h30 - 13h00)



Order of Business (2)

5. Aiming for furnace-ready quality (13.00 - 13.45)

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FERVER lead content analysis 2014 vs 2018

2014 lead (ppm)		2018 lead (ppm)
1322		172
796		141
605		133
579		128
453		128
304		119
156		115
146	USA	99
121		97
115		97
107	USA	52
82		42
70		36
47		32
43		30
41		28
36		28
35		27
32		27
32		24
28		17
21		17
19		12
9		9
8		7
7		6
		5
		5

FERVER lead content analysis 2014

no.	name of the article	type of product	volume (l)	colour	origin	glass producer	chromium	2014	
								lead (ppm)	
1	Toneles	red wine	0,75	green	Argentina	Cristalerias Cattorine Hmos SA	548	1322	
2	Tsingtao	beer	0,33	green	China	Hindustan Nat. Glass & Industries Lt. (India)	688	796	
3	Trapiche	red wine	0,75	green	Argentina	St. Gobain Rayen Cura	700	605	
4	Altos Las Hormigas 2011	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	636	579	
5	Colonia Las Liebres	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	634	453	
6	Mendel Unus	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	758	304	
7	Cremaschi Furlotti	red wine	0,75	green	Chile	Cristalerias Toro SA	449	156	
8	Los Pagos Chile	red wine	0,75	amber	USA	O-I Ohio	1014	146	USA
9	Pearl River Bridge	soja-sauce	0,5	flint	China	?	16	121	
10	Casa Crabar	red wine	0,75	green	Chile	Cristalerias Toro SA	811	115	
11	Gallo Family	white wine	0,75	flint	California	Gallo Glas Company Midesto		107	USA
12	Sweet and sour Plum Sauce	sauce	0,5	flint	Thailand	Thai Glass Industies Bangkok	<12	82	
13	La Perla Andina	red wine	0,75	green	Chile	Cristalerias des Chile	840	70	
14	ancient earth	red wine	0,75	amber	South Africa	Consol Glass	1004	47	
15	Aromo 2008	red wine	0,75	green	Chile	Cristalerias Toro SA	167	43	
16	Cape Bridge 2011	red wine	0,75	green	South Africa	Consol Glass	911	41	
17	Lien Ying Mu Err-Pilze	food	0,2	flint	China?	KYC IIC. Tamda Plant (Japan	<11	36	
18	Roodeberg	red wine	0,75	green	South Africa	Consol Glass	970	35	
19	Stark-Condé	red wine	0,75	green	South Africa	Consol Glass	928	32	
20	Terra Noble 2011	red wine	0,75	green	Chile	Cristalerias de Chile, Ecoglass	877	32	
21	yellow trail	red wine	0,75	green	Australia	ACI Glass Packaging Pert ?	437	28	
22	Villiera	white wine	0,75	flint	South Africa	Consol Glass	177	21	
23	Altos Las Hormigas 2010	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	879	19	
24	Marques de Riscal	white wine	0,75	flint	Spain	Saint Gobain Vicasa Sevilla	<10	9	
25	Moskovskaya	vodka	0,5	flint	Turkey	Topkapi Sise San A.S. Istanbul, Topkapi Plant ?	<10	8	
26	Imiglycos	white wine	0,75	flint	Greece	Valavais Bros. S.A.	<10	7	

FERVER lead content analysis 2018

no.	name of the article	type of product	volume (l)	colour	origin	glass producer	chromium	2018 lead (ppm)
1	Puglia	red wine	0,75	green	Italy	Saint Gobain Vetri S.p.A.	361	172
2	Tradition	red wine	0,75	green	France	?	284	141
3	Touraine	white wine	0,75	flint	France	Saint Gobain Emballage	237	133
4	Reserve	red wine	0,75	green	Greece	Yioula Glass Works S.A. Egaleo	305	128
5	Languedoc	red wine	0,75	green	France	Saint Gobain Emballage	795	128
6	Quinta do Penedo	red wine	0,75	green	Portugal	Saint Gobain Mondego	319	119
7	Black&White	whiskey	0,7	green	UK	Ardagh Glass Wheatley	861	115
8	Clearly Organic	red wine	0,75	amber	Spain	Saint Gobain Vicasa	347	99
9	Bienvenido Munoz	red wine	0,75	green	Spain	Saint Gobain Vicasa	337	97
10	Dao	red wine	0,75	green	Portugal	Saint Gobain Mondego	281	97
11	Ramune	lemonade	0,2	flint	Japan	Nozaki GlassCo., Ltd. Shiga Plant	43	52
12	Lien Yung Süß-Sauer-Soße	sweet-sour-sauce	0,7	flint	Thailand	Thai Glass Industries Ltd	14	42
13	Trapiche	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	543	36
14	Terre Siciliane	white wine	0,75	flint	USA	O-I Ohio	24	32
15	Nederburg	red wine	0,75	green	South Africa	Consol Glass	727	30
16	The Ned	white wine	0,75	amber	New Zealand	?	357	28
17	Finca las Moras	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	555	28
18	Lindeman's Shiraz	red wine	0,75	green	USA	O-I Ohio	345	27
19	Sol de Chile	red wine	0,75	green	Chile	Cristalerias Toro SA Santiago	602	27
20	Brezza	white wine	0,75	flint	Italy	Vetriere Meridionali SpA Via per	25	24
21	Antonio Lopes	rose	0,75	light blue	Portugal	Saint Gobain Mondego	5	17
22	Finca de la Vega	white wine	0,75	flint	Spain	Saint Gobain Vicasa	0	17
23	OudeKaap	rose	0,75	flint	Südafrika	Consol Glass	10	12
24	Sol de Chile	white wine	0,75	green	Chile	Cristalerias Toro SA Santiago	143	9
25	Clos de los Siete	red wine	0,75	green	Argentina	Saint Gobain Rayen Cura	592	7
26	Ouzo	ouzo	0,7	flint	Greece	Yioula Glass Works S.A. Egaleo	8	6
27	Carmenere	red wine	0,75	green	Mexico	?	600	5
29	Trapiche chardonnay	white wine	0,75	green	Argentina	Saint Gobain Rayen Cura	171	5

Joint actions and next steps (14.00 - 15.00)

- ❖ Harmonized calculation methodology
- ❖ improve glass collection & recycling



Thanks for your participation !

FERVER

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