Glass Alliance Europe

STATISTICAL REPORT 2014-2015

May 2015

EUROPEAN GLASS INDUSTRIES

In order to provide a comprehensive and analytical overview of the situation in the glass industry, this report provides statistics for the whole glass industry together and statistics for each of the glass sectors. The situation varies a lot between the different sectors.

89, Avenue Louise - B - 1050 Brussels - Belgium
T + 32 (0)2/ 538 44 46 - F + 32 (0)2/ 537 84 69
info@glassallianceeurope.eu - www.glassallianceeurope.eu
VAT N° BE 0418 388 615

Contents

I. **Introduction and Commentaries** 3

II. **Review of Statistical Data :**

- Production 2014..... 5
- Employment 2014..... 7
- External Trade : General Situation 2014..... 8
- External Trade : IMPORTS Extra EU 2014..... 10
- External Trade : EXPORTS Extra EU 2014..... 12

III. **Analysis of the Economic Situation in 2014/2015 in Glass Sectors** 14

- Container Glass..... 15
- Flat Glass..... 20
- Domestic Glass..... 24
- Special Glass..... 27
- Reinforcement Glass Fibres..... 32

Glass Alliance Europe
F.E.V.E. : Fédération Européenne du Verre d'Emballage (European Container Glass Federation)
Glass for Europe : Europe's Manufacturers of Building, Automotive and Solar-Energy Glass

I. Introduction – Commentaries

State of the Industry

In 2014, the EU-28 glass **production** reached a volume of more than 33 million tonnes, a slight increase of 2% compared with 2013 and a global production similar to 2009 level, showing the persistence of a difficult economic climate that hits the EU glass industry.
This production level keeps however the EU as the largest glass producer in the world with a market share of around one-third of the total world market. Germany remains the EU's biggest producer with about one fifth of the volume, closely followed by France, Spain, Italy and the UK.
Some glass sectors succeeded to stabilise or even slightly increase its production. This is the case for the domestic glassware and the continuous glass fibres.
Orders from customers in the car industry and the construction sector should however improve as well in 2014.

Regarding **foreign trade from third countries**, imports from Asian countries, and in particular China, remain big competitors.
In 2014, extra EU-28 **exports** decreased by **6.3% in volume** but stabilised at **+ 1.7% in value** compared with 2013. Exports vary from subsector to subsector and are of greatest importance to the special glass and tableware sectors. The EU-28's four major clients in volume are the rest of Europe (50%) including Switzerland (14%), Turkey (9%) and Russia (6.5%), followed by the USA (11.5%) and Far East Asia (7.7%) including China (3%).

As for extra-EU **imports** in EU-28, in 2014 they remained stable **in volume** but increased **9.6% in value** compared with 2013. Far-East Asia accounted for 52% - including 43% from China alone, the rest of Europe (32%) - including Turkey (9%) and Switzerland (10%) - and the USA (4.8%).

Employment 2014
The number of employees continues a downward trend since 2005. Currently, the EU-28 glass industry employs about 180,000 people (incl. processors), which means an on-going decrease since 2005 by 25.3%, and by 0.6% compared with 2013.
This is mainly due to the flat glass sector, which closed several plants in 2013 and 2014, but also in other sectors like domestic glassware and the fibres.

Outlook
Behind these 2014 numbers aggregated at the level of the whole glass industry, it is important to realize that the **situations are contrasted in the different sectors**. Evolutions in production and employment, as well as in the origin of imports into the EU, are very different between glass sectors.

Generally speaking however, it can be said that after the strong recession in 2012, glass sectors are stabilising since 2013 thanks to slightly better market conditions and consumer confidence, particularly noticeable during the second semester 2014.

It is hard to make projections for 2015 but one can pre-empt a possible improvement of market conditions with, in parallel, an ever challenging manufacturing climate.
Investment outside the European borders has materialised and will probably lead to higher imports as demand takes up.
At the same time, the questioning about long-term future in the revised ETS legislation (ETS sector – 43% by 2030) and structural change might entail extra costs.

*

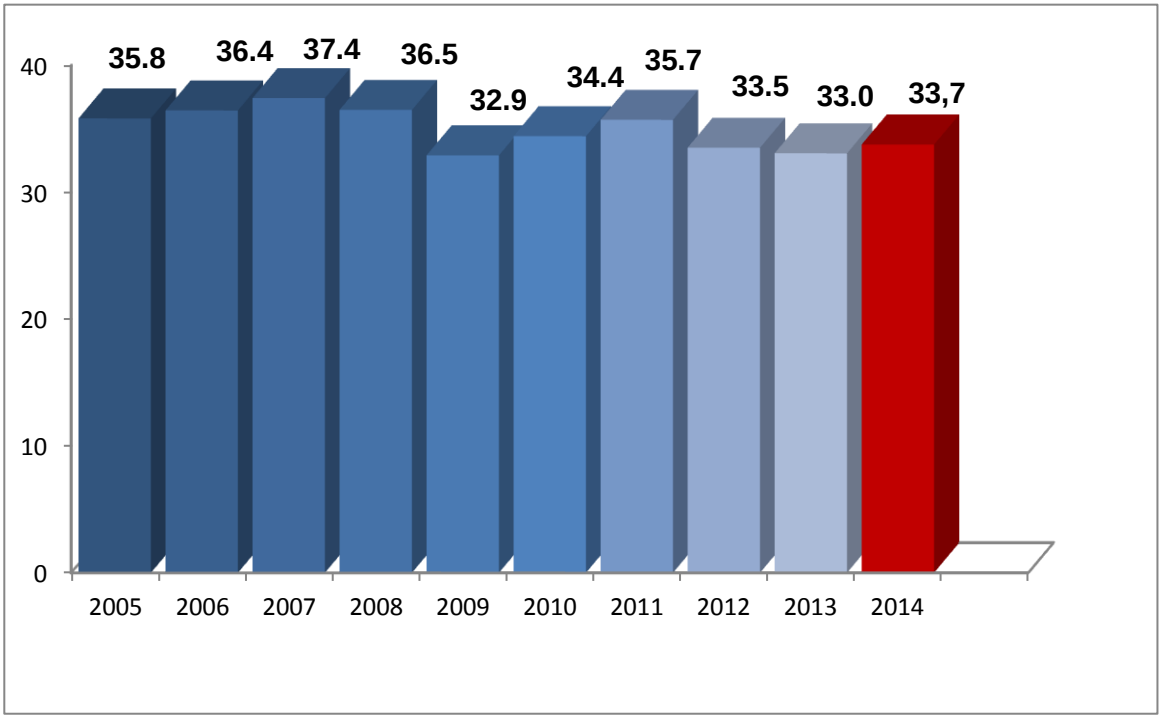
* *

II. Review of Statistical Data

1. PRODUCTION

1.1. Evolution of Total Glass Production in EUR 28

YEAR	'000 TONNES	INDEX
2005	35,76	100.0
2006	36,43	101.8
2007	37,42	104.6
2008	36.47	102.0
2009	32.89	92.0
2010	34.40	96.2
2011	35.69	99.8
2012	33.49	93.6
2013	33.05	92.4
2014	**33.74**	**94.4**

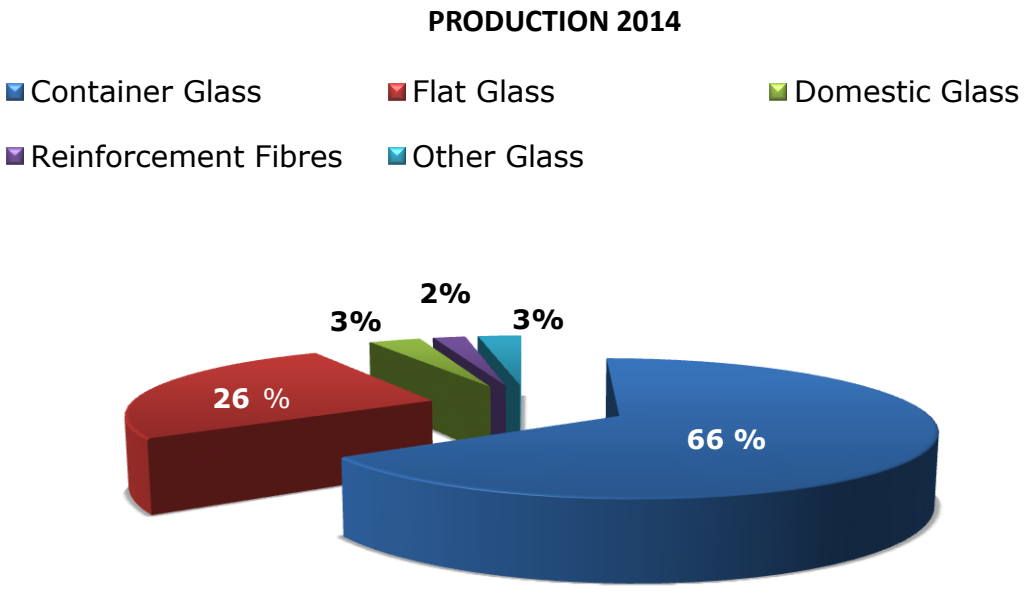


1.2. Breakdown According to Main Product Categories (EUR 28)

Year	Cast, Sheet & Float Glass (Basic Flat Glass)	Container	Tableware & Crystal	Continuous Filament Glass Fibres	Other Glasses (incl. Special Glass)
2005	9,692	20,724	1,498	727	1,121
2006	9,981	20,967	1,526	727	1,162
2007	10,119	21,621	1,547	821	1,214
2008	9,865	21,270	1,440	823	967
2009	8,965	19,366	1,041	476	946
2010	9,405	20,057	1,016	713	1,004
2011	9,514	20,920	1,090	831	1,031
2012	8,633	20,334	1,006	634	887
2013	8,095	20,278	1,108	664	902
2014	**8,290**	**20,859**	**1,047**	**658**	**885**
Evolution on previous year	**+ 2.4%**	**+ 2.9%**	**-5.5%**	**-1.0%**	**- 1.9%**

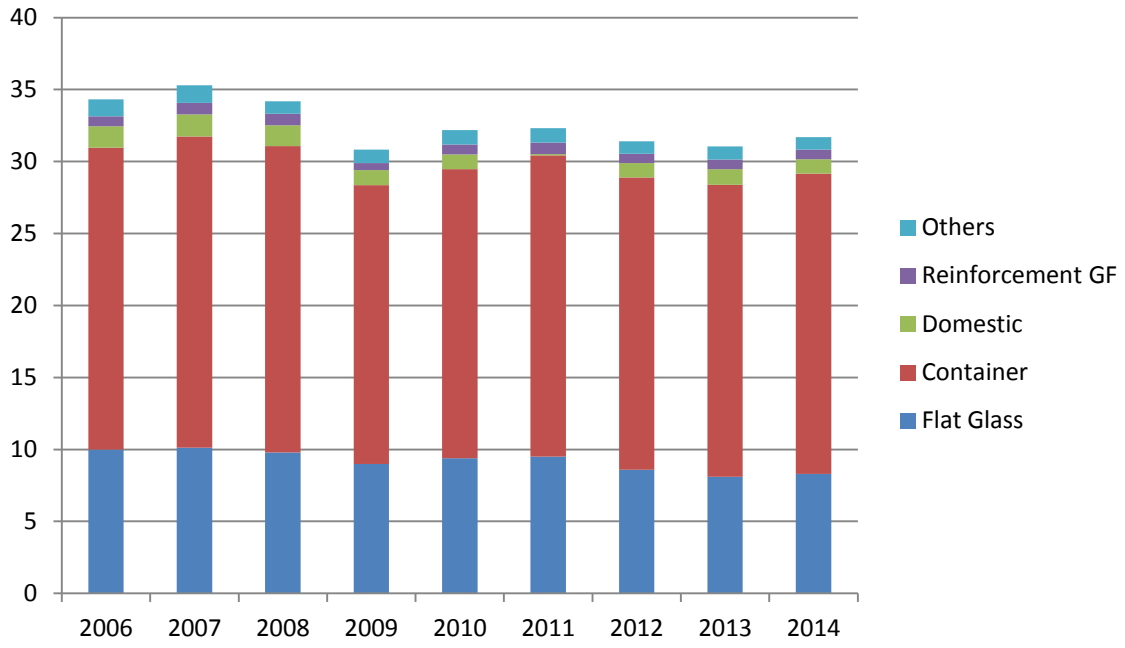
in 1,000 tonnes

The production rate of EUR 28 slightly increased in 2014 compared with 2013 by 2.2%. Compared to 2005 index (100), sectoral production reached index 85.5 for flat glass, 102.9 for container glass, 69.9 for tableware and crystal, 90.5 for continuous filament glass fibres and 79 for other glasses.

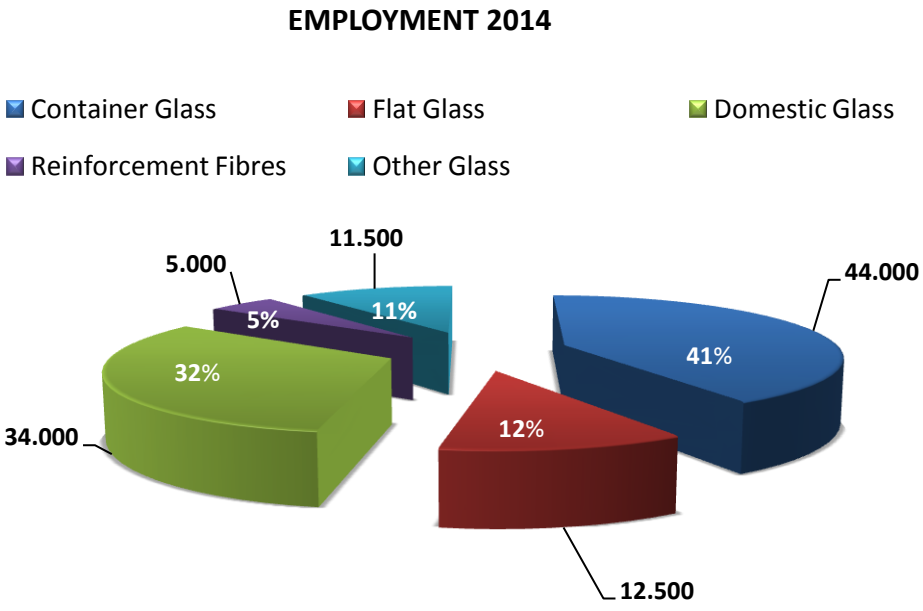


in million tonnes

1.3. Production Evolution within Sectors (in thousand tonnes)

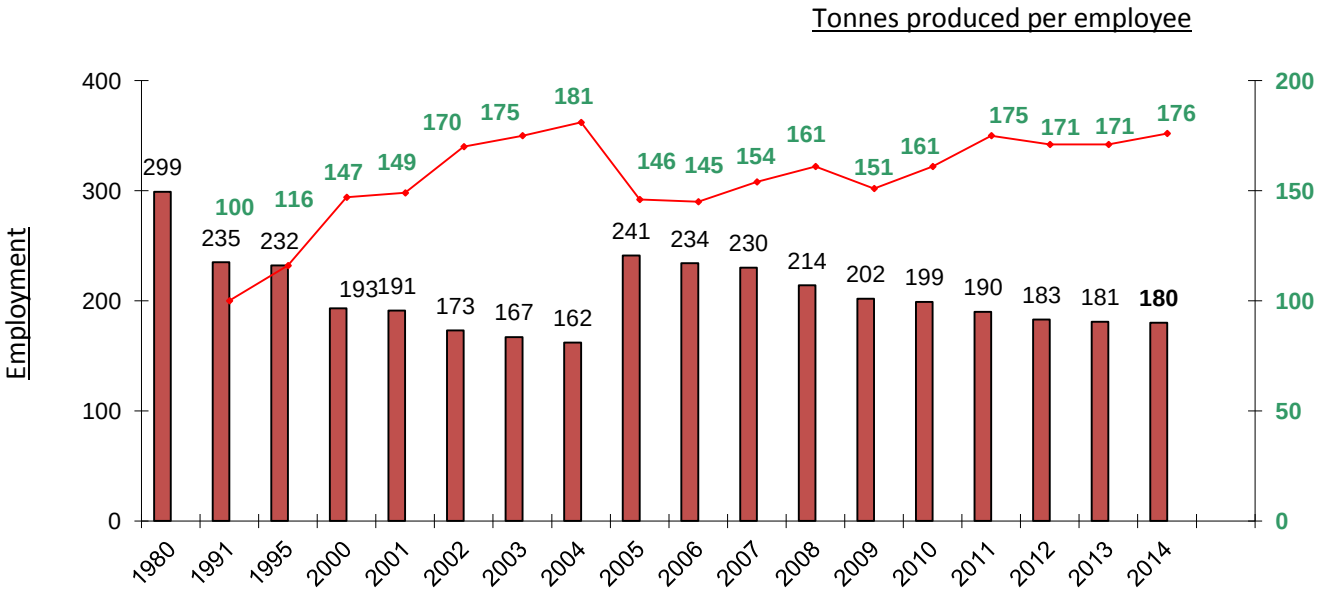


2. EMPLOYMENT



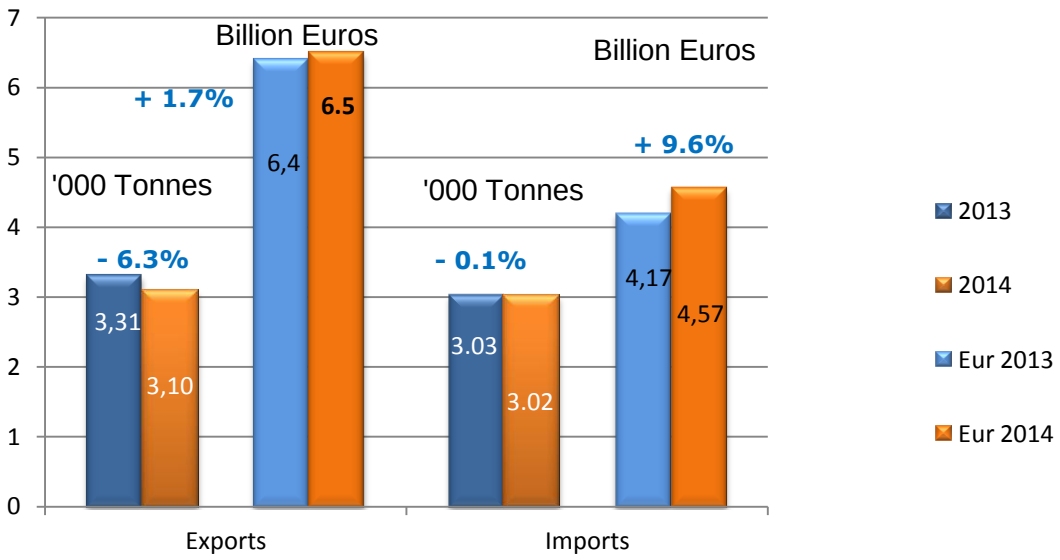
Number of persons

PRODUCTIVITY



3. EXTERNAL TRADE IN 2014

3.1. General Imports / Exports



3.2 Imports / Exports by Glass Alliance Glass Sectors (in tonnes)

Products	Exports			Imports		
	2013	Evolution (%)	2014	2013	Evolution (%)	2014
Flat glass basic	1,068,708	- 19.0	864,293	290,384	+12.7	327,244
Flat glass processed	416,260	+0.3	417,640	655,632	+ 7.9	707,384
Container Glass	908,475	+2.3	929,602	402,123	+ 17.5	472,335
Domestic Glassware	319,255	-3.2	309,605	363,734	+ 6.8	388,580
Reinforcement glass fibres (CFGF)	74,550	+79.0	133,912	362,123	+32.5	479,640
Special Glass	19,042	+17.4	22,359	15,806	- 8.8	14,410
Others	379,586	-13.0	329,954	749,256	-28.3	537,614
TOTAL Chapter 70	**3.309.646**	**- 6.3**	**3,099,755**	**3.026.344**	**- 0.1**	**3,023,403**

Source : Eurostat – COMEXT Chapter 70
Extra-EUR 28

3.3. Detailed Imports and Exports 2014 (Extra-EUR28) per Glass Sector

Total Far East: Includes India, Pakistan, Bengladesh, Myanmar, Thailand, Vietnam, Indonesia, Malaysia, Brunei, Singapore, Philippines, Mongolia, China, Koreas, Japan, Taiwan and Hong-Kong.

North Africa: Includes Marocco, Algeria, Tunisia, Lybia and Egypt.

Glass Alliance Europe

YEAR	2014						IMPORTS (tonnes) (Eurostat)										Combined Nomenclature Chap. 70	
COUNTRIES	**Flat Basic**	**%**	**Flat Processed**	**%**	**Container**	**%**	**Domestic**	**%**	**Fibres**	**%**	**CFGF**	**%**	**Special**	**%**	**Others**	**%**	**TOTAL CN Chap. 70**	**%**
China (+ HK)	60.266	18,416	505.761	71,497	72.122	15,27	227.018	58,42	248.190	43,1	207.366	43,23	6.865	47,6	179.200	33,33	1.299.422	42,98
Taiwan	2.102	0,6423	10.409	1,4715	9.358	1,981	3.088	0,795	35.075	6,091	33.697	7,025	711	4,93	193	0,036	60.936	2,015
Korea	66	0,0202	8.883	1,2558	1639	0,347	963	0,248	6.958	1,208	5.099	1,063	7	0,05	116	0,022	18.632	0,616
Japan	16.663	5,0919	12.774	1,8058	559	0,118	219	0,056	7.517	1,305	7.406	1,544	125	0,87	3.842	0,715	41.699	1,379
India	464	0,1418	9.079	1,2835	26.705	5,654	6.219	1,6	8.696	1,51	6.106	1,273	400	2,78	7.147	1,329	58.710	1,942
Thailand	12.751	3,8965	920	0,1301	7.078	1,499	1.835	0,472	1.145	0,199	792	0,165	672	4,66	2.280	0,424	26.681	0,882
Indonesia	531	0,1623	2.115	0,299	125	0,026	5.837	1,502	33	0,006	1	2E-04	116	0,8	3.587	0,667	12.344	0,408
TOTAL Far East	92.875	28,381	554.163	78,34	117.128	24,8	245.739	63,24	366.170	63,59	311.301	64,9	9.030	62,7	200.711	37,33	1.585.816	52,45
Turkey	49.784	15,213	66.298	9,3723	21.570	4,567	107.161	27,58	25.838	4,487	22.063	4,6	299	2,07	3.010	0,56	273.960	9,061
Serbia	11	0,0034	226	0,0319	2.574	0,545	525	0,135	343	0,06	189	0,039	1	0,01	15.913	2,96	19.593	0,648
Russia	29.304	8,9548	3.844	0,5434	13.725	2,906	6.711	1,727	17.429	3,027	11.784	2,457	19	0,13	16.219	3,017	87.251	2,886
Belarus	35.198	10,756	549	0,0776	16.679	3,531	16	0,004	7.673	1,332	7.134	1,487	-	0	1.832	0,341	61.947	2,049
Ukraine	1.125	0,3438	602	0,0851	93.977	19,9	581	0,15	842	0,146	826	0,172	815	5,66	97	0,018	98.039	3,243
Switzerland	5.562	1,6996	13.074	1,8482	43.938	9,302	1.441	0,371	9.665	1,678	1.015	0,212	139	0,96	236.207	43,94	310.026	10,25
TOTAL Other EUROPE	121.560	37,147	87.036	12,304	243.784	51,61	116.719	30,04	104.160	18,09	83.495	17,41	1.286	8,92	300.499	55,89	975.044	32,25
USA	19.118	5,8421	30.066	4,2503	4.221	0,894	4.856	1,25	60.332	10,48	36.462	7,602	3.836	26,6	24.146	4,491	146.575	4,848
Mexico	8.058	2,4624	1.292	0,1826	1.561	0,33	1.874	0,482	13.699	2,379	13.003	2,711	60	0,42	84	0,016	26.628	0,881
Brazil	-	0	1.494	0,2112	248	0,053	862	0,222	646	0,112	628	0,131	-	0	127	0,024	3.377	0,112
Israël	32.093	9,8071	7.293	1,031	25	0,005	29	0,007	76	0,013	-	0	2	0,01	2.724	0,507	42.242	1,397
North Africa	32.866	10,043	20.376	2,8805	15.505	3,283	11.145	2,868	17.482	3,036	17.172	3,58	137	0,95	4.315	0,803	101.826	3,368
Unit. Arab. Emir.	415	0,1268	231	0,0327	79.811	16,9	2.199	0,566	541	0,094	492	0,103	16	0,11	41	0,008	83.254	2,754
Saudi Arabia	179	0,0547	71	0,01	1.622	0,343	887	0,228	25	0,004	22	0,005	-	0	1543	0,287	4.327	0,143
Others	20.080	6,1361	5.362	0,758	8.430	1,785	4.270	1,099	12.705	2,206	17.065	3,558	43	0,3	3.424	0,637	54.314	1,796
TOTAL	**327.244**	**12,7**	**707.384**	**7,9**	**472.335**	**17,5**	**388.580**	**6,8**	**575.836**	**6,5**	**479.640**	**32,5**	**14.410**	**-8,8**	**537.614**	**-28,3**	**3.023.403**	**-0,1**

HISTORICAL IMPORTS Extra-EUR28

2014	FLAT GLASS BASIC	% Previous year	FLAT GLASS PROCESSED	% Previous year	CONTAINER GLASS	% Previous year	DOMESTIC GLASSWARE	% Previous year	FIBRES	% Previous year	CFGF Reinforce-ment	% Previous year	SPECIAL GLASS	% Previous year	OTHER GLASS	% Previous year	TOTAL CHAPTER 70	% Previous year
TONNES																		
2006	586.322	+ 7.5	427.074	+ 25.2	292.742	+ 11.7	437.907	+ 5.4	398.666	+ 12			72.135	- 20.5	436.433	+ 26.3	2.651.279	+ 12.5
2007	1.113.543	+ 90	627.685	+ 47	400.463	+ 36.8	474.076	+ 8.3	508.037	+ 27.4			31.559	- 56.2	446.112	+ 2.2	3.601.475	+ 35.8
2008	820.627	- 26.3	673.983	+ 7.4	517.566	+ 29.2	484.324	+ 2.2	561.674	+ 10.6			31.769	+ 0.7	493.564	+ 10.6	3.583.507	- 0.5
2009	543.715	-33.7	541.997	-19.6	361.780	-30.1	407.211	-15.9	404.714	-27.9			18.485	-41.8	466.486	-5.5	2.744.388	- 23.4
2010	507.497	- 6.6	638.481	+ 17.8	435.325	+ 17.6	437.422	+ 7.4	548.385	+ 35.5			18.032	- 2.5	511.956	+ 9.7	3.087.098	+ 12.5
2011	517.157	+ 1.9	663.617	+ 3.9	467.507	+ 9.9	404.923	- 7.4	554.107	+ 1.0	384.735		15.415	- 14.5	509.516	- 0.5	3.132.242	+ 1.5
2012	378.505	- 26.8	625.544	- 5.7	445.061	- 4.8	372.131	- 8.1	542.659	- 2	346.254	- 10.0	15.602	+ 1.2	488.313	- 4.2	2.867.815	- 8.4
2013	290.384	-23.3	655.632	+ 4.8	402.123	- 9.7	363.734	-2.3	540.547	-0.4	362.123	+ 5.0	15.806	+ 1.3	758.198	+55.3	3.026.344	+ 5.5
2014	327.244	+12.7	707.384	+7.9	472.335	+17.5	388.580	+6.8	575.836	+6.5	479.640	+32.5	14.410	-8.8	537.614	-28.3	3.023.403	-0.1
EUROS ('000)																		
2006	254.235	+ 8.3	1.064.395	+ 17.5	206.052	+ 13.9	724.756	+ 4	668.910	+ 9.5			213.808	- 14	401.440	+ 20.7	3,533,596	+ 10.0
2007	450.129	+ 77	1.215.012	+ 14.2	269.255	+ 30.7	765.796	+ 5.7	804.224	+ 20.2			187.454	- 12.3	484.806	+ 20.8	4,176,676	+ 18.2
2008	373.420	- 17	1.263.238	+ 4	346.278	+ 28.6	777.499	+ 1.5	870.251	+ 8.2			174.655	- 6.8	486.728	+ 0.4	4.292.069	+ 2.8
2009	256.012	-31.4	1.074.583	-14.9	266.360	-23.1	643.199	-17.3	610.273	-29.9			136.732	-21.7	454.053	-6.7	3.441.212	-19.8
2010	275.094	+ 7.5	1.349.898	+ 25.6	307.217	+ 15.3	757.736	+ 17.8	846.264	+ 38.7			187.278	+ 37.0	556.595	+ 22.6	4.280.082	+ 24.4
2011	262.194	- 4.7	1.418.520	+ 5.1	321.429	+ 4.6	694.086	- 8.4	916.770	+ 8.3	606.215		193.536	+3.3	562.831	+ 1.1	4.369.366	+ 2.1
2012	205.968	-21.4	1.414.908	-0.3	330.798	+ 2.9	681.938	-1.8	906.951	-1.1	396.770	- 34.6	181.607	-11.3	555.114	- 1.4	4.277.284	- 2.1
2013	152.327	- 26.0	1.435.128	+ 1.4	320.288	-3.2	642.634	-5.8	883.038	-2.6	407.156	+ 2.6	175.983	-3.1	563.142	+1.4	4.172.540	- 2.5
2014	169.120	+11.0	1.560.334	+ 8.7	362.120	+13.1	697.888	+8.6	967.977	+9.6	703.393	+72.8	175.240	- 0.4	642.221	+14.0	4.574.900	+9.6

Glass Alliance Europe

YEAR	2014						EXPORTS (tonnes) (Eurostat)										Combined Nomenclature Chap. 70	
COUNTRIES	**Flat Basic**	**%**	**Flat Processed**	**%**	**Container**	**%**	**Domestic**	**%**	**Fibres**	**%**	**CFGF**	**%**	**Special**	**%**	**Others**	**%**	**TOTAL**	**%**
China (+ HK)	15.450	1,7876	12.905	3,09	6.567	0,706	18.186	5,874	11.584	5,119	9.349	6,981	2.603	11,6	25.060	7,595	92.355	2,979
Taiwan	1.823	0,2109	832	0,1992	887	0,095	2.113	0,682	792	0,35	490	0,366	257	1,15	2.244	0,68	8.948	0,289
Korea	9.661	1,1178	1.312	0,3141	2785	0,3	5.239	1,692	4.037	1,784	3.752	2,802	558	2,5	12.836	3,89	36.428	1,175
Japan	5.731	0,6631	2.435	0,583	2391	0,257	9.344	3,018	3.926	1,735	2.609	1,948	578	2,59	3.622	1,098	28.027	0,904
India	3.881	0,449	1.243	0,2976	5.458	0,587	3.542	1,144	4.194	1,853	3.397	2,537	1.289	5,77	12.648	3,833	32.255	1,041
Thailand	4.943	0,5719	1.996	0,4779	1.675	0,18	332	0,107	862	0,381	670	0,5	404	1,81	2.510	0,761	12.722	0,41
Indonesia	92	0,0106	449	0,1075	1226	0,132	950	0,307	96	0,042	73	0,055	144	0,64	1.924	0,583	4.881	0,157
TOTAL Far East	44.977	5,2039	25.094	6,0085	25.312	2,723	43.610	14,09	27.450	12,13	21.931	16,38	6.118	27,4	67.320	20,4	239.881	7,739
Turkey	181.746	21,028	19.998	4,7883	34.545	3,716	9.982	3,224	23.279	10,29	13.600	10,16	338	1,51	16.119	4,885	286.007	9,227
Serbia	32.602	3,7721	12.288	2,9422	67.765	7,29	3.751	1,212	5.487	2,425	2.057	1,536	70	0,31	538	0,163	122.501	3,952
Russia	48.104	5,5657	34.995	8,3792	40.784	4,387	32.026	10,34	18.938	8,368	9.393	7,014	742	3,32	28.854	8,745	204.443	6,595
Belarus	4.755	0,5502	5.758	1,3787	2.063	0,222	1.942	0,627	615	0,272	382	0,285	2.407	10,8	9.027	2,736	26.567	0,857
Ukraine	39.337	4,5514	6.441	1,5422	7.462	0,803	6.684	2,159	5.269	2,328	1.866	1,393	182	0,81	4.284	1,298	69.659	2,247
Switzerland	151.588	17,539	85.549	20,484	145.162	15,62	15.423	4,982	26.507	11,71	20.651	15,42	643	2,88	31.919	9,674	456.791	14,74
TOTAL Other EUROPE	559.022	64,68	233.999	56,029	432.883	46,57	89.630	28,95	97.621	43,14	55.362	41,34	4.612	20,6	137.782	41,76	1.555.549	50,18
USA	46.597	5,3913	39.290	9,4076	127.320	13,7	58.681	18,95	47.840	21,14	34.015	25,4	2.656	11,9	31.448	9,531	353.832	11,41
Mexico	12.047	1,3939	3.400	0,8141	6.682	0,719	7.066	2,282	1.493	0,66	1.110	0,829	818	3,66	9.309	2,821	40.815	1,317
Brazil	18.563	2,1478	8.552	2,0477	9.099	0,979	9.830	3,175	5.775	2,552	5.258	3,926	1.990	8,9	3.424	1,038	57.233	1,846
Israël	16.510	1,9102	8.718	2,0874	38.034	4,091	3.758	1,214	1.518	0,671	958	0,715	174	0,78	7.989	2,421	76.701	2,474
North Africa	63.886	7,3917	33.070	7,9183	70.385	7,572	26.882	8,683	6.764	2,989	4.456	3,328	3.846	17,2	19.963	6,05	224.796	7,252
Unit. Arab. Emir.	26.882	3,1103	8118	1,9438	5.056	0,544	15.929	5,145	2514	1,111	2.233	1,668	86	0,38	3871	1,173	62.456	2,015
Saudi Arabia	1.586	0,1835	5577	1,3354	5.893	0,634	4641	1,499	2125	0,939	916	0,684	108	0,48	2333	0,707	22.263	0,718
Others	74.223	8,5877	51.822	12,408	208.938	22,48	49.578	16,01	33.202	14,67	7.673	5,73	1.951	8,73	46.515	14,1	466.229	15,04
TOTAL	**864.293**	**-19**	**417.640**	**0,3**	**929.602**	**2,3**	**309.605**	**-3,2**	**226.302**	**14,1**	**133.912**	**79**	**22.359**	**17,4**	**329.954**	**-13,8**	**3.099.755**	**-6,3**

HISTORICAL EXPORTS Extra-EUR27

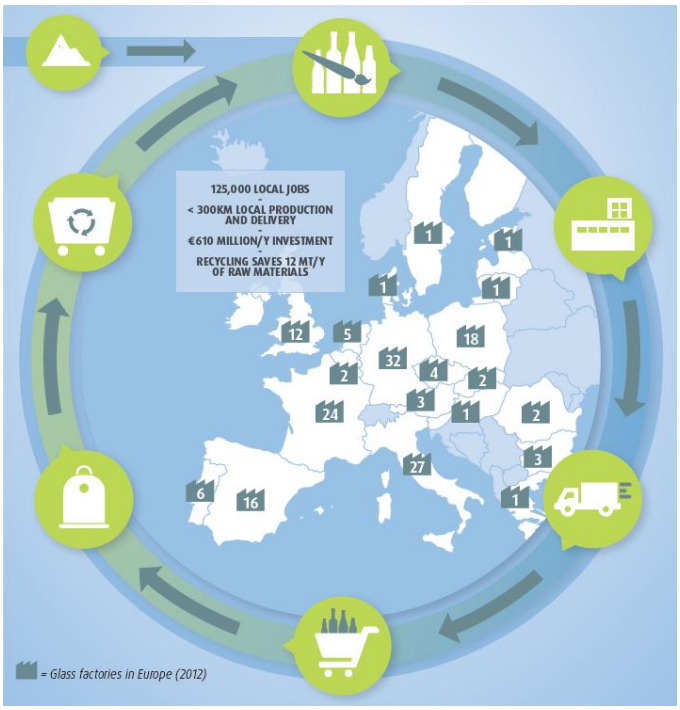
2014	FLAT GLASS BASIC	% Previous year	FLAT GLASS PROCESSED	% Previous year	CONTAINER GLASS	% Previous year	DOMESTIC GLASSWARE	% Previous year	FIBRES	% Previous year	CFGF (Reinforc.)	% Previous year	SPECIAL GLASS	% Previous year	OTHER GLASS	% Previous year	TOTAL CHAPTER 70	% Previous year
TONNES																		
2006	1.007.268	- 1.7	341.192	+ 11.0	936.390	+ 0.5	377.011	- 1.5	267.333	+ 20.1			60.663	- 25.8	329.304	+ 41.2	3.319.161	+ 4.2
2007	1.074.240	+ 6.7	309.338	- 9.3	997.210	+ 6.5	389.635	+ 3.4	253.471	- 5.2			57.743	- 4.8	414.110	+ 25.8	3.495.747	+ 5.3
2008	1.114.959	+ 3.8	352.695	+ 14.0	863.272	- 13.4	346.602	- 11.0	219.292	- 13.5			44.104	- 23.6	393.582	- 5.0	3.334.506	- 4.6
2009	828.108	- 25.7	287.567	- 18.5	706.974	- 18.1	289.421	- 16.5	191.128	- 12.8			25.823	- 41.5	342.167	- 13.1	2.671.188	- 19.9
2010	1.180.910	+ 42.6	358.159	+ 24.5	780.247	+ 10.4	334.124	+15.4	227.058	+ 18.8			27.098	+ 4.9	410.792	+ 20	3.318.388	+ 24.2
2011	1.052.134	- 10.9	396.529	+ 10.7	814.062	+ 4.3	346.903	+3.8	192.041	- 15.0	109.896		27.377	+ 1.0	413.688	+ 0.7	3.242.734	- 2.3
2012	1.053.733	+ 0.2	394.609	- 0.5	785.585	- 3.5	317.033	- 8.6	201.012	+ 4.7	76.374	- 30.5	20.185	- 26	400.948	- 3.1	3.173.105	- 2.2
2013	1.068.708	+1.4	416.260	+5.5	908.475	+ 15.6	319.255	+ 0.7	198.320	- 1.3	74.550	- 2.4	19.042	- 5.7	379.586	- 5.3	3.309.646	+ 4.3
2014	864.293	- 19.0	417.640	+ 0.3	929.602	+ 2.3	309.605	- 3.2	226.302	+14.1	133.912	+79.0	22.359	+17.4	329,954	-13.0	3.099.755	-6.3
VALUE ('000 €)																		
2006	580.565	+ 15.2	829.059	+ 12.7	776.260	+ 9.3	1.369.923	+ 3.9	710.042	+ 22.3			292.839	- 5.3	1.500.972	+12.9	6.059.660	+ 10.4
2007	659.540	+13.6	862.220	+ 4.0	822.390	+ 5.9	1.370.337	0	791.234	+ 11.4			275.338	- 6.0	1.440.289	- 4.0	6.221.349	+ 2.7
2008	671.204	+ 1.8	933.628	+ 8.3	801.327	- 2.6	1.315.183	- 4,0	703.450	- 11.1			268.015	- 2.7	986.793	- 31.5	5.679.600	- 8.7
2009	513.978	- 23.4	800.878	- 14.2	691.193	- 13.7	975.027	- 25.9	642.032	- 8.7			228.405	- 14.8	843.237	- 14.5	4.694.750	- 17.3
2010	681.199	+32.5	983.725	+22.8	758.675	+9.8	1.178.819	+20.9	734.563	+14.4			273.514	+19.8	972.904	+15.4	5.583.399	+18.9
2011	659.756	-3.2	1.115.984	+13.4	769.994	+1.5	1.243.831	+5.5	807.195	+9.9	236.432		269.739	-1.4	1.035.880	+6.5	5.902.379	+ 5.7
2012	586.963	-11.0	1.221.424	+9.4	822.590	+6.8	1.228.895	-1.2	781.210	-3.2	130.820	-44.7	252.736	-6.3	1.069.960	+3.3	5.963.778	+ 1.0
2013	621.461	+5.9	1.327.111	+8.7	890.500	+ 8.3	1.221.049	- 0.6	709.645	- 9.2	136.687	+ 4.5	258.754	+ 2.4	1.385.801	+ 29.5	6.414.321	+ 7.5
2014	553.399	-11.0	1.466.734	+10.5	919.362	+ 3.2	1.198.166	-1.9	1.062..809	+49.8	489.915	+358	266.306	+2.9	1.055.954	-23.8	6.522.730	+ 1.7

III. Economic Analysis per Glass Sector

REPORTS 2014

1. Overview of the European Container Glass Sector

FEVE is the association of European manufacturers of glass containers and machine-made glass tableware. The European container glass industry provides a wide range of glass packaging for food and beverages as well as flacons for perfumery, cosmetics and pharmacy for global customers. It is an important contributor to Europe's circular economy. Glass packed products are supplied worldwide, and glass plays a vital role in supporting European trade and commerce.



Study shows value of glass packaging for circular economy

The top-line overview of some of the findings from the first ever Ernst and Young report[1] on the impact of glass packaging of food and drink products only, shows how the sector in Europe brings value to Europe's social, environmental and economic welfare. .

The capital intensive industry yearly invests up to €610 million to innovate and maintain a network for 162 EU plants. This equals 10% of the industry's operational costs every year. The industry contributes €9.5 billion to the EU annual GDP.

It has a positive impact on Europe's trade balance of €21 billion for products primarily packed in glass. Some 125,000 direct and indirect jobs are maintained by the sector supporting a wide range of other industries in local regions as glass plants deliver more than half of their products within 300km and more than 70% of raw materials travel less than 300km.

Jobs and Value creation in supply chain

The container glass industry is the prime example of a well-functioning circular economy. The glass 'bottle-to-bottle' recycling is a real Circular Economy example. It means less waste, less use of virgin raw materials and energy, less environmental impacts and on the other side long-standing economic growth and jobs.

[1] Ernst & Young study ***"Environmental, social and economic contribution of the Container Glass sector in the EU"*** ***http://www.feve.org/SEC-FEVE-2015/SEC-FEVE-2015.html***

This is what allows the sector to collect seven out of every 10 bottles for recycling - one ton of recycled glass saves 1.2 tons of virgin raw materials and cuts CO_2 emissions by 60%. This creates jobs and value in Europe thanks to recycling and reduces virgin raw material and energy use, as well as saving CO_2 emissions.

Decoupling growth from resource use

In the past 25 years, EU glass recycling increased by 139%, while EU consumption of glass packed products increased by 39%. In the past 50 years, energy consumption was reduced by 80%, and according to a French Study CO_2 emissions dropped by 70%.

Tableware economic impact study

FEVE who also represents Tableware carried out a joint study with EDG on the tableware sector. The results of this study are presented under Domestic glass section.

2. MARKET DATA - Year 2014

Glass packaging globally accounted for 314.9 billion units which translates into a 7.5% share of total retail packaging volumes in 2014. In spite of pressures from competing materials and increasingly higher costs pertained to its production and handling, glass remains the reference packaging material for quality food and drink products: it is also a premium packaging solution at very competitive costs.

In the EU, in 2014, data for container glass for food and drink as well as to flacons for perfumery, cosmetics and pharmaceutical sectors recorded a solid growth. In the EU28, production volume increased by 1.6% according to FEVE 2014 published data. More than 22 million tons were sold to customers inside and outside EU markets. All EU countries recorded positive growth although at different paces. Poland posted a 7.4% increase - the highest in the EU region. Growth in the South-East area (2.9%), North-Central area (2.1%) and France (2.2%) were also above the EU average. Outside the EU zone, Turkey recorded a striking 14.8% growth compared to the previous year. These data confirm a stable trend of the previous years.

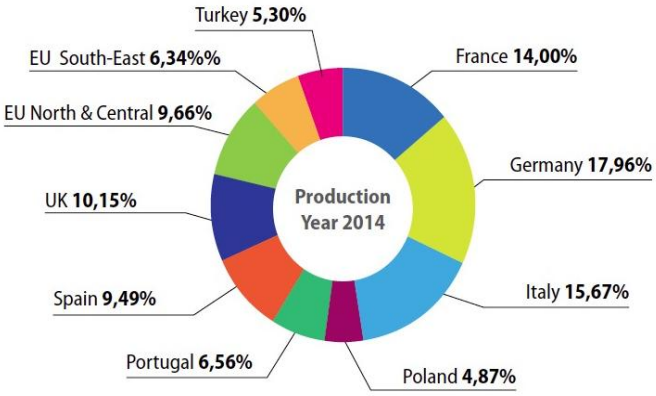
6 YEAR PRODUCTION FIGURES IN TONNES AND 2014 GROWTH FIGURES BY COUNTRY

Country	2009	2010	2011	2012	2013	2014	Growth 14/13
Germany	3,778,852	3,787,750	4,065,452	3,934,844	3,933,641	*3,973,786*	*1.0%*
Italy	3,332,414	3,506,532	3,568,710	3,391,637	3,445,302	*3,467,462*	*0.6%*
France	3,153,660	3,152,023	3,310,186	3,146,755	3,030,949	*3,097,473*	*2.2%*
United Kingdom	2,116,155	2,316,604	2,310,667	2,226,321	2,240,759	*2,245,986*	*0.2%*
Other North & Central	1,950,400	1,950,400	2,041,404	2,096,753	2,093,984	*2,138,703*	*2.1%*
Spain	1,927,949	1,979,957	2,067,016	2,012,381	2,087,000	*2,099,236*	*0.6%*
Portugal	1,288,314	1,312,909	1,351,919	1,441,962	1,439,429	*1,451,735*	*0.9%*
Other EU South-East	1,068,659	1,068,659	1,186,726	1,198,207	1,364,601	*1,403,563*	*2.9%*
Turkey	612,571	779,462	822,502	950,000	1,021,000	*1,172,313*	*14.8%*
Poland	908,792	986,347	986,750	996,660	1,003,551	*1,078,071*	*7.4%*
Total Europe	20,137,767	20,840,643	21,711,331	21,395,520	21,660,216	*22,128,328*	*2.2%*
Total EU 28	19,420,899	19,956,884	20,783,077	20,333,593	20,533,216	*20,858,515*	*1.6%*

Note:
Figures are total production for packed bottles and jars for food and drink and flacons in tonnes
Other North – Central: Austria, Belgium, Denmark, Estonia, Finland, Netherlands, Sweden, Switzerland
Other South – East: Bulgaria, Croatia, Czech Republic, Greece, Hungary, Romania, Slovakia

PRODUCTION YEAR 2014

Production of packed glass (bottles, jars, flacons) in Tonnes	
COUNTRY	2014
France	3,097,473
Germany	3,973,786
Italy	3,467,462
Poland	1,078,071
Portugal	1,451,735
Spain	2,099,236
United Kingdom	2,245,986
EU North & Central[1]	2,138,703
EU South-East[2]	1,403,563
Turkey	1,172,313
Total EU 28	20,858,515
Europe (EU28+CH+TR)	22,128,328



Based on FEVE geographic scope
[1] EU North & Central Area: Austria, Belgium, Denmark, Estonia, Finland, Netherlands, Sweden, Switzerland (8 countries)
[2] EU South East Area: Bulgaria, Croatia, Czech Republic, Greece, Hungary, Romania, Slovakia (7 countries)

Production - Definition
Amount of produced packed glass (bottles, jars, flacons) in tonnes.

2. EU LEGISLATIVE DOSSIERS

One of the main EU dossiers the industry has been involved in the last years is the **EU Emissions Trading Scheme** that has been put in place by the European Commission to fight Climate Change. The container glass industry has been successful in collaborating with the European Commission and in proving that this is a sector which is potential subject to delocalize in countries outside EU if it not protected and supported. The container glass has been kept on the carbon leakage list for the period 2015-2019 published in October 2014. However, the challenge remains for the future after 2019. An exclusion of the industry from the list would negatively affect its competitiveness in EU and favour the delocalisation of the production towards other global regions where legislation on CO2 emissions is less stringent. Meanwhile, discussions on the future of ETS after 2020 have started and the industry is making any efforts to collaborate with the European Commission by providing any requested input.

The **Circular Economy** Package is a fundamental dossier for the industry. The acknowledgement of the closed loop recycling of a permanent material as the best option for resource efficiency is asked. The efficient use of raw materials, as well as the recycling of waste in a closed loop, is a key factor to build a sustainable, circular economy. The industry also calls for separate collection schemes (i.e. bottle banks) that can bring better quality of recycled glass to the industry to be used again for a new production cycle. Reviewed recycling targets should look at current situation in the Member States and be accompanied by structural measures that would help achieving them in an equal way to other materials. Simplified rules and definitions should also help to have a better picture of what, where and how materials are recycled, and to set sound objectives for the future. The issue of reuse and a level playing field needs careful attention in any new legislative package. A future EU circular economy that aims at minimizing environmental impact can only rely on products that are designed to be actually recycled or reused at their end of life. According to the E&Y study, EU glass bottles are made on average of 52% recycled glass. Also, bottles are up to 30% lighter than 20 years ago.

More than 70% of the raw materials used in glass production travel less than 300km. And the same average distance is attributable to delivering 50% of bottles to customers.

Another major dossier the industry is collaborating on with the European Commission is the **Product Environmental Footprint (PEF)**. In the framework of the European Commission's communication "Building the Single Market for Green Products", the PEF is a Life Cycle Assessment (LCA) methodology calculating the environmental performance of a good or service, throughout its life cycle. It also sets the basis for product comparison but public claims comparing products are only allowed if the results are based on the same Product Environmental Footprint Category Rules (PEFCR). It is surely a good tool to drive environmental improvement in one sector, but there are several limits not addressed adequately and can result in incorrect and misleading information..

The review of the **Food Contact Legislation** and the upcoming new rules was an opportunity for the industry to put forward the key strengths of glass when it comes to interaction with content. FEVE undertook a series of lab tests that all confirm glass is the most inert material of all packaging, and the best option for protecting consumer's health against unwanted migration of chemicals from packaging. Glass packaging will meet the most stringent of any future EU food contact standards and regulations because glass is chemically inert, meaning that it does not interact with its contents and it is impermeable to external contaminants.

4. FRIENDS OF GLASS INVITES CONSUMERS TO MAP THEIR TASTE

Friends of Glass (www.friendsofglass.com) is an influential Europe-wide forum that supports and promotes the right of consumers to be able to choose food and drink products in glass packaging. Friends of Glass unites all those who believe glass is the clear choice for their health, their families and for the environment. Opinion makers, researchers, bloggers, journalists and policy makers independently share their belief in glass as best packaging option with the social media consumer network.
Amongst the packaging solutions, glass is the most inert and safest packaging material. Glass is the packaging material which acts as a natural and impermeable barrier; it does not interact with food and drink products, it preserves its taste pure and unadulterated.

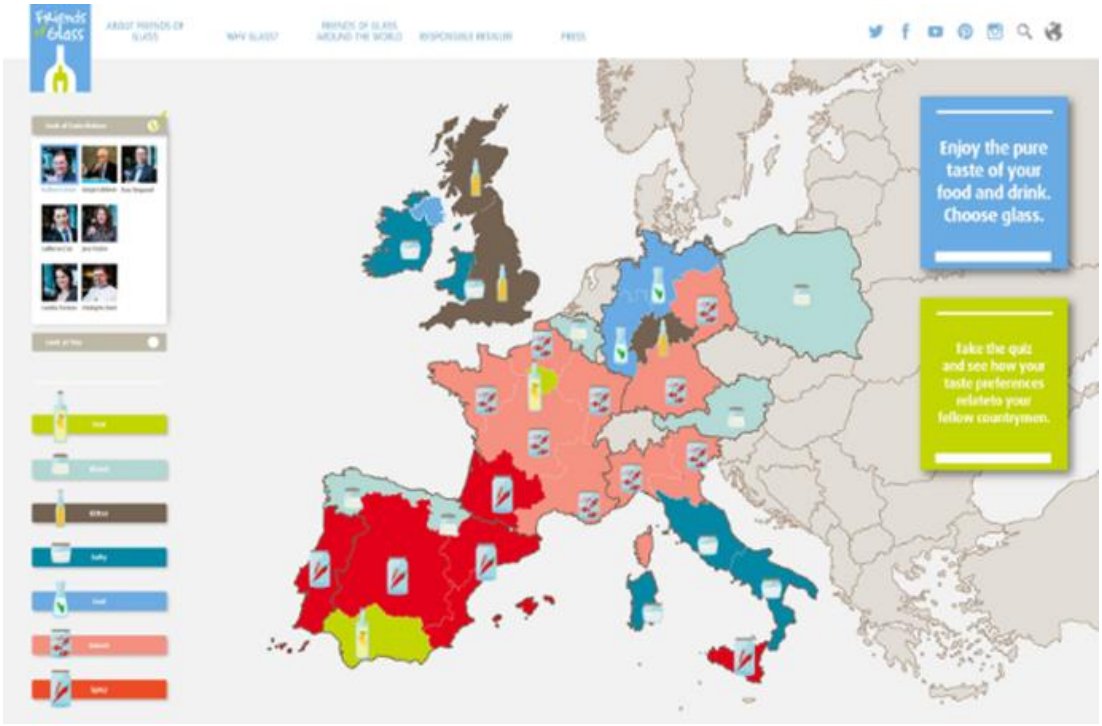
According to a consumer research carried out in 2014, health concerns play a key role in consumer decision making, and in driving demand for food or beverages packed in glass. Among those who opt for glass, 61% trust it as the safest packaging for their health. This compares with 48% of consumers surveyed in 2010. Consumers are looking at how products are stored and packaged - not only at what's written on the label.

In 2014 the new campaign "Look Beyond the Label" was launched to promote the fundamental role of packaging in protecting consumers' health. The campaign invites to look beyond the label, look at the packaging and not just at the product, because food and drink is not just matter of ingredients.

The inertness of glass makes glass an excellent preserver of taste and so In 2015, Friends of Glass will launch the **'Taste of Europe'** campaign to discover what tastes can be associated to - and as a consequence be representative of the diverse range of cultures

across Europe. Friends of Glass, invites consumers to #MapYourTaste via an online quiz.

The findings will be combined as Friends of Glass seeks to define the ultimate 'Taste of Europe'. With the Taste Map, Friends of Glass wants to find out what tastes best represent Europe and to define the "Taste of Europe". Find more news on www.friendsofglass.com



1. Introduction to the European flat glass sector

GLASS FOR EUROPE is the trade association of European manufacturers of flat glass. Flat glass is the primary material that goes into a variety of end products that surround us every day such as windows and facades for houses and buildings, windscreens, windows and backlights for automobiles and transport, mirrors, covers and connectors for solar-energy equipments. It is also used, in much smaller quantities, for many other applications including interior fittings and decoration, furniture, "street furniture" (e.g. bus stops), appliances and electronics.

Flat glass production in the EU

Flat glass is mostly manufactured by way of the float process, which allows the large scale production of high quality sheets of glass. As glass furnaces need to be heated up to 1650°C, energy accounts for a large share of production costs, i.e. around 37%, according to the CEPS study on compositions and drivers of energy prices in the flat glass sector.

A typical float plant produces 650 tonnes of melted glass a day for uninterrupted periods of 16. Within a year, such an average plant produces enough glass to cover 100 times Warsaw's Parade square with layers of 4mm glass.

Flat glass manufacturing is a capital intensive industry, dominated by a handful of multinational firms. Glass for Europe's five members, i.e. AGC Glass Europe, Guardian, NSG Group, Saint-Gobain Glass and Sisecam, operate 52 of the 57 float glass lines located in the EU. Four other float glass lines are operated by the company Euroglas/Tröesch and one by the Italian-based firm Sangalli.

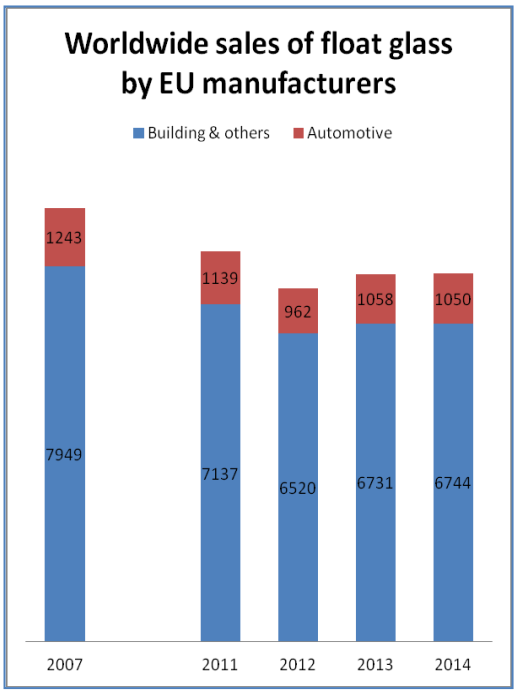
A large and diverse value-chain in the building and automotive glass sectors

Beyond the production of large sheets of flat glass, Glass for Europe member companies are also active further down the value chain. They process glass so as to enhance its properties, be it in terms of resistance, energy efficiency, transparency, acoustics, etc. This creates more added value and allows for the development and marketing of cutting-edge products to meet the demanding requirements of the building, automotive and solar markets.

A large number of SMEs also process and transform glass before it is assembled by thousands of SMEs and craftsmen into final products, such as insulating glass units (IGUs). Close cooperation with these value-chain actors is key for the flat glass industry to remain acute to clients' realities and demands.

Video to learn more on the flat glass industry

2. Market Data - Year 2014



In 2014, worldwide sales of float glass by EU manufacturers remained stable, below 8 million tonnes, i.e. 15% below pre-crisis levels of 2007.

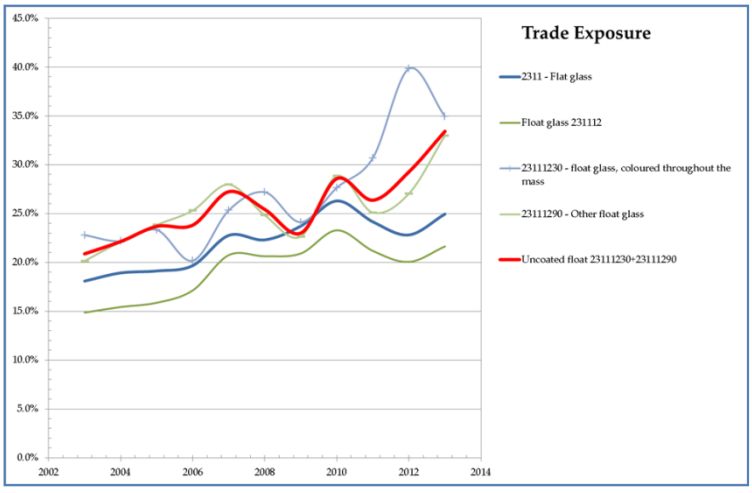
This low level activity is still explained by the same causes than in the previous years, i.e. the very low level of activity in the construction industry.

In this context, the EU manufacturing capacity remained also stable with some plants put off production while three refurbished ones reopened. This shift shows that despite the harsh economic environment for flat glass manufacturers, the industry continues to invest in upgraded plants to minimize both energy costs and GHG emissions. To date, there are still a dozen of float lines out of production.

Most rolled or patterned glass plants[2] have been shut down. This is explained by the sharp drop in demand for solar glass due to unfair competition practices from Chinese manufacturers. The EU anti-dumping duties came late for the European industry to stay afloat.

3. The EU ETS and the flat glass sector: new data

Trade exposure of float glass products on a steep rise



The trade exposure for unprocessed float glass, i.e. only float products manufactured in installations covered by the EU ETS, has risen consistently over the last years (red line).

In 2013, the trade exposure for these products surpassed the 30% threshold and reached 34%.

Source Eurostat: data for 2014 are not yet available.

What does 43% less GHG in 2030 compared to 2005 means for the flat glass industry?

Based on real data up to 2012 (production and GHG / Eurostat and EUTL), the effective reduction in GHG emissions per output unit required in the flat glass sector would be the followings depending on three production growth scenarios.

[2] Rolled / patterned glass is a type of flat glass that is produced thanks to a different manufacturing process. This process is used in only a few, smaller plants to produce specific types of glass, such as extraclear glass for the solar sector.

	% of GHG emissions reduction per output unit (between 2013 and 2030)	% of GHG improvement rate per output unit per year
Scenario 1 constant production between now and 2030	31,1	2,0
Scenario 2 1.5% annual increase in EU production between now and 2030	44,9	3,3
Scenario 3 1.5% annual increase in EU production between now and 2020 and 2.5% between 2021 and 2030	50,1	3,8

These emissions reduction levels should be compared to the sector's technical CO_2 emissions reduction potential estimated to be of 5 to 10% by 2030, i.e. 0.3% to 0.5% per year, respectively. Although the EU ETS does not require per se on the flat glass sector to achieve a 43% reduction in GHG, it shows that the system means that the EU industry will have to acquire always more GHG allowances while their prices are likely to grow rapidly, thus negatively impacting production costs and competitiveness.
Link to Glass for Europe's position paper on effective protection against risks of carbon leakage

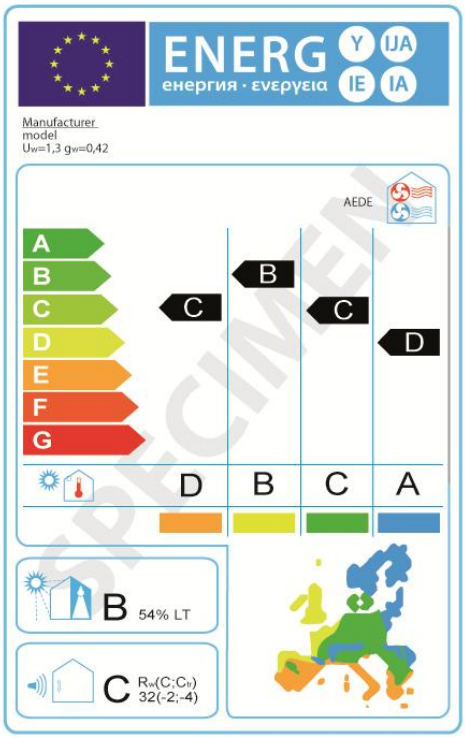
4. Time to land with an EU Energy label for windows

In May 2015, the final version of the eco-design preparatory study on windows, Lot 32, should be released. Glass for Europe has been advocating in favour of the establishment of an EU energy label for many years and hopes that a meaningful regulatory proposal can be presented by the European Commission to the eco-design forum as of end-June 2015.

Based on the last draft version of the preparatory study seen to date (March 2015 version), Glass for Europe welcomes the fact that the EC consultants:

- recommends to establish an EU window energy label
- suggests to focus this instrument on windows for use in residential buildings
- proposes to use an 'energy balance equation' to assess the energy performance of windows.

Concerning potential eco-design measures, Glass for Europe takes note of the consultant's recommendation not to develop such a regulatory instrument.



Glass for Europe is however in complete opposition with the three proposals for labels presented by the EC consultants. The background methodology for assessing products would lead to inaccurate ranking of products, which would misguide consumers in their investment choices. This is largely due to three choices made by the consultants: first to incorporate shading and shutter devices within energy ratings based on completely artificial models, second, to disregard the different European climatic conditions and in turn the various energy and comfort needs of Europeans and, third, to provide seasonal ratings (one rating for heating and one rating for cooling) while windows are not changed according to seasons.

Glass for Europe now works in close collaboration with the services of DG Energy so that a robust and yet simple label can still be established. Glass for Europe has unveiled its proposal for a label lay out *(see image)* and assessment methodology as a matter of transparency.

Video explaining the need for and possible design of an EU energy label, as conceived by Glass for Europe

5. CONCLUSION

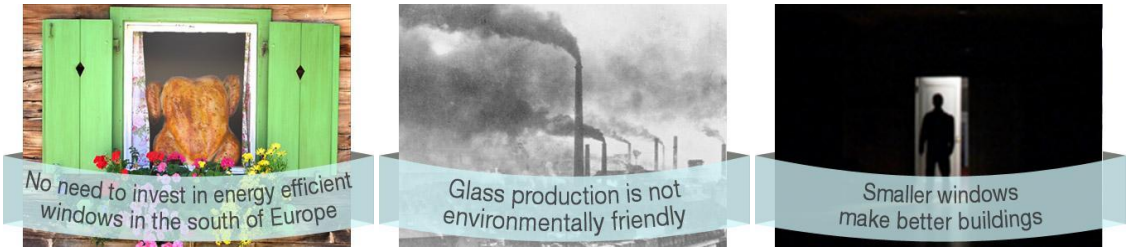
With limited economic growth rates forecasted for most EU countries in the coming years and no tangible sign of solid recovery in the building sector, flat glass manufacturers anticipate moderate growth of EU sales in the years to come. The overall business conditions could nevertheless slightly improve due to a rebalance between supply and demand provided that imports do not rise too fast.

Sources of growth outside the EU are sought but limited. Exports outside the EU are confined to a few niche products of high added value. With the increase in production capacity in EU neighbouring countries, EU manufacturers can hardly compete on exports for most mainstream products. EU manufacturers nevertheless continue investing heavily in R&D and new product development. The take up of new innovative products on the market could however be slowed down by the limited activity in construction and automotive.

For these reasons, the competitive situation of the flat glass industry is expected to remain difficult. In this context, Glass for Europe is happy to contribute with plant case studies to the upcoming cumulative cost-assessment study of the glass and ceramics sector. We hope that the learning from this study will be fully taken into account by the European Commission at time of implementing President Juncker's 'better regulation' agenda.

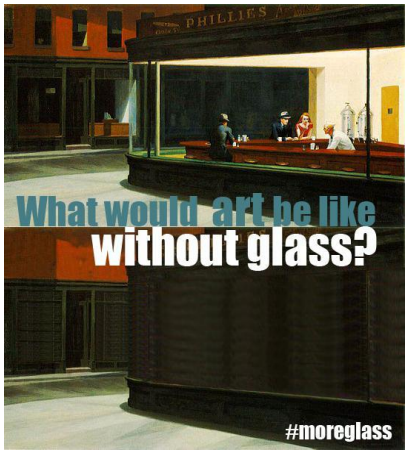
Check this out!

Myth and realities about flat glass: rediscover the flat glass industry!



Check the reality by clicking on each picture

What would the world be like without glass? #moreglass



Check out the video and all posters

1. Overview of the Domestic Glass Sector

The number of European manufacturers of domestic glassware is estimated below 50. The sector has been stable for the latest 12 months even though the crisis is hitting some significantly, with direct employment decreasing by more than 2% in 2014 compared with 2013, to now ca. 34,000 direct jobs.

In 2014, data collected by the sector show that the EU production and turnover slightly declined compared with 2013, which was already extremely low: EU production still displays a decrease of 6% over 2013 and a total decrease of 30% since 2008 (start of the crisis). This still leaves our industry 1/4 below pre crisis figures in production.
Exports decreased by 3% compared with 2013 and are still far from the 2011 exports volume by almost 11%. Moreover the imports did increase by 7% proving the strength of the trade intensity. Competitiveness of Europe, through currency levels, trade rules, regulations, cost and access to energy, is critical to our industry and is characterised by capital and labour intensity, making adjustment much more difficult.
The outlook of the beginning of 2015 is certainly not better with idle capacity and prices downwards, but the favourable EUR exchange rate in relation to the dollar is somewhat helpful for exports.

		IMPORTS ***TABLEWARE***	*%*	*Average* *Price (€)*	***EXPORTS*** ***TABLEWARE***	*%*	*Average Price (€)*	***TOTAL EU-27*** ***Production***	*Exports* *%*	*Domestic* *%*
Tonnes	2006	**437.907**	+ 5.4		**377.011**	- 1.5		**1.526.000**	25%	75%
Tonnes	2007	**474.076**	+ 8.3		**389.635**	+ 3.4		**1.547.000**	25%	75%
Tonnes	2008	**484.324**	+ 2.2		**346.602**	- 11.0		**1.440.000**	24%	76%
Tonnes	2009	**407.211**	-15.9		**289.421**	- 16.5		**1.041.000**	28%	72%
Tonnes	2010	**437.422**	+ 7.4		**334.124**	+15.4		**1.016.000**	33%	67%
Tonnes	2011	**404,903**	- 7.4		**346.903**	+3.8		**1.090.000**	32%	68%
Tonnes	2012	**372,131**	- 8.1		**317.033**	- 8.6		**1.006.000**	31%	69%
Tonnes	2013	**363,734**	-2.3		**319,255**	+0.7		**1.108.000**	29%	71%
Tonnes	**2014**	**388,580**	**+6.8**		**309,605**	**-3.2**		**1.047.000**	**30%**	**70%**
'000 Euros	2006	**724.756**	4	**1,66**	**1.369.923**	+ 3.9	**3,63**			
'000 Euros	2007	**765.796**	+ 5.7	**1,62**	**1.370.337**	0	**3,52**			
'000 Euros	2008	**777.499**	+ 1.5	**1,61**	**1.315.183**	-4	**3,79**			
'000 Euros	2009	**643.199**	-17.3	**1,58**	**975.027**	- 25.9	**3,37**			
'000 Euros	2010	**757.736**	+ 17.8	**1,73**	**1.178.819**	+ 20.9	**3,53**			
'000 Euros	2011	**694.086**	-8.4	**1,71**	**1.243.831**	+ 5.5	**3,58**			
'000 Euros	2012	**681.938**	-1.8	**1,83**	**1.228.895**	- 1.2	**3,88**			
'000 Euros	2013	**642.634**	-5.8	**1,77**	**1.221.049**	- 0.6	**3,83**			
'000 Euros	**2014**	**694.888**	**+8.6**	**1,79**	**1.198.166**	**-1.9**	**3,87**			

2. Regulatory Affairs – Legislative Issues

REACH Regulation is still a major subject. It has admitted that glass is a new substance whose components are transformed into a new structure of its kind. We have therefore qualified all our raw materials as intermediates. However, this is challenged by ECHA and the Member States Committee. The first substance of concern put under authorisation is arsenic trioxide, which is considered by ECHA to be a processing agent and therefore not an intermediate. This would imply costly authorisation files. Though most of EDG companies do not use arsenic trioxide anymore, this issue is a precedent for other glass constituting elements. EDG hopes to change ECHA initial position thanks to a huge work with member states and ESGA's commitment.

Pressure remains high on critical elements for glass such as lead and refractory ceramic fibers. The moving interpretation of 'intermediates' by ECHA towards a more restrictive one is disturbing the legal stability needed by companies. EDG welcomes the fact that crystal, because it is otherwise regulated, was granted derogation in the restriction on articles which can be placed in children's mouth.

Emissions Trading Scheme: Like all other glass sectors, EDG is concerned by the subject. Political pressure to artificially increase the CO2 price in the market is not tolerable cf. Market stability mechanism proposal. When the economy is down the related market's elements like CO2 should also get down, as it is the case now. This is logical and perfectly in line with the ETS regulation. It is absolutely critical for the glass industry as energy-intensive user, to remain on the carbon leakage list beyond 2020.

Food Contact Materials: The ongoing revision of the Food Contact Materials Directive for Ceramics (1984), launched in June 2012, foresees dramatically lower migration levels for lead and cadmium. This is a major issue for lead crystal and enamel decorated glassware in contact with food (plates for example) as our customers spontaneously demand the enforcement of the limit values determined for ceramics (notably on lead and cadmium). The revision was firstly intended to include glass, but this aspect has now been officially postponed. The lack of glass regulation in food contact is leading some Member States to openly envisage national legislation. This would create barriers to international trade in glass for FCM.
It has to be borne in mind that the migration behavior from glass might defer from the ones from ceramics. Moreover, discussions are ongoing with regard to new migration testings which would be technically and financially difficult to implement.
Glass producers understand the reason for new migration levels. However we would only accept to move forward on real impact of real food in reasonable conditions with a long term use of our ware. First results of release levels from representative glassware have been delivered by the EURL and studies are still going on. We will need to be extremely careful on those studies to accept only needed constraint for real impact on consumers.

This being said, it should not be forgotten that the imports of ceramics and glassware sometimes far from being compliant with the current European Regulation ! Trying to make Europe an island of difference versus the rest of the world may be inefficient. This is why we have opened a path to work out with the ISO committee TC166 facilitating the implementation of an equivalent regulation in other parts of the world.

3. SPECIFIC ISSUES

Glass is a substance, not a blend of its constituents.
EDG had to issue again and again specific comments on the specific nature of glass creating a new matrix where all elements are bonded to each other as it inhibits their mobility.
For lead bound in crystal, this concerns a very specialized activity only made possible by the adjunction of lead oxide which enables significant hand-made work and unique applications. Over more than two decades, Industry has carried out research to substitute lead, without satisfaction. The need to apply for exemptions to the ROHS Directive, despite it is well known and documented that there are no alternatives to lead, and despite the inertness of the glass substance, is putting legal uncertainty every five years, without advancing the objectives of the ROHS. .

4. OUTLOOK

The domestic glass industry is subject to high trade intensity, particularly from China, and new plants are opening in Egypt, Russia, and Tunisia, directly targeted at the EU domestic glass market.
The recovery from the 2008 crisis is still very low and several EU producers merged, restructured or are facing severe difficulties.
A control of the goods conformity to EU regulations and of the adequacy of the importer's goods declaration would certainly help the EU domestic glass industry which is complying with the EU legislation.
EDG remains on its basics to serve a market where people certainly drink and eat every day but do not need to change their vessels every quarter. We, as always, give design, trends and fun to this activity to stimulate pleasure but in this difficult economical period this is not sufficient to maintain our market. As providers of tens of thousands of jobs in direct and indirect employment, it implies the highest care and any improvement from the authorities would be appreciated.

1. Overview of the Special Glass Sector

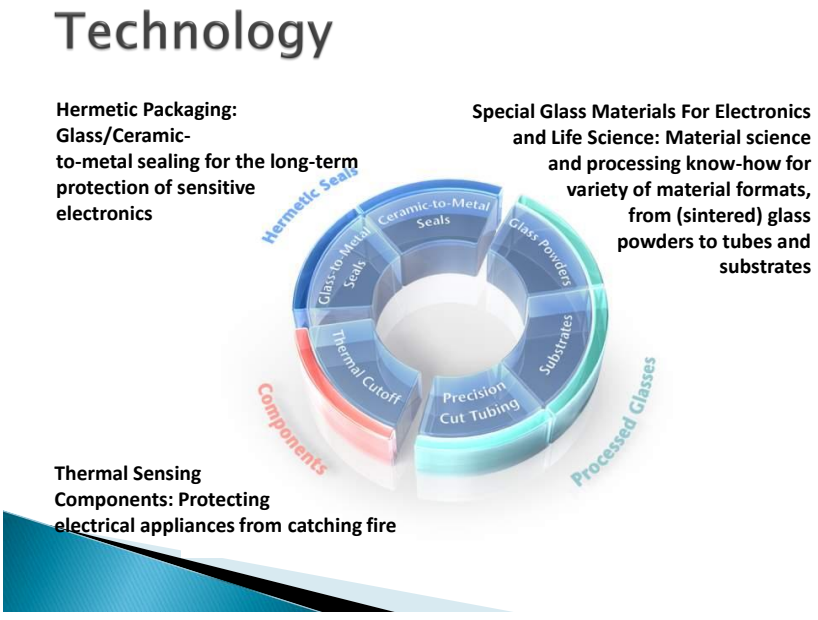
The Special Glass industry is comprised of numerous companies and plants. Some of them are small, oriented towards high value/high technology products rather than high tonnage. As a consequence, gathering precise and reliable data is difficult. We herewith tentatively provide general inputs, keeping the sector segmentation used since 2005.

What is special glass ?

Special glass includes glass with special compositions for complex technical requirements and advanced applications. It excludes normal container glass, flat glass, tableware and crystal glass, as well as insulating or reinforcement glass fibres.

The particularities of special glass are distinctive melting processes (temperatures, materials, design, capacity) and wide differences between products (properties, capacities, specific commercial value). Specialty glasses constitute non-crystalline materials which are developed in view of their chemical and physical properties for particular applications. For many technical products and devices specialty glasses serve as key stone elements in such fields as glass optics in cameras, glass substrates for liquid crystal displays, wave guides for telecommunication, quartz glass projection lamps, glass-ceramics for cook top panels and telescope mirrors.

The European Special Glass Industry is a small sector (less than 5% in tonnage of the glass industry), but very diversified and with high added value. Its numerous companies, ranging from SMEs to multinationals, are oriented towards high value and high technology products.



Results in 2014 showed a stagnating trend compared to the previous year. In comparison with 2013, the annual production of special glass remained stable at 670,000 tonnes, whereas total special glass consumption decreased by 2%.
Extra-EU exports increased by 17.4% in volume (total volume: 22,359 tonnes) and by 2.9% in value (€ 266.3 million).
Imports decreased by 8.8% in volume (total: 14,410 tonnes) and by 0.4% in value (€ 175 million).
The main suppliers of the EU remain China with 47% (total Far East: 62.7%) and the USA (27%).

Market Trends

Tubing
The tubing activity is mainly driven by pharmaceutical and medical applications (laboratory glassware). While long-term polymers may threaten the business, the market keeps growing a few percent per year, and European manufacturing sites were working at good capacity even if under increasing competitive pressure from the Far East.

Glass ceramics
Glass ceramics, with a major market in cooktop and fireplace windows, has grown at a pace of about 5-10 % a year in the early 2000ies, but it had to face slower growth from 2010 on. The worldwide cooktop demand is improving again, benefiting from less depressed economical situations both in Europe and in North America, the two main markets for this business segment.
Two companies melt the corresponding green glass in Europe, generally at high temperatures and with high melting compositions. Articles intended for the European market are finished (ceramed and decorated) in Europe. For articles sold outside Europe, they are shipped as green glass while finishing, i.e. ceraming and decoration, is done close to the appliance maker (USA – Asia).
The market for glass ceramics is growing in China. Several Chinese companies are melting and finishing glass locally. Designs and qualities have come closer to the western countries' standards, although with little progress over the 3-5 past years. The levels of EU imports from these Chinese manufacturers have not significantly progressed since 2010.

Optical and ophthalmic
Ophthalmic glass is a mature business under increasing threats from polycarbonates except in certain, very specific applications. Glass is still used for high refractive index applications, especially for strong visual impairment, photochromic and solar lenses and the moulds used for the casting process of plastic lenses.

In the optical field, numerous demanding applications can still only be covered by glass products, due to its low expansion coefficient. It is a business that is very much segmented. There are numerous compositions and formulations, with high added value, small individual tonnages and requiring special raw materials, often unique, for providing a given property to the glass.
Small in volume but high in added value are reflectors and heat/UV protection filters for video projectors.

Radiation protection glass
Radiation protection glass is an increasing business driven by the implementation of X-ray protection equipment for hospitals (upgraded or new installations) and by some government nuclear programs for updating or implementing nuclear reactors.

Lighting

Lighting glass remains a large volume. It includes fluorescent lighting, halogen sources, LED and automotive headlights. This last one is decreasing, being replaced by polymer solutions. Lighting is globally a mature business and increasingly eroded by imports from the Far East.

Special applications and niche market

There are many applications of special glass for certain niche markets. Examples include:

- Use of glass as a material, not an article can be found in applications such as metal sealing in atomic power plants or nuclear-powered submarines. The glass solder is used for absolute hermetic seal of the metallic conductor out of the nuclear reactor.

- Glass is increasingly used for special applications such as flow reactor used in the chemical and pharmaceutical industry to replace batch reaction processes. They allow a continuous, fully controlled reaction process and lead to a reduction in waste of raw materials, cleaning, etc.

Applications of Special Glass outside the EU

Many applications of special glass, e.g. LCD Display glass, optical fibre, telescopes, etc. require large factories (investment) and/or need to be close to the converter and are therefore not or no longer present in Europe.

2. Regulatory Affairs – Legislative Issues

Particularly with regard to the comment on ophthalmic and optical glass, but applicable to most parts of the special glass activity, minor (in weight %) components play a major role in providing the required properties of the products. As a consequence, some aspects of the evolution of European regulations are more critical to the special glass sector than to the flat and container glass sectors, which are based on very large tonnages/few formulations. This underlines the need to provide sustained and well documented participation from ESGA members to all working groups aimed at improving the content of rules such as REACH, RoHS, WEEE, etc.

Glass is a UVCB substance under the EU **REACH** Regulation. It is made from raw materials that are intermediates in the synthesis of glasses. The special glass Industry faces difficulties in relation to some misunderstandings of the REACH Regulation, and notably in relation to intermediates.

The manufacture of special glass involves the use of intermediate raw materials. However, ECHA's approach to redefine the REACH intermediate definition via guidance, workshops and comments, is leading to confusion and a cautious approach by the legal departments of raw materials suppliers. Raw material suppliers are faced with their downstream users' statements (raw materials are used as intermediates in glass manufacturing) and ECHA's statements (the function of the raw material is to be taken into consideration in addition to the transformation into glass). As a result, some raw material suppliers already threatened to stop supplying vital raw materials after the sunset date. The special glass sector fears that, should ECHA continue to publish confusing statements on the interpretation of intermediates, other raw material suppliers may be equally confused, which could compromise the viability of manufacturing high end special glass in Europe.

Refractory Ceramic Fibres (RCF) are currently under the 5th prioritisation for authorisation under REACH. Refractory Ceramic Fibres have been replaced, where possible, in the construction of glass melting furnaces in the Special Glass Industry. Only very few, very specialised application in very low volumes remain. A requirement for authorisation of these products under REACH, associated with the extreme costs for such an authorisation and the uncertainty of obtaining it and being able to renew it, would represent another major challenge.

The glass industry, which for more than two decades has carried out research on finding substitutes for some of the most hazardous substances it uses, feels that its past efforts are not recognized. Some glass raw materials are definitely not substitutable and if they were banned, this would deprive consumers and laboratories of essential products. This is the case for certain high end applications in the manufacture of which those raw materials are essential: optical applications for arsenic compounds, laboratory applications for borates, radiation protection for lead.

For instance, the need to reapply every five years for exemptions under the RoHS Directive (Restriction of use of certain substances in electric and electronic equipment), generates

- uncertainty for long term investments in new production lines,
- uncertainty for the viability of companies.

The uneven implementation in different EU Member States of the **BREF Conclusions** and the **Industrial Emissions Directive (IED)**, creates many challenges for the special glass industry. Most challenging is the varying implementation of the baseline report and certain air emission limits, the former due to an over interpretation of the requirements in some EU Member States, the latter because of the certain lower limit values being close to the technical ability to achieve these.

The EU **ETS Directive** and the reduced availability of CO2 allowances through recently introduced mechanisms (e.g. market stability reserve, cross sectoral correction factor - CSCF) impose additional burdens to this innovative sector of the glass industry. In particular, an exclusion of glass from the upcoming revised carbon leakage list would have extreme adverse consequences on the competitiveness of the sector.

Respirable Crystalline Silica (RCS)
It is currently envisaged to include (process generated) respirable crystalline silica in the revision of the Carcinogens and Mutagens at Work Directive. In the case of glass making, the presence of some process generated RCS is inevitable. ESGA urges the EU authorities to clarify the definition of this substance and the criteria which industry and inspectors should take into account in the definition of a system which is protective to workers.

3. SPECIFIC ISSUES

While some sectors are growing, the employment balance in the special glass sector is not favourable in Europe.
In the growing special glass applications like pharmaceutical glass, the activities are kept in Europe due to the complexity and technology barrier, which is an efficient value generator. Some future opportunities may arise from present research programmes in the EU: new lighting technologies, photovoltaics, etc. This emphasizes the role that R&D has to play and in general the technological innovation in the special glass activity.

4. OUTLOOK

Special glass products contribute to sustainable, efficient and innovative living standards in Europe. It is a day-to-day fight to innovate and contribute to the European rebirth out of the 2008 crisis.

The special glass industry is paying a high tribute for remaining competitive vis-à-vis the rising competition from the Far-East, and China in particular.
Despite strong R&D efforts, no new potential applications/products are expected to be produced in Europe at the moment. The intermediate status of the raw materials used to produce glass is key to our sector.

1. Overview of the Reinforcement Glass Fibre Sector

GlassFibreEurope represents the interests of European glass fibre manufacturers and their 5,000 employees. Its member companies are responsible for 95% of the production of Continuous Filament Glass Fibre in Europe (CFGF).

CFGF is a strategic sector for Europe's future because new materials made with it are stronger and lighter than traditional materials like steel, aluminium and wood. The European glass fibre industry is a hi-tech innovative sector.

By reinforcing polymer resins, glass fibre products reduce energy consumption through substantial weight reduction. By strengthening and reducing weight, CFGF is making a significant contribution to energy and resource efficiency and are one of the enabling industries actively contributing towards an efficient, low carbon economy.

Production, employment, competition and market share development
Between the 80ies and 90ies, glass fibre production in Europe used to be a fast growing sector with a steady 4-6% annual production growth until 2008 but growth was moderately thereafter.

Overall production in Europe fell sharply from 770,9 kton in 2011 to 668,3 kton in 2012. It increased in 2013 to 711,4 kton and to 730,4 kton in 2014. However, overall production still did not recover to surpass the 2011 production.

The production's decline from 2008 onwards led to massive job losses in the CFGF industry from 8,300 employees in 2008 vs. around 5,000 employees in 2013 and 2014 respectively.

This decline is predominantly driven by imports from Asia, mainly China due to the massive penetration of the European CFGF market.

2. Regulatory Affairs – Legislative Issues

GlassFibreEurope welcomed the decision by EU Member States to support the European Commission's proposal to impose trade defense measures against Chinese glass fibre manufacturers in December 2014.

Unfair competition from China had caused considerable injury to European industry, with the loss of European factories and jobs in an important strategic sector. We hope the new measures will restore healthy competition in the EU CFGF market for the benefit of producers and downstream users alike.

The European Commission initiated an interim review of the existing anti-dumping measures on CFGF imports from China on 18 December 2013, and a new anti-subsidy proceeding on 12 December 2013. After a thorough investigation, the European Commission established that Chinese manufacturers dump CFGF at predatory prices to seize EU market share, and receive illegal subsidies from the Chinese government.

Therefore, the European Commission notified parties of its intent to impose new anti-dumping and anti-subsidy measures in early October 2014. The final proposal to impose total duties which are generally up to 25-30% on imports from Chinese producers was supported by EU Member States on 26 November 2014.

European downstream industries need a local, innovative and viable glass fibre industry to compete internationally. The new EU measures will help avoid a situation where important European industries like the automotive and renewable sectors would become increasingly dependent on Chinese State-controlled CFGF supply.

In addition, GlassFibreEurope can just hope that in the Emission Trading context CFGF's status as an energy intensive industry will not be jeopardized in upcoming legislative reviews to further negatively affect their ability to compete globally.

Other costs, e.g. the high electricity prices and cumulative burden of regulation negatively effect the competitiveness of the CFGF industry additionally.

3. SPECIFIC ISSUES

After Trade Policy issues (see above), Emission Trading legislation remains the biggest thread so far for the CFGF producers to compete on a global level.
GlassFibreEurope members continue to go out of business. Beginning of 2012 Ahlstrom closed their glass fibre business and in 2013 European Owens Corning closed two facilities in Italy and Spain.
In the meantime new GFGF production sprung up in Egypt and Russia to additionally compete the European production.

4. OUTLOOK

The outlook for the European CFGF production is cautiously positive as the proposal to impose trade defense measures against Chinese CFGF manufacturers was decided for by the European Union in late 2014 and consequences are expected to get effective soon. However, production remained slightly increased but did not surpass the 2011 level.

*

* *