

WELCOME TO EU GLASS INDUSTRIES NEWS



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EU COMMUNITY NEWS

NEW EU LEGISLATION

Commission Communications

Guidance for the development of National Air Pollution Control Programmes under Directive (EU) 2016/2284 of the European Parliament and of the Council on the reduction of national emissions of certain atmospheric pollutants

This guidance document is intended to assist national authorities in the preparation of national air pollution control programmes.

Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants, also called the new National Emission Ceilings Directive (NECD) is designed to further reduce air pollution and its associated risks to the environment and human health (Article 1). The Directive includes, for each Member State, future reduction commitments for nitrogen oxides (NO_x), sulphur dioxide (SO₂), ammonia (NH₃), non-methane volatile organic compounds (NMVOC), and fine particulate matter (PM_{2.5}) emissions. Compliance with these commitments is also expected to contribute to the Union's long-term objective of achieving levels of air quality in line with the air quality guidelines of the World Health Organisation (WHO).

This guidance, developed in accordance with Article 6(9) of the Directive, aims to support Member States in developing the initial NAPCP to be submitted to the Commission by 1 April 2019. It addresses the format of the NAPCP, the monitoring of progress in its implementation, the consultations on the NAPCP and its dissemination in four corresponding chapters. A toolkit to support consideration and selection of additional policies and measures to comply with emission reduction commitments is set out in the appendix. This guidance may be amended as necessary to support the updates of NAPCPs.

All details on: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:C:2019:077:TOC>

21759/O.J. C77 – 2019.03.01

Commission Notice on Ecosystem Monitoring under Article 9 and Annex V of Directive (EU) 2016/2284 of the European Parliament and of the Council on the Reduction of National Emissions of Certain Atmospheric Pollutants (NEC-Directive)

The aim of this guidance is to address the key questions that Member States may have with regard to the practicalities of setting up and operating a network of monitoring sites that meets the requirements of Article 9 of Directive (EU) 2016/2284 (NEC-Directive).

Both Directive 2001/81/EC ('old NEC-Directive') and Directive (EU) 2016/2284 ('NEC-Directive') have the aim to improve not only human health but also the condition of ecosystems across the EU. The Clean Air Programme for Europe includes, in addition to its target for reduction of health impacts across the Union, a target for a reduction by 35 % of the ecosystem area subjected to eutrophication by 2030, compared with 2005. The determination of the extent of ecosystem impacts of air pollution in the EU is based on exceedance of critical loads and levels for sulphur, nitrogen and ozone based on predominantly long-range transport of pollutants. The calculation of these effect thresholds has relied on the work of the Working Group on Effects under the Gothenburg Protocol to the Convention on Long-Range Transboundary Air Pollution (LRTAP Convention (5)), including the work of the Coordinating Centre for Effects (CCE) and the International Cooperative Programmes (ICPs) on Waters, Forests, Vegetation, Integrated Monitoring (6), and the monitoring networks established for that purpose in the area of participating Parties to the Gothenburg Protocol.

Given the central importance of this work for the ecosystem objectives of the EU air policy, and to assess the effectiveness of the national emission reduction commitments, the co-legislators have included in the NEC-Directive provisions requiring the monitoring of the ecosystem impacts of air pollution. The mandatory monitoring is furthermore intended to reinforce the work being done under the LRTAP Convention.

The principal obligations on Member States under the NEC-Directive are as follows:

- To ensure the monitoring of negative impacts of air pollution upon ecosystems based on a network of monitoring sites that is representative of their freshwater, non-forest natural and semi-natural habitats, and forest ecosystem types, taking a cost-effective and risk-based approach,
- To report by 1 July 2018 and every four years thereafter, to the Commission and the European Environment Agency, the location of the monitoring sites and the associated indicators used for monitoring air pollution impacts,
- To report by 1 July 2019 and every four years thereafter, to the Commission and the European Environment Agency, the monitoring data referred to in Article 9.

The Commission shall report by 1st April 2020 and every for years thereafter, to the European Parliament and the Council, on the progress towards the Union's biodiversity and ecosystem objectives in line with the 7th Environment Action Programme (EAP).

The Communication also covers the objectives of ecosystem monitoring under the NEC-Directive, the scope and design of the ecosystem monitoring network, the relationship with other monitoring activities (EU legislation, LRTAP Convention, LTER-Europe (Long Term Ecosystem Research Europe) network), the reporting, possible support, and Case Studies.

Full text at <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:C:2019:092:TOC>

21760/O.J.C92 – 2019.03.11

TRADE & INNOVATION POLICIES

EU/Australia & New Zealand

Australia, New Zealand and the EU have recently decided to negotiate Free Trade Agreements. On 22 May 2018, the Council of the European Union authorised the opening of both negotiations, which started in June 2018 and are currently ongoing. In line with established practice, the negotiations are accompanied by Sustainability Impact Assessments (SIAs), which analyse the potential economic, social, human rights and environmental impact of the FTAs. The European Commission Directorate-General for Trade has commissioned the SIAs to BKP Economic Advisors, a German-based economic research and consulting firm, in cooperation with Trade Impact BV, Global Sustainable Solutions, Trinomics, Monash University, and staff of the University of Wellington.

The inception reports for the sustainability assessments in support of the EU's negotiations on FTAs with Australia and New Zealand have just been published on the SIA websites. The links are as follows:

Australia links: <http://trade-sia-australia.eu/en/>
http://trade-sia-australia.eu/images/reports/EU-AU_SIA_Draft_Inception_Report.pdf

New Zealand links: <http://trade-sia-new-zealand.eu/en/>
http://trade-sia-new-zealand.eu/images/reports/EU-NZ_SIA_Draft_Inception_Report.pdf

21761/Press Release – 2019.03.19

European Innovation Council

€ 2 Billion to Fast Forward the Creation of the European Innovation Council

The Commission takes decisive steps to set up a European Innovation Council.

Global competition is intensifying and Europe needs to deepen its innovation and risk-taking capability to compete on a market increasingly defined by new technologies.

That is why the Juncker Commission is introducing a European Innovation Council to turn Europe's scientific discoveries into businesses that can scale up faster. Currently in its pilot phase, the European Innovation Council will become a full-fledged reality from 2021 under the next EU research and innovation programme Horizon Europe.

The Commission launched in 2017 the pilot phase of the European Innovation Council, introducing open competitions and face-to-face interviews to identify and fund Europe's most innovative start-ups and SMEs. Since then, 1276 highly innovative projects have already benefitted from an overall funding of over €730 million.

Today the Commission announces important steps that will ramp up the remaining two years of the pilot phase of the European Innovation Council:

- **Over €2 billion of funding in 2019-2020: covering the innovation chain:** “pathfinder” projects to support advanced technologies from the research base (opens tomorrow); and “accelerator” funding to support startups and SMEs develop and scale up innovations to the stage where they can attract private investment (open in June). Under the “accelerator” funding companies will be able to access blended financing (grants and equity) of up to €15 million.
- The Commission will **appoint 15 to 20 innovation leaders** to a European Innovation Council Advisory Board to oversee the European Innovation Council pilot, prepare the future European Innovation Council, and champion the European Innovation Council globally. Innovators from across the ecosystem are invited to come forward by 10 May.
- The Commission will recruit a first set of **“programme managers”** with leading expertise in new technologies to provide full-time, hands-on support for projects. The call for recruitment will be published shortly.
- **68 additional startups and SMEs are selected** for an overall funding of **€120 million** under the existing European Innovation Council pilot. The companies are for instance developing a blockchain-based online payment technology, new energy efficient screens and a solution to fight traffic noise (breakdown of beneficiaries per country and sector).

Given the growing economic importance of breakthrough and disruptive innovation, and based on the early success of the European Innovation Council pilot, the Commission has proposed to dedicate €10 billion to the European Innovation Council under Horizon Europe, the EU research and innovation funding programme for 2021-2027.

21762/Press Release – 2019.02.28

ENVIRONMENT & ENERGY

Zero Net Emissions in 2050

The EU Parliament calls on EU to zero net emissions in 2050 and to raise its 2030 target to 55%. On the eve of the major global youth march/strike on climate change, the European Parliament gave a breath of fresh air on 14 March in Strasbourg to the potential strengthening of future European climate action.

He called by a comfortable majority (369 votes in favour, 116 against and 40 abstentions) for the EU to aim for zero net emissions by 2050 and raise its 2030 target to 55% between 2022 and 2024 at the latest, to the great displeasure of the EPP for the latter point.

The non-legislative resolution, adopted by 446 votes to 146, with 79 abstentions, in response to the Commission's communication '*A Clean Planet for All*', largely reflects the wishes of the Committee on the Environment for the long-term strategy to be adopted by the EU in 2020.

The European Parliament stresses that the future strategy of zero net emissions by 2050 in the most cost-effective way possible implies accelerating the reduction of greenhouse gas emissions by 2030.

According to the Parliament, only the two scenarios aiming at zero net emissions by 2050, out of the eight statements, are to be supported by the Commission. Endorsing this long-term objective, the Parliament urges Member States to do the same, and regrets that no scenario is envisaged to achieve zero net emissions before 2050.

The resolution calls on the Commission and Member States to support an ambitious 2030 target, as the current level is insufficient (a reduction of at least 40% of emissions, or even 45%, if all legislation is implemented). MEPs want the EU to increase its contribution to the Paris Agreement by raising its 2030 target to a 55% reduction in emissions compared to 1990.

They ask the Commission to present legislative proposals between 2022 and 2024 both for the revised EU contribution for 2030 and for the 2050 target.

Parliament expresses its support for climate demonstrations, including climate marches and school strikes, which raise awareness of climate risks. MEPs call on national, regional and local governments, as well as the EU, to take concrete and rapid action to help ensure that global warming does not exceed the 1.5°C limit.

Concretely, the Parliament

- has invited the Commission to align the standards of the Directive on clean ambient air (2008/50/EC) with the stricter WHO values, while also suggesting possible solutions for transport, energy and agriculture. The Commission and Member States are invited to support EU-wide R&D and certification of multi-sensor, intelligent and innovative systems intended for the monitoring of indoor and outdoor air quality.
- Member States and car manufacturers are invited to coordinate the mandatory compliance of non-compliant diesel vehicles (specifically, selective catalytic reduction) and the cleaning up of the existing fleet to avoid the ban on diesel vehicles.

On the same day, the European Union Court of Justice dismissed a Polish action for annulment of the Directive on national emission ceilings for certain atmospheric pollutants

21763/Press Release – 2019.03.13 & 14

Climate Neutral Economy by 2050 in the EU

Energy ministers from EU Member States generally supported on 4 March the EU's long-term climate strategy presented by the Commission at the end of November, which aims to achieve a zero level of net greenhouse gas emissions by 2050. However, many called for flexibility to achieve the objectives and advocated sometimes taking different measures to achieve them.

The Commission's Communication sets out eight modelled scenarios that can guide action in all sectors of the economy.

100% renewable. Luxembourg considered that "*6 out of the 8 scenarios*" of the Commission should be dropped. The last two scenarios lack transparency because they rely on nuclear power. The Luxembourg Minister considered that the Commission should provide for a 100% renewable energy scenario, a request also made by Austria (this country is aiming for 100% in 2030!), Spain, Ireland and Lithuania.

Austria also insisted on energy storage capacity (it will have to be increased by a factor of 10 by 2050, according to the Commission) and on hydrogen (steel production using hydrogen) and natural gas mixed with 'green' gas.

Fair distribution of effort. The Polish minister said he was in favour of a "*gradual reduction of current energies and an increase in new energies*". This country insisted on the need for a "*fair transition that take into account the specificities of the Member States*". However, what the Commission is proposing "*does not go in this direction*", said the Polish minister, who called for a "*fair distribution*" of efforts. "*We must not forget Silesia, a mining region in Poland.*"

The strategy for carbon neutrality "*is a huge challenge*", acknowledged Italy, which stressed the dynamics to be provided to industry and a "*more democratic*" energy system (self-production, citizen participation in renewable energies). Italy also mentioned improved use of batteries, hydrogen, or the conversion of gas into electricity. "*The costs of this transition must be calculated,*" concluded the Italian minister.

"*By combining efforts, the objective of carbon neutrality by 2050 is achievable,*" said France, which has a "*clear preference*" for the Commission's scenario of a 92-94% reduction in emissions, combined with a strengthening of natural carbon sinks. The first lever is that of energy efficiency, according to France, which also mentioned the reduction or elimination of fossil fuels such as coal and the eventual replacement of natural gas by carbon-free gas. France referred to the massive deployment of renewable energies and "*credible mixes*". "*The path to neutrality is not unique,*" the French delegation argued. The transition must not harm European companies, France concluded, citing the need for accompanying measures.

Belgium noted that "*energy transformation is linked to behavioural changes*". Progress must be balanced and gradual, without compromising security of supply.

"*There are diverging views and there is a need for frank discussion on energy policy in Europe,*" summarised the German minister. Germany has "*decided to phase out coal by 2038*". It has defended the continuation of the EU Emissions Trading Scheme (EU-ETS). The German minister stressed climate incentives, technologies and fuel cells. "*A 100% reduction by 2050 is a good thing, but it must be done at affordable costs. Frequently, it is the last ten percent that are the most expensive,*" Germany concluded.

Denmark wanted the EU to set itself an "*ambitious zero emission target by 2050 at the latest*" as early as 2019.

Spain cited a national target for renewable energy penetration in energy production of 74% in 2030 and an electrification target of 27%.

EU leaders (Council of 22 March) reaffirmed their commitment to the Paris Agreement and their support for the development of the long-term climate strategy that the EU will need to adopt by 2020 to aim for a competitive and climate-neutral economy. But, not surprisingly, while acknowledging the urgency of raising global ambitions, they **have not yet raised the EU's 2030 target**.

The balance between the competitiveness of European industry, a socially just transition for all to climate neutrality, in accordance with the Paris Agreement, and taking into account the national Energy/Climate strategies to be finalised in time, are the political priorities they have set, while being careful not to indicate the 2050 deadline for achieving this objective. France, Luxembourg, the Netherlands, Denmark, Finland, Sweden, Spain and Portugal were not successful. Several countries in Central and Eastern Europe, led by Poland and the Czech Republic, but also Germany, opposed it. The Heads of State or Government will review this future strategy in June.

“Leaders have been unequivocal in their determination to tackle climate change with urgency and ambition. Our ministers will intensify work on the EU's climate strategy in order to implement the objectives set by the Paris Agreement”, said European Council President Donald Tusk.

The Luxembourg Prime Minister, Xavier Bettel, did not hide his dissatisfaction with the conclusions from the press. The same disappointment was expressed by French President Emmanuel Macron, who *“considers that the conclusions on the fight against climate change are eminently insufficient”*, and describes the compromise as *“the least bad possible solution”*. For the Belgian Prime Minister, Charles Michel, *“the climate challenge must be a lever for economic development, to stimulate jobs, to stimulate investment”*.

The Prime Minister of the Netherlands, Mark Rutte, stressed that it is *“important to implement the Paris Agreement”*, and to aim for climate neutrality in 2050.

“We'll talk about it again in June”, said Chancellor Angela Merkel, and reassured that many Member States will participate in the climate summit convened by the Organisation of United Nations in September to raise global ambition.

21764/Press Release – 2019.03.04 & 22

Circular Economy

All measures of EU Circular Economy Action Plan are either adopted or on table

All the foreseen actions in the EU's the Circular Economy Action Plan adopted in December 2015 - 54 in total - have been implemented or are in the process of being implemented, according to the report on the plan implementation published by the European Commission on 4 March.

This progress ranges from the EU's first ever 'plastics' strategy regarding the new rules on the limitation of single-use plastics products that pollute the oceans, the modernisation of waste management rules, the recommendations made by the platform to support the financing of the circular economy, the €10 billion of public funding for innovation for 2016-2020, the implementation of the 2016-2019 'eco-design'

work plan and the methods for calculating the environmental footprint of products (PEF) and organisations (OEF).

The report shows that, in 2016, the sectors concerned employed more than 4 million people, an increase of 6% compared to 2012. The transition to the circular economy has also provided new business opportunities by creating new business models and developing new markets. Repair, reuse or recycling activities generated nearly 147 billion euros of added value in 2016 for a total investment of 17.5 billion euros.

While this report is “very encouraging and shows that Europe is on the right track in creating investments, jobs and new businesses”, according to Commission Vice-President Jyrki Katainen, more remains to be done to complement this action plan and serve the objectives of sustainable growth.

According to the Commission, sectors with a high environmental impact and significant potential for circularity, such as information technology, electronics, mobility, mining, food and drink or textiles could be explored for a more circular holistic approach, such as that adopted for plastics.

The results of this report were discussed by all actors in the circular economy during the stakeholder conference on 'Successes and New Challenges' organised by the Commission and the European Economic and Social Committee (EESC) on 6 and 7 March in Brussels.

Recycling rates and use of recycled materials growing in the EU

In 2016, the EU recycled almost 55% of all waste, excluding major mineral waste (compared to 53% in 2010), while the recycling rate for plastic packaging has almost doubled since 2005, according to statistics published by Eurostat on 4 March.

The recovery rate for construction and demolition waste was 89% (2016), the recycling rate for packaging was over 67% (64% in 2010) and the recycling rate for plastic packaging was over 42% (compared to 24% in 2005). In 2017, the recycling rate for municipal waste was 46% (compared to 35% in 2007). For waste electrical and electronic equipment, which contains valuable materials that can be recovered in the EU, the rate stood at 41% in 2016. On average, however, only 12% of the materials used as a resource came from recycled products and recovered materials.

21765/Press Release – 2019.03.04

Waste Framework Directive

Glass for Europe calls for recognition of flat glass off-cuts

Glass for Europe has called on Member States to take the necessary measures for a full recognition of flat glass off-cuts as by-products.

The flat glass off-cuts meet all the criteria to be considered as a by-product set in the Waste Framework Directive.

Glass for Europe aims to encourage a full recognition of flat glass off-cuts and facilitate the move to a more circular economy.

Flat glass off-cuts are the result of the transformation process of flat glass to obtain products such as the insulating glass units and automotive glazing.

It has been estimated that between 750,000 and 1 million tonnes of flat glass off-cuts are generated every year in the EU.



The precious resource can be recycled in the flat glass manufacturing process and deliver reduced energy consumption and CO2 emissions.

In the position paper 'Making Circular Economy a reality: Recognition of flat glass off-cuts as by-products', the European flat glass association highlights that the transport and recycling of flat glass off-cuts are made more difficult and costlier when these are considered as waste.

The Waste Framework Directive, which is currently under implementation at the Member States level, clarifies that objects such as flat glass off-cuts shall be considered as by-products.

Read position paper on <https://glassforeurope.com/flat-glass-off-cuts-as-by-products/>

21766/Press Release – 2019.03.08

Energy Efficiency Directive Technical Amendments for Brexit

On Monday 4 March, the EU Council of Ministers adopted without debate the proposal amending Directive 2012/27/EU on energy efficiency and Regulation 2018/1999 on the governance of the energy union, to take into account the future withdrawal of the United Kingdom from the EU. Due to *Brexit*, it is necessary to make technical amendments to the projected EU energy consumption figures for 2030, in order to reflect the Union with 27 Member States.

21767/Press Release – 2019.03.04

EU Council Position with Drinking Water Directive Recast

On 5th March, European Environment Ministers adopted a general approach (political agreement) on the proposal to recast the 1998 EU Directive on water for human consumption with the intention of updating water safety parameters and facilitating access to drinking water for all; this is in response to the Right2water citizens' initiative. For the most part, the text aligns the parameters with those of the WHO in respect of substances such as lead and some endocrine disruptors (bisphenol A and beta-estradiol). It improves the transparency of information to be given to consumers about water supplies and leakage, but this information will not be mandatory. It also provides for the

provision of drinking water in public places – leaving the choice of measures up to Member States – and minimum hygiene requirements for products and materials that come into contact with water.

The Romanian Minister of Water and Forests, Ioan Deneş, has welcomed this step forward in protecting human health and the environment and the right to access water.

Austria voted against it. Estonia abstained, due to uncertainties related to the implementation and cost of the new provisions on minimum hygiene standards for materials and products coming into contact with water – the new Article 10a – in the absence of an impact study.

The European Commission has reserved its final position, believing that the agreement reached does not allow the text to be implemented as it stands, while regretting the lower level of transparency of consumer information compared to the original proposal. The agreement sets out the hygiene requirements for these products and materials and will be laid down by means of implementing acts. These would include:

- European positive lists of compositions or starting substances authorised to be used for manufacturing of materials;
- common methodologies for testing and accepting such substances or compositions;
- procedures and methods for testing and accepting materials in their final form;
- the procedure for applications to include or remove compositions from the European positive lists;
- marking of products in contact with drinking water, indicating conformity with the drinking water directive.

The European Commissioner for the Environment, Karmenu Vella, has indicated that the Commission would have preferred a higher level of health protection and deplored the fact that Member States had *“refused to accept common procedures for standardised testing of materials needed to facilitate their placing on the market, preferring a completely new ad hoc system that results in partial harmonisation”*. A declaration was filed in the minutes to express these concerns put forward by the Commission.

“We still have a lot of work to do. My services will be at your disposal and at that of the future Parliament in order to reach an agreement. We must set up this system together, otherwise, it will not work”, the Commissioner concluded. Work will therefore continue on the technical level to ensure the future directive is operational.

21768/Press Release – 2019.03.05

SOCIAL ISSUES

3rd Revision of Directive on ‘Carcinogens and Mutagens at Work’

MEPs gave the green light (586 in favour, 10 against, 26 abstentions) on 27 March, during the plenary session in Strasbourg, to the interinstitutional agreement reached at the end of January over the 3rd revision of the directive on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.

As a reminder, the Directive reduces occupational exposure limit values in respect of 5 agents considered dangerous to health, namely: cadmium, beryllium, arsenic acid, formaldehyde and 4,4' methylene bis. The co-legislators have introduced a whole series of differentiated implementation dates (8 years for cadmium, 7 years for beryllium, 4 years for arsenic acid and 5 years in some cases for formaldehyde.

21769/Press Release – 2019.03.27

Unemployment Rates

The euro area seasonally-adjusted unemployment rate was **7.8%** in **January 2019**, stable compared with December 2018. This remains the lowest rate recorded in the euro area since October 2008. The EU-28 unemployment rate was **6.5%** in January 2019, down from 6.6% in December 2018. This is also the lowest rate recorded in the EU28 since January 2000.

Eurostat estimates that 16.222 million people in the EU28 were unemployed in January 2019, a decrease by 56,000 in the EU28 and by 23,000 in the euro area compared with December 2018.

Czechia	2.1%	Ireland	5.3%
Germany	3.2%	Belgium	5.6%
Hungary (Dec.)	3.6%	Lithuania	6.2%
Netherlands	3.6%	Slovakia	6.2%
Poland	3.7%	Sweden	6.2%
Malta	3.8%	Portugal	6.7%
Romania	3.9%	Finland	6.7%
UK (Nov.)	4.0%	Latvia	7.3%
Estonia (Dec.)	4.2%	Cyprus	7.4%
Bulgaria	4.8%	Croatia	7.6%
Austria	4.8%	France	8.8%
Luxembourg	4.9%	Italy	10.5%
Denmark	5.0%	Spain	14.1%
Slovenia	5.2%	Greece (Nov.)	18.5%

Elsewhere

USA	3.8%	Russia	4.9%
Canada	5.8%	Brazil	12.0%
Japan	2.5%	Australia	4.9%
Switzerland	2.7%	India	6.1%
Turkey	13.5%	China	3.8%

21770/Eurostat Press Release – 2019.03.01

GENERAL ISSUES

EU 2050 Strategy



European Council

European Environment Ministers ready to move forward with ambitious and socially just EU 2050 strategy.

European Environment Ministers welcomed the vision of the long-term strategy the EU will have to adopt by 2020 in order to make a successful transition to a climate-neutral European economy by 2050.

Differences emerged between the most ambitious countries, such as Sweden, Luxembourg, France and Portugal, which favoured only the two most ambitious scenarios for achieving zero net emissions in 2050, and the Central and Eastern European countries, which stressed above all the need to preserve the competitiveness of industry and ensure a fair and equitable transition for all, based on solidarity between Member States and taking into account the social impacts of transition. However, the Commission's approach in its Communication '*One Planet for All*' was appreciated by all countries.

According to the ministers, this is a useful contribution to enable the EU to prepare the necessary transformation in all sectors of the European economy, to send a clear signal to investors, to mobilise all available European funds to support the transition, as well as the private funds needed to meet the need for massive investment in innovation, research and clean technologies.

The Romanian Minister of the Environment, Grațiela Leocadia Gavrilescu, who chaired the debate, summarised the main trends that emerged.

- For all Ministers, it is important that the EU has a long-term strategy to reduce its greenhouse gas emissions in line with the objectives of the Paris Climate Agreement. The communication provides an excellent basis for further work and everyone welcomed the holistic approach and the broad debate.
- Integrating climate neutrality is a necessity for the coherence of EU policies, in particular in the fields of energy, transport, competitiveness, agriculture, research and finance.

- Conditions must be created for transition support and access to all financial instruments (innovation funds, modernisation funds in particular) to create incentives for the innovations required to develop clean technologies.
- Several Member States stressed the need for complementarity between the EU's future long-term strategy and national Energy/Climate plans.
- Some stressed the importance of technological neutrality, others on secure and sustainable energy.
- Many Member States called for national and regional specificities to be taken into account.
- Some insisted on a level playing field, especially in coal-dependent regions.
- All highlighted the potential for economic growth and job creation, particularly in the construction and transport sectors.
- Many ministers stressed the international dimension, international cooperation and the importance of global progress.

For **Luxembourg**, *"1.5° must be the EU benchmark and zero net emissions must be achieved by 2050 at the latest - a target to be confirmed as soon as possible in 2019 by the Heads of State,"* the Minister said.

Poland, for its part, considers the eight scenarios set out by the Commission to be ambitious, makes security of energy supply a priority, wants an analysis for those sectors and regions where transformation will be particularly painful and asks that *"national energy/climate plans should be the basis for assessing the overall level of reduction to be examined by the European Council"*.

The European Commissioner for the Environment, Karmenu Vella, recalled that, for regions heavily dependent on coal, the Commission is ready to support the Member States.

The summary of the discussions of the Environment Ministers, their colleagues in charge of Energy and Competitiveness will be the subject of a letter to the March European Council, which should provide guidance for the EU's future strategy. Discussions will continue in other Council formations until June.

21771/Press Release – 2019.03.05

EU Internal Market

On 22 March, the Heads of State or Government asked the European Commission to present a **long-term vision for an "assertive" industrial policy for the European Union, accompanied by concrete measures, by the end of 2019, instead of March 2020.**

Consequently the strategy awaited *"should address the challenges European industry faces, touching upon all relevant policy areas"*, say the conclusions adopted by the 28 Member States. A provisional version of the text set the deadline at March 2020.

This transversal industrial strategy will have to face several concrete challenges such as the digitisation of the economy, the rise of artificial intelligence and the strategic question of the deployment of the 5G network in the light of recent suspicions about Chinese interference in European security.

As such, the issue of the global competitiveness of industry in key technologies should be addressed by encouraging risk-taking and investment in innovation.

Austrian Chancellor Sebastian Kurz reiterated how much he deplored the EU's difficulties in reaching the highest level of competitiveness in the field of new technologies, highlighting the dominance of the US GAFA.

In their conclusions, the European leaders also stress the need to "*strengthen*" and "*deepen*" the internal market, focusing on the services economy, particularly digital services, and removing "*unjustified*" obstacles. They advocate a deepening of the unions of capital markets and energy markets, as well as the establishment of a "*fair and efficient*" taxation system. The Commission is invited to present a long-term action plan to improve the implementation of Single Market rules by March 2020.

EU competition rules can also be a lever for the emergence of European champions capable of competing internationally. As the draft text envisaged, the European Council's conclusions indicate that the Commission will identify by the end of 2019 how to fill the "*gaps*" in EU competition law, "*in order to address the distortions created within the internal market by foreign state ownership and financing through state aid*". This reference echoes the Franco-German manifesto of February in favour of a European industrial policy, unveiled shortly after the Commission's refusal to approve the proposed merger between *Alstom* and *Siemens*.

If a discussion has taken place at the highest political level, it is therefore not a question of revolutionising the rules of competition law at this time. The Franco-German document reportedly received a somewhat frosty response from some Member States, in particular Scandinavian ones.

In front of the press, Mark Rutte, the Dutch Prime Minister did not oppose the emergence of European champions, but he said he "*preferred*" such a dynamic to be facilitated by competition, and not by the granting of State aid.

The issue of support for industry and the internal market has been latent for several years, particularly at ministerial level where the Competitiveness Council regularly calls for a holistic strategy for 2030 or even 2050. By the end of 2018, 18 Member States had launched an appeal of this kind. Pressure has recently increased even further with seventeen Member States calling for a set of priorities to strengthen industry and the internal market.

21772/Press Release – 2019.03.22

BREXIT Developments

1. British MPs Validated a Postponement of BREXIT

British MPs again rejected very clearly (391 votes against, 242 in favour) the agreement on an orderly exit from the United Kingdom of the European Union defended by Theresa May on 12 March, inflicting a second defeat on her despite the additional assurances she had negotiated the day before in Strasbourg with the European Commission.



The next day on 13 March, after they rejected by a narrow majority of 4 votes (312 votes to 308) the possibility of a no-deal Brexit, they rejected, by 321 votes to 278, the scenario that the UK could leave the European Union in a disorderly manner on 29 March and under any circumstances.

And finally on 14 March, British MEPs voted in favour of postponing the UK's exit from the EU and extending the deadlines provided for in Article 50 of the EU Treaty with 412 votes to 202.

Just before this vote, British MPs overwhelmingly rejected, by 334 votes to 85, an amendment calling for a second referendum, tabled by the Independents Group (Labour and Conservatives having defected from their respective groups).

21773/Press Release – 2019.03.12, 13, 14

2. MPs Indicative Votes to Find a Majority

On 27 March, Mrs May promised Tory MPs to leave her position if the House of Commons were to approve the draft withdrawal agreement. She assured them of this when the House was to hold further indicative votes in the evening. Speaker of the House, John Bercow, selected eight options (out of 16) on which the British Parliament to vote for information. These options range from the revocation of Article 50 to the adoption of a model for future relations between the EU and the United Kingdom of the 'EEA' or 'EFTA' type, a permanent customs union, or the choice of a no-deal Brexit.

How MPs voted

	For	Against	Defeated by
Confirmatory second referendum	268	295	27
Customs union	264	272	8
Labour's Brexit plan	237	307	70
Common Market 2.0	188	283	95
Revoking Article 50 to avoid no deal	184	293	109
No-deal exit on 12 April	160	400	240
Malthouse Plan B	139	422	283
EFTA and EEA membership	65	377	312

- The proposal which came closest to commanding majority support was a cross-party plan - tabled by former Conservative chancellor Ken Clarke - for the whole of the UK to join a new customs union with the EU to ensure tariff-free trade after the UK's exit.
- Eight Conservatives voted for a referendum to endorse the deal, the proposal which secured the most affirmative votes. Labour controversially whipped its MPs to back the proposal but 10 shadow ministers abstained and Melanie Onn quit her job to vote against.
- Labour's own alternative plan for Brexit - including "close alignment" with the single market and protections for workers' rights - was defeated by 307 votes to 237.
- Five other propositions - including backing for a no-deal exit, the so-called Common Market 2.0 plan, a separate proposal to remain in the European Economic Area and one to stop the Brexit process by revoking Article 50 - all failed to secure the backing of a majority of MPs.

The British media reported rumours that a third 'meaningful vote' on the agreement could be called on Friday 29 March.

21774/Press Release – 2019.03.27

3. EU-27 Approve a Delay until 12 April or 22 May

European leaders formally adopted on 22 March the decision extending the negotiation period on *Brexit* as provided for in Article 50 of the Treaty.

Under an agreement agreed between the EU and UK, the British withdrawal from the European Union has now been postponed:

- to 22 May if the agreement allowing for an orderly *Brexit* is passed in the House of Commons or;
- to 12 April if Prime Minister Theresa May once again fails to get the agreement approved.

In the event of a failure, the British Government will have to inform Europe what it intends to do before 12 April. In particular, it must indicate whether it intends to hold European elections in the UK, which is an essential condition for requesting a longer extension period of Article 50. If this is not the case, the prospect of a no-deal *Brexit* will inevitably increase.

Although no specific details were given by the Twenty-Seven, the potential 'long' extension to the discussions should ideally be a 'year'. This would allow the European elections to take place, new heads of European institutions to be appointed, and the post-2020 multiannual financial framework to be tied down.

But here, once again, London will need to have a credible plan and a genuine new strategy regarding bilateral relations with the EU, relations that are potentially closer than those envisaged in the declaration on future relations that supplements the British withdrawal agreement.



European Council

Truly the situation has not changed fundamentally. At this stage, only the official date of the *Brexit* is postponed from 29 March to 12 April, if the agreement is not ratified by the British Parliament and if the United Kingdom does not intend to participate in the European elections, or to 22 May if the parliamentary vote is positive.

"All options remain open", admitted Donald Tusk, citing a *"deal, a no-deal, an extension of time limits or a revocation of Article 50"*.

MEPs welcomed the choice left to London by the Twenty-Seven on 27 March between adopting the agreement allowing an orderly Brexit by 22 May at the latest and a change in strategy by 12 April.

21775/Press Release – 2019.03.22 & 27

4. UK Customs Duties in Case on 'No-Deal'

On 13 March, the British government published the customs duties it would apply to European products if they left the EU without agreement. In this scenario, and for one year from 29 March at 11:00 p.m., British companies would not pay duties on 87% of imports of goods in value coming from Ireland.

Only 13% of these imports would be subject to duties or tariff quotas. This would be the case, *inter alia*, for certain agri-food and fisheries products, finished vehicles, bananas and raw cane sugar.

This initiative aims to minimise the impact of a *no deal* on UK consumers and producers. Indeed, in the event of a *"no deal"*, London would be obliged to apply to Ireland and all products originating in the EU, which previously entered duty-free, the same tariffs as those it applies to its World Trade Organisation (WTO) partners with whom it does not have a specific trade agreement.

However, this British plan would violate WTO rules in that it runs counter to the principle that all members of the multilateral organisation should be treated in the same way (*most-favoured-nation* clause).

Margaritis Schinas, the Commission's spokesperson, said the institution *"would carefully analyse"* these plans, in particular their compatibility with WTO rules *"and the EU's rights arising from them"*. He suggested that the reciprocal would not apply to British products, which would be subject to customs duties upon arrival in Ireland, in line with EU tariffs at the WTO. *"This is essential if the EU is to remain a reliable trading partner, in particular by respecting internationally recognised rules"*, he concluded.

21776/Press Release – 2019.03.14

5. European Parliament adopts measures in case of no-deal Brexit

The European Parliament March plenary have adopted a series of safeguard measures in key policy areas to try and manage disruption for citizens and businesses in the EU27 in the event of a no-deal Brexit.

These include transport, education, territorial cooperation, social policy and fisheries.



- In the area of **education**, the Members of the European Parliament endorsed the provisional agreement on the continuation of ongoing learning mobility activities under the Erasmus+ programme.
- In the area of **territorial cooperation**, the European Parliament endorsed the continuation of the territorial cooperation programmes PEACE IV (Ireland-United Kingdom) and United Kingdom-Ireland (Ireland-Northern Ireland-Scotland) without any amendments to the Commission's proposal which aims to allow the continuation, at least until the end of the current 2014-2020 programming period of the two programmes. The proposal would do this by providing that funding to Northern Ireland (and the parts of western Scotland covered by the United Kingdom-Ireland cooperation programme) would continue as provided for in the INTERREG Regulation.
- In the **transport sector**, the Parliament approved a series of temporary measures to guarantee uninterrupted service between the UK and the EU after Brexit with respect to road freight and bus and coach services, UK airline services to the EU and aviation safety certificates. At the Commission's request for an urgent procedure, the Plenary adopted the Commission's text on rail safety authorisations.
- In addition, the European Parliament endorsed the provisional agreement on contingency measures in the area of **social security**. The purpose is to safeguard that EU 27 and UK nationals, who moved freely within the Union, will continue to benefit from their social security rights acquired before UK's withdrawal from the Union. The measures are limited in time and scope and will be adopted unilaterally by the EU. The regulation will enter into force only if the UK leaves the Union with no withdrawal agreement in place.
- In the **fisheries sector**, the Parliament, following a request for an urgent procedure, adopted the Commission's proposals on rules relating to the European Maritime and Fisheries Fund by reason of the UK's withdrawal from the Union and on fishing authorisations for Union fishing vessels in United Kingdom waters and fishing operations of United Kingdom fishing vessels in Union waters. The first contingency proposal allows fishermen and operators to receive compensation for the temporary cessation of fishing activities. While the second proposal aims to ensure that the EU is in a position to grant UK vessels access to EU waters until the end of 2019, on the condition of reciprocal access. It also provides a simplified procedure to authorise UK vessels to fish in EU waters and EU vessels to fish in UK waters, which would be limited to 2019.

21777/Press Release – 2019.02.28

Inflation Rate

Latest Eurostat figures show that the annual inflation rate was **1.5% in February 2019 in the Euro area**, up from 1.4% in January. **The EU28** annual inflation was **1.6% in February 2019**, also up from 1.5% in January.

The largest contribution to the annual euro area inflation rate came from services (+0.61%), followed by food, alcohol & tobacco (+0.44%), energy (+ 0.35%), and non-energy industrial goods (+0.09%).

Elsewhere

USA	1.5%	Russia	5.2%
Canada	1.4%	Brazil	3.9%
Japan	0.3%	Australia	1.8%
Switzerland	0.6%	India	2.6%
Turkey	19.7%	China	1.5%

Ireland	0.7%	Germany	1.7%
Greece	0.8%	UK (01-2019)	1.8%
Croatia	0.8%	Estonia	1.9%
Cyprus	0.8%	Sweden	1.9%
Portugal	0.9%	Belgium	2.0%
Denmark	1.1%	Lithuania	2.0%
Spain	1.1%	Luxembourg	2.1%
Italy	1.1%	Slovakia	2.3%
Malta	1.3%	Bulgaria	2.4%
Finland	1.3%	Czechia	2.4%
Slovenia	1.3%	Netherlands	2.6%
Poland	1.3%	Latvia	2.8%
Austria	1.4%	Hungary	3.2%
France	1.6%	Romania	4.0%

21778/Eurostat News Release – 2019.03.15

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GLASS NEWS

FLAT GLASS

Glass Companies

AGC



Inauguration of anechoic chambers of AGC Glass Europe in Gosselies

Two anechoic chambers were inaugurated on 15 March by the Minister-President of Wallonia, Willy Borsus, at the AGC Technovation Centre (R&D Centre) at Gosselies (Charleroi, Belgium) in a ceremony attended by numerous personalities from the worlds of politics and industry together with representatives of the press. The new facility will be used for developing and testing AGC technology for windows with built-in antennae, in response to the growing demand for connectivity.



From left to right: AGC Corporate Representative, *Jean-Marc Meunier* COO & President at AGC Automotive Europe, *Willy Borsus* Minister-President of Wallonia, *Philippe Bastien* Regional President for Europe, Building & Industrial Glass Company, *Jean-François Heris* Corporate President of Building & Industrial Glass Company.

Anechoic chambers (see next picture) are facilities that completely cut off external electromagnetic waves to measure and evaluate an electronic device's reception of electromagnetic waves. Inside the anechoic chamber, the electromagnetic waves emitted from a "Connected" device are measured.



The walls of the chambers are covered by material that absorbs electromagnetic radiation and prevents it from bouncing back off the walls (hence "anechoic"). The large chambers hold all the necessary equipment used to measure the transmission and reception of electromagnetic waves, for communication between vehicles, between vehicles and their surroundings, and through the windows of buildings. This will become increasingly necessary in the future with the emergence of 5G and self-driving vehicles. The investment of around 10 million euros, with support from the Walloon government, will also serve as a technology platform for various players involved in the challenge of connectivity in Wallonia, including the public authorities together with various industries such as transport, construction, telecommunication etc. The new facility will create around 20 jobs.

AGC Established a Global Tri-polar R&D Framework for Automotive On-glass Antennas

Contributing to "Connected" Cars in the Age of Internet of Things (IoT)-

AGC President, Takuya Shimamura, announced that the anechoic chambers constructed in Gosselies (Belgium) for the development of automotive on-glass antennas were inaugurated on March 15, 2019. With the completion of this R&D facility, AGC has established a tri-polar R&D framework for automotive on-glass antennas in Japan, the United States, and Europe for the first time in the glass industry.

In the future mobility society, cars will be equipped with devices such as cameras, LiDARs, and sensors. Cars will need to be both connected to each other and have communicative functionality that delivers V2X (Vehicle to Everything), connecting cars to all other things. In these circumstances, automotive glass is playing an increasingly important role as an antenna/gateway for radio wave transmission and reception.

For designing and positioning an automotive on-glass antenna to achieve high-speed communications such as broadcasting services and 5G without spoiling the car design, advanced simulation technologies and highly precise measuring technologies are required from the product designing and development phase.

AGC has been an industry leader in the research, development, and production of automotive on-glass antennas for over 40 years. AGC also designs automotive on-glass antennas in its anechoic chambers in Japan and the United States and provides customers with on-glass antennas.

By completing the anechoic chambers in Europe, AGC has established a framework for accelerating the research and development of antennas to meet the demand for "connected" cars in the age of IoT(3) and supporting its customer's automobile development on a global scale.

The AGC Group places the field of mobility as a strategic business as part of its management policy, AGC plus. The Group will utilize the strengths of its anechoic chambers in the three bases of Japan, the United States, and Europe to contribute to the realization of "connected" cars.

21779/Press Release – 2019.03.15 & 18

Saint-Gobain

1. Saint-Gobain will soon be setting up a **manufacturing unit in Visakhapatnam (India, north of Andhra Pradesh)**. The company will be establishing the unit at Atchyuthapuram with an estimated cost of 20 billion INR.

J. Krishna Kishore, the Chief Executive Officer (CEO) of the Andhra Pradesh Economic Development Board (APEDB), said that Saint-Gobain currently has a modern glass manufacturing unit at Sri Perambudur near Chennai in Tamil Nadu. Stating that a similar model will be replicated in Visakhapatnam, Mr. Kishore said that in due course, the capacity of the Visakhapatnam unit may be increased to exceed that of the Chennai unit. The manufacturing unit of Saint-Gobain in Visakhapatnam would offer direct employment to nearly 1,300 people and indirect employment to about 500 people.

21780/Press Release – 2019.03.15

2. As expected, Saint-Gobain **results for the second half 2018** show a significant improvement, benefiting from broadly supportive markets, a strong pricing dynamic and the settlement of industrial issues that had weighed on the Group's profitability in the first half," said Mr. de Chalendar, Chairman and Chief Executive Officer of Saint-Gobain (pictured). "For 2019, in the context of a market which, despite some uncertainties, should be favourable overall, we are targeting a further like-for-like increase in operating income.

"As part of the acceleration of our portfolio rotation program announced at the end of July and the reorganization presented in late November, the Group has launched a divestment program representing sales of more than 3.0 billion EUR by the end of 2019. The divestment process for the Distribution business in Germany is well under way. The new strategic review currently in progress will lead to an additional dynamic of divestments and acquisitions."

Mr. Bazin, Chief Operating Officer of Saint-Gobain (pictured), added, "The new organization is being swiftly put into place and the teams are fully committed to unlocking additional growth and profitability. It is leading us to assess our positioning country by country and to focus the Group's strengths by optimizing the allocation of its resources in its core industrial and distribution businesses, with solid competitive positions, strong synergies and a profitable growth outlook. We therefore have full confidence in our program to achieve 250 million EUR of additional savings by 2021."



The Group's 2018 sales total was 41,774 million EUR, up 2.4 percent on a reported basis and up 4.4 percent like-for-like. Organic growth was driven both by prices (up 3.0 percent), accelerating in the second half (up 3.5 percent), and by volumes (up 1.4 percent), progressing in all regions. All Business Sectors delivered significant price increases amid continued raw material and energy inflation.

The acceleration of the Group's transformation continues, with the new organizational structure in place as of January 1, 2019. The Group has reviewed its asset impairment tests. In this context, given the current situation and the downward revisions to the outlook for certain businesses and countries, impairment amounts to 2.0 billion EUR and mainly concerns distribution in the UK, Pipe, Lapeyre and distribution in Germany.

2019 outlook

The Group will continue its disciplined approach with regard to its free cash flow and its financial strength. In particular, it will maintain:

- its focus on sales prices amid continued inflationary pressure on costs;
- its cost savings program, with the aim of unlocking additional savings of around 300 million EUR (calculated on the 2018 cost base), as well as more than 50 million EUR in 2019 as part of the "Transform and Grow" program;
- its capital expenditure program close to the 2018 level, with a focus on growth capex outside Western Europe and also on productivity and continued digital transformation;
- its commitment to invest in R&D to support its differentiated, high value-added strategy;
- its focus on high levels of free cash flow generation.

21781/Press Release – 2019.03.27

Pilkington



Pilkington Optiwhite™, an exceptional product increasingly in demand across Europe, is produced by the Pilkington Italia plant in Venice for 18 months.

This recently renovated facility now produces Pilkington Optiwhite™ an extra-clear glass which, thanks to its excellent neutrality, guarantees outstanding transparency and therefore improved performance in a multitude of applications.

You can't say that glass is transparent until you've experienced Pilkington Optiwhite™. In architecture, where glass is often used to provide greater luminosity, the extraordinary transparency of Pilkington Optiwhite™ maximises transmission of natural light, significantly reducing the need for energy-consuming interior lighting.

In furnishing, where the traditional tint of common float glass may alter colour appearance, Pilkington Optiwhite™ aesthetically enhances the objects' true value and design – thanks to its exceptional colour neutrality.

In window dressing, while the glass provides a necessary degree of protection, it is also an undesirable obstacle when viewing the objects on display.

The superb transparency of the extra-clear Pilkington Optiwhite™ glass provides a clarity that enhances their presentation.

In many cases, for the same reasons, it is also the best choice for museums and art galleries.

To obtain this extraordinary product, numerous factors are essential: raw materials, a dedicated technology and specific quality controls.

The raw materials, which must be pure, of selected quality, with a low content of iron oxides, require skilful and precise processing. This is to avoid the traditional colouring of float glass and the reduced transparency of ordinary glass.

To target the colour rendering index and keep it stable during the whole production, the melting furnace must be precisely calibrated and there has to be total control of the melting process, where even slight variations can influence the final colour.

Finally, in order to guarantee the absolute consistency of colour that is required by customers, it is necessary to carry out continuous process monitoring and specific quality control on the glass in the laboratory.



Applications

Because of its transparency and neutrality, Pilkington Optiwhite™ is appreciated everywhere. For example, it is increasingly used as a substrate for a wide range of glass for façades (solar control and thermal insulation), for interior furnishing applications, and for all projects that require high transparency.

It is the glass that is coated with Pilkington OptiView™ anti-reflective coating for use in shop windows and museums to enhance goods for sale and exhibited works of art.

This extra-clear substrate is also widely used in the furnishing sector, where despite being enamelled or satin-finished, its aesthetic aspect remains unchanged.

In the same way, through specific processes, such as screen printing or thermoforming, it is used to create a range of items, such as tables, lighting designs and bathroom furniture, and the trend is clearly growing.

21782/Press Release – 2019.03.26

Vitro



Vitro, S.A.B. de C.V., the leading glass producer in North America, announced February 27 that the Board of Directors approved the investment of 60 million USD in new technologies. The Executive Team will be working over the next 18 months to implement these investments according to the Board's guidelines.

The investments will be focused on North America to reinforce Vitro's market leadership in automotive glass, supplying both original equipment manufacturers and aftermarket customers.

"The auto industry is being disrupted," said Adrian Sada, CEO of Vitro, who continued, "and our investments include a series of technologies aimed at aligning our capabilities to become the supplier of choice for advanced auto glass solutions in windshields, coatings, laminated sidelites and sunroofs."

Over the past four years, Vitro Automotive invested more than 78 million USD across operations in state-of-the-art process capabilities. These investments firmly position Vitro Automotive at the pinnacle of innovation to serve the auto industry.

"SUV growth, electrification, augmented reality displays, connectivity, emissions regulation, safety, acoustics, weight reduction, advanced sensors, advanced antennas, energy-efficient technologies and new mobility models are the disruptors that create the need for new solutions in windshields, windows and sunroofs," Salvador Minarro, President of Vitro Automotive Glass said.

Site locations for new investments are being finalized.

21783/Press Release – 2019.03.04

Fuyao Glass Rus



Fuyao Glass Rus Co., Ltd plans to invest 300 million RUB in a new production line and production automation projects in the Kaluga plant, Russia. According to the company's forecast for 2019, auto glass sales are expected to grow by 20 percent, with plans to develop both the domestic Russian market and export.

According to Xie Ji, deputy general director of Fuyao Glass Rus, the Kaluga plant is the largest foreign project of the Chinese group Fuyao Glass. The plant produces a wide range of automotive glass, the main Russian customers are factories of Volkswagen, Volvo, Nissan, Hyundai, Renault, Peugeot, Ford and others. It also cooperates with GAZ and UAZ. **Currently, more than 50 percent of the glass produced at the Kaluga plant is exported, mostly to Spain, Belgium, France and Italy.**

Mr. Xie Ji said, "The Fuyao Group intends to develop the local production, using local suppliers. Localization is our strategic priority, we are also focused on increasing the level of automation".

In 2018 Fuyao Glass Rus invested about 1 billion RUB in new equipment: with installation and launch of a new continuous production line of windshields – a hot-pressing line using advanced technology and a resulting capacity of 2.5 million of windshields per year.

21784/Press Release – 2019.03.08

Miscellaneous

Tvitec

Hornos Pujol and Tvitec sign an agreement to develop the most advanced curved laminate production lines in the market.



Mr. Joaquín Pujol, left, and Mr. Javier Prado Ovalle, right

The company Hornos Industriales Pujol, based in Sant Feliu de Llobregat (Barcelona), and Tvitec, based in Cubillos del Sil (León), have recently signed a commercial collaboration agreement to launch the highest quality curved glass solutions within the world construction market.

Pujol will exclusively design for Tvitec an EVA and HST laminate oven measuring 12 by 3.21 metres. We are talking about the HST LAM Multichamber Super Jumbo model, capable of operating at the same time with two 6-metre chambers. Pujol will fully allocate its cutting-edge technology and its R+D+i programs for the production of this double line for curved glass in order to allow Tvitec plant be able to supply the most advanced products, both technically and aesthetically for the construction of singular projects.

The manufacture of curved pieces will allow Tvitec to attend globally all the architectural projects in which the enclosures of large constructions combine the use of flat and curved units. The new oven will allow the processing of curved laminated glass up to 12 metres in length, designed for the use or application of EVA and a stronger butyral to guarantee safety laminate conditions in the most aggressive environments, that will allow to meet the customer's requirements, paying particular attention to the type of medium in which each product is developed.

Without discrepancy it is possible to subject the HST controls to any type of tempered glass, minimizing the possible impact of nickel sulphide on hypothetical breaks. The double oven chamber will result in versatility in manufacturing and of course in productivity, making it possible to work on pieces of less than six metres at the same time.

For both the lamination and the double glazing of the curved glass manufacturing, the engineering departments of Pujol and Tvitec have joined forces to design an unprecedented system for transferring the pieces. The new laminate oven is part of the investment of 20 million EUR that Tvitec has allocated to become an integral transformer of high-performance glass.

21785/Press Release – 2019.03.27

Glass Protects Wood

The new building of the **Erste Group** in Vienna is a spectacular complex featuring a double facade, where the outer glass facade protects the wooden windows from weathering.

The new building of the Erste Group in Vienna, on the grounds of the former South Station, was designed by **Henke Schreieck Architekten** and is a spectacular building complex. Four buildings with curved glass facades and up to ten storeys enclose light-flooded interiors and public spaces. The project was awarded a platinum certificate by the Austrian Society for Sustainable Real Estate (ÖGNI). // © Henke Schreieck Architekten, Wien.



An important design feature of the new building near Vienna's main station is the glass facades, revealing the wooden windows behind them separating the offices from the outside. This is a double facade, where the outer glass facade protects the wooden windows, fronted by a shading system, from the effects of weathering. The wooden frames were required as an ecological component to obtain sustainability certification, as were the controlled ventilation system and wooden furniture for the 4,500 employees.

According to window manufacturer Katzbeck, architects Henke Schreieck commissioned the custom-designed windows for this project that were then subjected to various tests for air permeability, sound and noise insulation. The manufacturer partnered with the HFA (Holzforschung Austria) (Austrian Forest Products Research Society) in Vienna. The total 7,321 window frames (in oiled larch) measuring 2.40 m to 3.40 m high, were delivered according to building progress. The glazing was mounted into the frames on site by a steelwork fabricator and the frames then installed into the buildings. Due to the curved facade almost all windows had different dimensions. Every office has controllable, room-height ventilation openings.



Assembly wooden windows // © Henke Schreieck Architekten, Vienna
“Initially, we planned an aluminium frontage,” said Peter Schober, Head of Construction Engineering and Windows Division at the HFA. But other arguments prevailed: Wood was the main contender due to the certification requirements. The builder initially had reservations about fire safety and the durability of wood. Ultimately, a joint visit to a bank building in Rosenheim featuring a wood facade managed to convince all stakeholders. What is special, however, is the position of the glass facade, which led to an unusual installation method for the windows.



Façade view Erste Group Wien // © Henke Schreieck Architekten, Vienna

As Mr. Schober said, “In the course of the installation process there was a discussion about how in the case of metal facades used in double facades the inner metal windows are supposed to be mounted first and the external glass elements later. But in some cases, this would have meant directly exposing the wooden windows to weathering so the installation process for the facade had to be reversed: first the outer panes, then the inner windows. Changing the order resulted in a cost-effective assembly. The windows were delivered by crane and stored floor by floor. Then the impact panes were mounted first followed by the installation of the windows from the inside.”

In this context, the HFA was responsible for the construction detail that made air-tight installation of the windows possible in the first place. Because each window has connections at the top, bottom and sides, the manufacturer initially felt that it would be very difficult to ensure air-tight installation.

Under these circumstances they could not rule out a build-up of moisture. A 1:1 sample within the scope of the HFA tests with the climate specified by the architect actually did reveal condensation and a penetration of moisture into the structural connection insulation. By modifying the installation with a kind of rear ventilation the build-up of moisture could be inhibited, which has proven effective in construction practice.

Schober concluded, “Our contribution was to support the realisation of the project and/or demonstrate its feasibility, and to optimise the design in collaboration with the manufacturer, from a cost standpoint as well. This meant that we were also able to define the assembly method in such a way that the installation could be handed over without defects.”

21786/Press Release – 2019.03.06

Michigan State University Researchers Unveil Work on Clear Solar Coating

Researchers from Michigan State University have developed see-through solar panels. Completely transparent, these new panels will offer solar energy collection to more aesthetic areas of architectural design, and possibly even power mobile phones and cars.

The research team, already having an engineering formula that worked has come up with a transparent luminescent solar concentrator (TLSC) that can function as a coating over clear surfaces, harvesting solar energy without affecting the function of the surface to let in light.



The technology employs organic molecules, which function on a light wavelength not visible to the human eye. Dr. Richard Lunt, assistant professor of chemical engineering and materials science at MSU’s College of Engineering, explained, “We can tune these materials to pick up just the ultraviolet and the near infrared wavelengths that then ‘glow’ at another wavelength in the infrared. The captured light is transported to the contour of the panel, where it is converted to electricity with the help of thin strips of photovoltaic solar cells.”

The design is ideal for use in architecture. As more solar energy can be harvested from the surface area of a building’s facade, TLSC could offer a significant energy impact on tall buildings.

TLSC-coated glass would not affect the look of the building or compromise the architectural design while adding energy collection technology to new and existing properties, as the technology could also be integrated into old buildings.

TLSC coating might one day allow for retrofitting older buildings to collect solar energy

If they prove commercially viable, Dr. Lunt continued, the power they generate could “significantly offset the energy use of large buildings.” The university research team has received funding from the Center for Excitonics, an Energy Frontier Research Center financed by the Department of Energy, to continue their innovative research into the energy-producing efficiency of the transparent cells.

Dr. Lunt believes that some basic modifications, such as stacking the cells, could increase TLSC efficiency from 1 percent to around 10 percent.

“We’re not saying we could power the whole building,” he clarified, “but we are talking about a significant amount of energy, enough for things like lighting and powering everyday electronics.”

21787/Press Release – 2019.03.11

CONTAINER GLASS

Glass Companies

O-I



1. Owens-Illinois (O-I) will invest more than \$60 million to expand its plant in Gironcourt, France.

Plans include building a new furnace for a total of three furnaces at the plant when the expansion project is completed in early 2020.

The expansion at Gironcourt will focus on the growing premium beer segment, which is highly differentiated and uses unique bottle shapes to build strong, premium brand equity.

O-I CEO, Andres Lopez, said: “Our customers recognise that glass brings brand building capabilities. It delivers what consumers want - premium, healthy and sustainable packaging.”

“The expansion at Gironcourt is an important part of O-I’s investment strategy to support the growing demand for glass in premium segments.”

This expansion supporting organic growth follows the recent transaction to acquire nearly 50% interest in Empresas Comegua, a manufacturer of glass containers for the Central American and Caribbean markets.

This inorganic growth investment connects the company’s footprint across the Americas - extending from Canada to Argentina.

O-I is also driving innovation in the glass segment evidenced by the development of MAGMA, a breakthrough initiative to reimagine glassmaking with transformational technology and new processes.

O-I also recently launched O-I : Expressions, a direct-to-glass digital printing technology offering customization at speed, value and flexible volumes.

21788/Press Release – 2019.03.12

2. O-I starts Pernambuco, Brazil operation

Owens Illinois (O-I) has started operations at its Vitória de Santo Antão plant in Pernambuco, Brazil. The resumption allowed the creation of at least 100 new direct jobs in the region, and more than half were taken by former employees of the company.

The production of packaging in the unit had been deactivated in March 2016 and since then only decoration and logistics services remained in place.

In 2018, the company announced the reactivation of the plant in order to expand its national capacity. The staff now has more than 160 employees.

The investment has increased the site's production capacity to 65,000 tons, equivalent to 300 million glass containers per year.

Rildo Lima, president of O-I South America, said: "The Vitória de Santo Antão unit adds to the other O-I plants and will be an important manufacturing hub for the north and northeast, as well as providing packaging to other regions.

"The goal is to respond quickly to market demands, which are heated due to the improvement in the national economy."

21789/Press Release – 2019.03.12

Verallia Group



A new Verallia advertisement for the Portugal market features five bottles and two food jars that evoke the company's market segments in the country. Each glass container is personalized with a symbolic accessory. The family photo, from left to right:



For **beers**: a soccer fan's scarf.

For **food products**: a bottle wearing a straw hat and a jar draped in a bandana.

For **olive oils**: a typical waistcoat from the Alentejo region and a stick used to harvest fruit.

For **wines**: a napkin.

For **port wines**: a bowtie.

For **sparkling wines**: a pearl necklace.

In Portugal, Verallia has around 250 employees. Its headquarters, factory and product development centre are located on the Atlantic coast, in Figueira da Foz, between Porto and Lisbon. With its two furnaces, the business produces daily over 2 million bottles and jars for still wines (including the famous port wines), sparkling wines, beers, spirits, soft drinks and food. Verallia Portugal serves local and international customers. The business stands out for its remarkable knowledge of the Portuguese market and the close relations it has nurtured with its customers over the last 30 years.

To find out more, visit Verallia Portugal's website: www.pt.verallia.com.

21790/Press Release – 2019.03.21

Vetropack Group



The Board of Directors of Vetropack Holding Ltd has appointed Evan Williams (pictured) as the new Group-wide Head of Marketing, Sales and Production Planning with effect from 1 June 2019. He will also become a member of the Management Board.



Evan Williams, aged 52, holds a Bsc Honours graduate in business administration and applied psychology at Aston University in Birmingham UK. Born in the UK, Williams also holds an Executive MBA from Ashridge Hult International Business School. A strong negotiator, over the past 25 years, his professional focus has been glass packaging: working for O-I Europe, he headed up the marketing and sales areas across various regions and categories. His most recent position saw him assume responsibility for global cross-functional key account teams. Williams adopts a strategic and target-oriented approach and is well acquainted with the area of production planning.

Marcello Montisci, the current Head of Marketing, Sales and Production Planning, has already reduced his employment level by 50 percent at the end of February. Prior to his well-deserved retirement at the end of 2019, he will continue to be available to Vetropack Group for special projects.

21791/Press Release – 2019.03.06



Bormioli Pharma

Pharmaceutical glassmaker Bormioli Pharma wants to invest in its factory of San Vito al Tagliamento, Italy. The group plans to invest €22 million with the aim of increasing turnover from €20 million to €28 million.

Work will start in August 2019 and reach full capacity by 2021.
The plant may stop production of glass tubes and manufacture hollow glass instead.
The number of employees at the plant will rise from 80 to 125.
Bormioli Pharma was established at the end of 2017 after it was transferred by the Bormioli Rocco group. It is today owned by the Triton Capital Investment Fund.

21792/Press Release – 2019.03.19

BA Vidro



In 2019 the company will build in the plant in Vila Franca de Los Barros the largest Iberian installation of photovoltaic panels.
Renewable energies are a major concern in recent years and BA Vidro has announced making an investment of 5.5 million EUR in solar panels to be installed on the roof of their Vila Franca de Los Barros plant in Southern Spain. These panels will provide with a daily output of 8 megawatts of energy per day.
Reducing the environmental footprint is one of the concerns of BA Vidro.
“It’s an area we have been betting on for more than 20 years,” said Sandra Santos, the group’s chief executive, detailing the point when the company began investing in glass treatment plants that collected glass to reintroduce it back into the production process.

21793/Press Release – 2019.03.26

Vidroporto



Vidroporto Embalagens has acquired the Glass Industry of the Northeast (IVN) glassmaking facility in Estância, Sergipe, northeast Brazil.
The site had been closed for two years before the acquisition by Vidroporto in January. Its CEO, Edson Rossi, said that production will be initially 60,000 tons a year but could rise to 90,000 tons after future expansion.
The site has hired approximately 200 people, with most of these former workers at the IVN site.
Vidroporto has a 20% market share in Brazil. It expects its market share of the Brazilian glass market to increase to 25% with the acquisition.
The site was previously owned by local partner Ipiaram Empreendimentos e Participações in partnership with Verallia, and closed in 2017.
Mr Rossi said Vidroporto had analysed the market and spoke closely to customers before making the decision to acquire the site.
Vidroporto is a Brazilian company that was founded in 1977 for local entrepreneurs and in 2004 hired professionals to manage the company. The company has two plants and four furnaces and has around a 22% of market share of glass containers for beverages in Brazil.

21794/Press Release – 2019.03.12

verescence

Verescence

French perfumery and cosmetic glass manufacturer, Verescence, has confirmed Stirling Square Capital Partners as a shareholder of the group. Stirling Square is a pan-Europe private equity firm based in the UK.

Verescence produces 500 million bottles per year in its three glass production sites and its four decoration sites in Europe and North America.

In 2018, the company employed 2,300 people and achieved sales revenue of €305 million.

Thomas Riou, President of Verescence, said: "The arrival of Stirling Square Capital Partners as new shareholder of our group will enable us to accelerate our international expansion and our new strategic plan Verescence 2022 - Forming the future.

"A project which includes a massive investment plan of €122 million euros."

21795/Press Release – 2019.03.11

Gerresheimer



Gerresheimer is investing a mid-double-digit million EUR figure in the new plant in the North Macedonian capital of Skopje, an amount that is already included in the company's medium-term investment plans. Construction will begin in the first half of 2019, with completion scheduled for the first half of 2020. It is expected that start of production will take place in the second half of 2020.

"As part of our growth strategy, we require additional manufacturing capacity and are expanding our European production network," said Dietmar Siemssen, Chief Executive Officer of Gerresheimer AG. "We will build a new plant in Skopje to produce plastic systems for both the pharmaceutical industry and the medical technology sector as well as prefillable syringes. North Macedonia is an ideal location for expanding our production. The country offers good infrastructure, cost structures, trained personnel and excellent support from the authorities."

The plant will initially manufacture medical plastic systems prior to adding prefillable glass syringes lines following a further expansion phase. Up to 400 jobs may be created in the medium term. The plant will belong to the Plastics & Devices Division where it will fall under the Medical Systems Business Unit.

Construction work, staff training and production ramp-up will be closely supervised and supported by the Gerresheimer competence centre in Wackersdorf, Germany, together with European sister factories in Pfreimd and Buende in Germany as well as Horsovsky Tyn in the Czech Republic. Gerresheimer has production facilities in North and South America as well as in Europe and Asia. The Skopje plant will be Gerresheimer's first in South-Eastern Europe.

21796/Press Release – 2019.03.13

Stoelzle



The West Styrian glass manufacturer Stölzle-Oberglas proves that even energy-intensive industrial companies have a green thumb. In 2018, a huge rooftop photovoltaic system went into operation, which had been installed by the Austrian company Oekosolar PV on the eight Stölzle warehouses.

Each of the eight individual PV systems has a nominal output of around 200 kilowatts peak, so a total of 1.6 MW peak, which corresponds to 25% of the electrical power which is required by the Austrian glass plant at peak time.

Furthermore, a waste gas heat exchanger was implemented in 2015 at the Austrian glass plant of the group, which feeds the waste heat from the two melting furnaces used in the glass production into the district heating network of Energie Steiermark. This compensates for 4,300 tonnes of CO₂ every year.

Since 2018, 170,000 MWh of green electricity and 450,000 MWh of green thermal energy has been generated in three biomass power plants owned by CAG Holding, to which the Stölzle Glass Group belongs. This corresponds to 2/3 of the total energy consumption of all six European glassworks of the Group.



Photovoltaic system



Waste Gas Heat Exchanger



Biomass Power Plant

21797/Press Release – 2019.03.18

Miscellaneous

Shortage of Wine Bottles in Germany

A shortage of glass bottles is hampering the German wine industry. After the best harvest in a decade, vintners are struggling to find enough bottles, and waiting periods have increased to as long as three months.

The problem is particularly acute with transparent bottles in the 0.75 litre range, said the German Wine Institute's Frank Schulz. These bottles are typically used for Rose and Sparkling wines, he added.

Germany's wine harvest in 2018 looks set to be more than 2 million hectolitres higher than in 2017. Provisional figures state 9.8 million hectolitres were produced in 2018, up from 7.5 million hectolitres in 2017.

Suppliers would typically resort to imports during production bottlenecks but that is proving difficult after Italy, Spain and France also reported strong wine production.

Mr Schulz said it was a serious issue for Vintners, who are increasingly selling by the bottle rather than the barrel.

One suggestion is the supply problem has been exacerbated by the closure of a number of former East German glassmakers since 1990. They have been acquired by larger groups and relocated elsewhere.

21798/Press Release – 2019.03.26

DOMESTIC TABLEWARE AND CRYSTAL GLASS

Glass Companies

Libbey Inc.



Libbey®

Libbey Inc. announced that its board of directors has named **Michael (Mike) P. Bauer** as the Company's **next chief executive officer**, effective March 25, 2019. Bauer was also appointed to the Company's board of directors, effective March 25, 2019. William (Bill) A. Foley, Libbey's current CEO and chairman of the board, will retire as CEO effective March 24, 2019, but will remain with the Company as executive chairman of the board. This is part of Libbey's succession planning process, which has been underway for some time.

Mike Bauer has an extensive experience and track record of success leading strategy, growth and margin expansion in multi-channel, global consumer product organizations. In addition, Mike's considerable knowledge of finance, supply chain, marketing, manufacturing and e-commerce will complement the team and help Libbey continue to drive profitable growth, operational excellence and organizational excellence.

Mr. Bauer holds a B.B.A. in Accounting from Cleveland State University and an MBA in Finance from Case Western Reserve University in Cleveland, Ohio.

21799/Press Release – 2019.03.12

Krosno



KROSNO

Krosno Glass launches a new D'sign Sakred colourful collection of glassware line in partnership with designer Karim Rashid.

Under a new brand label, Krosno D'sign, Polish glass manufacturer Krosno Glass has partnered with award-winning visionary designer Karim Rashid on a collection of drinkware and decorative pieces.

Born in 1960, Karim Rashid, is an Egyptian-born and Canadian-raised industrial designer. He has won the Canadian designer of the Year in 2001, a silver award from the Pentawards in 2010 for a collaboration with Box House, the Red Dot Design Award in 2012 for his collaboration with Danish designer and manufacturer BoConcept on their Ottawa Collection and the Lawrence Israel Prize by the Fashion Institute of Technology in New York City in 2017.



Based on the sacred geometry of forms, Karim created his glass sculptures using the perfect, pure symmetry of cylinder and cone, the forms he considers most universal. Sakred is a limited handmade glassware line, in a variety of Karim's vibrant signature shades (yellow, purple, green and pink) including a flute, martini glass, wineglasses, whisky glass, highball, carafe, dessert bowl, cake stand/dome, fruit bowls, candleholders, vases and hurricanes.

21800/Press Release – 2019.03.11

Steklarna Hrastnik

Glass manufacturer Steklarna Hrastnik is planning a series of investments over the next few years to convert its current Hrastnik site into a smart factory by the year 2022. To develop a roadmap for investments and developments, the company sought out Siemens' digital consultancy service for glassmakers.

Siemens Digitalization Consulting focus on a roadmap over the next five years. This gives an acceptable horizon for investment and satisfy the CFO community while keeping the digital road at a manageable complexity level because such a roadmap involves many projects that are technically interconnected. This includes cyber security and automation networks, or MES and Document Management systems for example. Keeping the roadmap within a three to five-year horizon results in proposed traditional modernisation projects, while looking at a 10-year roadmap will be more a 'picture of the future' rather than a concrete roadmap.



Steklarna Hrastnik is a glass producer dedicated to glass packaging, glassware, and lighting, although they also produce handmade glass items as well as offer many other services. The Slovenia-based company is over 150 years old, but is guided by more modern and progressive leadership ideals.

Projects such as these might last around four to six weeks, and of that time Siemens will typically spend three weeks on site with the customer. They will lead workshops, interview staff, investigate the maturity of the systems and their interconnections, build a map of the process and of their IT and Operational Technology (OT) landscape.

During previous workshops they noticed it was common for departments not to communicate with one another while working in the plant. The batch house operator did not talk with the furnace operator, for example.

21801/Press Release – 2019.03.04



Cristalleries de Saint-Louis

Crystal glassmaker Cristalleries de Saint-Louis has ordered a batch plant from Zippe. Cristalleries de Saint-Louis produces ornate and elaborately decorated crystal glass, mainly for the luxury sector, with mouth-blown crystal glass polished, engraved and decorated with 24-carat gold or platinum.

Zippe will supply a new batch plant for crystal glass with a performance of seven tons in five hours with manual silo charging, three container scales and a mixer as well as the transfer to manual transport containers in which internal cullet can be discharged.

Two crushing plants will be placed next to the batch plant, one is for pre-crushing large crystal glass and the other for crushing the necessary grain size.

Zippe will deliver and install the complete mechanical equipment including the electrical controls. The steel work and silos will be provided by the customer.

Commissioning is planned for the end of October 2019.

21802/Press Release – 2019.03.19

Miscellaneous

FCVMM Registration of Glass-Making Know-How for Intangible Cultural Heritage

February 14, after a proposal from the *Fédération des cristalleries et verreries à la main et mixtes* (FCVMM) (French Federation of hand-made and mixed crystal companies and glassworks), in collaboration with the National Institute of Crafts, the gestures of the glass know-how were registered in the inventory national intangible cultural heritage. A first step before a candidature to Unesco.

Cane blower, gilder, decorator glassblower, bomber or polisher, all have been officially recognized as craftsmen by the decree of December 24, 2015 relating to the identification of crafts. But this dignity is not enough to ensure the safeguarding of secular know-how that contributes to French cultural excellence as much as to its economy.

Remember, for example, that 70% of the world's production of luxury bottles for perfumes, spirits or pharmacy comes from the "Glass Valley", the world's leading pole



of luxury bottles located in the Bresle Valley, at the border of Normandy and Hauts-de-France. Real jewels of the national industry, crystal glassworks and glassworks cover all the territory, of Lorraine (Baccarat, Daum, Lalique and Saint-Louis) to Normandy (Waltersperger, Saver Glass), producing for domains as distinct as the perfumery, tableware, lighting, decoration, jewellery, pharmacy or the automobile industry. They also put their know-how at the service of the restoration of historical monuments and art objects, like the Ateliers Duchemin, specialists in stained glass, who worked in 2017 to renovate Art Deco glass walls of the Bon Marché.

Supported by the National Institute of Crafts, the FCMM called for an inscription of the gestures of the glass crafts to the French inventory of intangible cultural heritage. Created in application of the UNESCO convention of 2003 and updated by the General Directorate of Heritage, this inventory lists the different living traditions (music, dance, ritual practices, know-how, etc.) whose safeguarding, i.e. transmission, must be provided by the state. The inclusion of the gestures of the glass know-how, which join those of Daum's crystal makers and the craft of the glass pearl, is one of the five criteria required for an application on the Intangible Heritage of Humanity lists, inventoried by Unesco.

21803/Press Release – 2019.03.15

REINFORCEMENT GLASS FIBRES

Glass Company

Lanxess

1. **LANXESS expands product range of highly reinforced thermoplastics with a new polyamide 66 with 60 percent glass fibres.**

Specialty chemicals company LANXESS is expanding its range of highly reinforced polyamides and polyesters for the design of extremely strong structural components. The polyamide 6 grades Durethan BKV 60 EF and XF are being joined by a polyamide 66 with a glass fibre content of 60 percent, which is to be marketed under the name Durethan AKV 60 XF. The new high-performance thermoplastic combines the benefits of a highly reinforced, easy-flowing compound with the advantages of a polyamide 66 resin. "The material exhibits excellent strength and stiffness. It unlocks a whole new dimension of design freedom for all-plastic parts, plastic/metal hybrid technology and continuous-fiber-reinforced semi-finished thermoplastic composites. What's more, it can be used as a metal substitute in a whole range of applications," says Ralf Heinen, a plastics expert at LANXESS.

Extremely strong and stiff: the material's modulus of elasticity – an indicator of stiffness – is more than double that of the standard polyamide 66, Durethan AKV 30 H2.0, which has a glass fibre content of 30 percent.

High flowability and chemical resistance: the new highly filled polyamide 66 structural material offers better resistance to chemicals, while its temperature of deflection under load (ISO 75-1,-2), at 250 °C, is almost 40 °C higher. “Moreover, at 180 °C, the maximum long-term service temperature is some 40 °C higher than for polyamide 66 grades with standard heat stabilizer.

Another advantage of the new material is its **excellent processing characteristics**. Despite the high glass fibre content, it exhibits the same flowability as polyamide 66 with a 35 percent glass fibre content. It can also be injection moulded at the same temperatures. Depending on component geometry, mould cooling and processing conditions, components can often be demoulded earlier, because the compound is stiff enough even at high temperatures and also conducts heat better. The thinner walls that can be achieved thanks to the improved material stiffness also help to cut cooling times.

Excellent opportunities for lightweight design and metal substitution.

The new polyamide 66 can also be used as a substitute for metals in components under the hood. Potential applications include valve covers, transmission and engine oil pans, brackets and intake pipes. Engine mountings and coupling rods in the chassis area are also viable applications for the material.

21804/Press Release – 2019.03.08

2. LANXESS achieves strong result in 2018 and makes a solid start to the new fiscal year

Specialty chemicals company LANXESS closed its fiscal year with a strong result. In 2018, EBITDA pre exceptionals increased by 9.8 percent to EUR 1.016 billion. As forecast, earnings are at the upper end of the range of 5 to 10 percent above the previous year’s figure of EUR 925 million (without ARLANXEO).

The good operating result was driven in particular by the operating strength of the Advanced Intermediates, Specialty Additives and Engineering Materials segments as well as the integration of Chemtura and the phosphorus additives business acquired from Solvay. The EBITDA margin pre exceptionals came in at 14.1 percent.

LANXESS group sales rose by 10.2 percent from EUR 6.53 billion in the previous year to EUR 7.197 billion. At EUR 431 million, net income was considerably higher than the previous year’s figure of EUR 87 million. This was due to the year-on-year improvement in the operating result as well as effects from the sale of the 50 percent stake in ARLANXEO. Moreover, the previous year’s net income was reduced by one-off expenses.

21805/Press Release – 2019.03.08

SPECIAL GLASS

Glass Companies

Corning

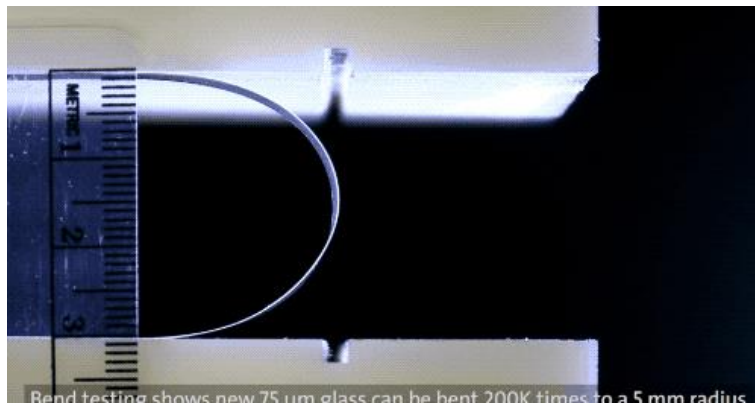
Corning working on foldable glass for future phones

The company is working on glass that can be folded and expects to succeed by the time folding phones are mainstream in a couple of years.

Corning is developing glass that can be repeatedly folded, and reports that it is on track to manufacture it in quantity in a couple of years when foldable phones are in the mainstream.

“We have glasses we’ve sampled to customers, and they’re functional, but they’re not quite meeting all the requirements,” says John Bayne, senior vice president and general manager in Corning. “People either want better performance against a drop event or a tighter bend radius. We can give them one or the other; the key is to give them both.” The company is currently using glass that is 0.1mm thick and can be bent to a 5mm radius.

CORNING



“The back of the problem we’re trying to break, the technical challenge is, can you keep those tight 3- to 5-millimeter bend radii and also increase the damage resistance of the glass,” says Bayne. “That’s the trajectory we’re on.”

21806/Press Release – 2019.03.06

SCHOTT

1. SCHOTT to invest \$1 billion globally in pharmaceutical packaging business through 2025

SCHOTT is making a \$1 billion global investment in its global pharmaceutical packaging business. A growing global demand for high quality pharmaceutical packaging, such as vials, syringes, ampoules and cartridges made of Borosilicate glass and polymer, has prompted the international technology group to build new production sites in Germany and China, and invest in new lines and manufacturing technology around the world. The new investments cover the entire value chain from pharmaceutical glass tubing to packaging through adjacent services. They include:

- a new glass tubing production facility in China, as well as investments in additional tanks and infrastructure in India. This makes SCHOTT the first glass supplier that is responding to the increasing demand for high quality pharma glass with a significant capacity increase,
- new construction of a production facility for SCHOTT TOPPAC® ready-to-use polymer syringes and customized container solutions at the SCHOTT site in Müllheim, Germany, as well as increased syringe production capacity in St. Gallen, Switzerland. Overall, the company's production capacity for polymer packaging will see a 50% extension by 2020, and an additional 50% over the next years,
- the expansion of SCHOTT's high-value vial product line. This includes, the production ramp-up for the newly launched EVERIC™ pure vials for high potent drugs such as biologics or vaccines, as well as intensive invest in the company's iQ™ platform of ready-to-use vials. The ramp-up will occur at SCHOTT's U.S. facility in Lebanon, Pennsylvania. SCHOTT will also double the capacity of lines producing coated vials in Germany,
- a greenfield facility for the production of syringes and a new production module for vials in India,
- additional expansion of the ampoule production at the company's recently inaugurated China greenfield facility,
- a strategic partnership with SmartSkin Technologies, a Canadian firm that has developed monitoring systems that can significantly lower quality cost for pharmaceutical companies.

Several of these investments will be completed early this year. Other projects such as new melting tank and syringe greenfield production in India will be ramped up later in 2019. All other major investments will have an impact over the course of the next five to six years. By 2025, the company will have invested around \$1 billion in its pharma business segments. "These investments will increase global access to safe medications, while supporting the marketing of new pharmaceutical products," said Dr. Frank Heinrich, Chairman of the Management Board of SCHOTT AG. "We expect demand for high-quality pharmaceutical packaging to remain strong globally, and are supporting the growth objectives of the pharmaceutical industry."

21807/Press Release – 2019.03.25



2. World's first lubricant-free prefillable glass syringe

Lubricants have long been a necessary evil for prefillable syringes. They aid in reducing the injection force to make the treatment more comfortable for the patient, yet could also influence and harm the drug. Pharma packaging specialist SCHOTT has successfully tackled this challenge and presents syriQ BioPure® lubricant-free – the first prefillable glass syringe (PFS) that completely eliminates the need for silicone or similar substances. The new syringe will be available in the course of 2019.

To meet the needs of the growing market for biologics that are ultra-sensitive to silicone, which applies to an estimated 10 to 15 percent of the pipeline, syriQ BioPure® lubricant-free refrains from siliconization of the syringe barrel. To still maintain a consistent gliding force, great emphasis was laid on an accurate geometry. The new syringes are made of FIOLEX® glass tubing that is 100 % inspected with the help of a big data process named perfeXion®, ensuring tight dimensions and a high cosmetic quality of each barrel. Silicone-free plungers and stoppers from leading component suppliers round out the concept and eliminate the risk of lubricants interacting with sensitive biologics. In addition, syriQ BioPure® lubricant-free also features ultra-low tungsten residuals as well as low adhesive residuals in the needle stake to limit the risk of Extractables & Leachables (E&L).

“Quite often, pharmaceutical manufacturers opt to use vials instead of pre-filled syringes to avoid silicon contamination”, says Nicolas Eon, Global Product Manager at SCHOTT. “With syriQ BioPure® lubricant-free, we allow a new class of drugs to be manufactured and stored in PFS – a packaging class that offers a great way to save time for both patients and clinicians and reduce healthcare costs.”

21808/Press Release – 2019.03.25

3. SCHOTT EVERIC™: Vials optimized for high potency drugs, even with low filling volumes

SCHOTT presents a new generation of ultra-pure pharmaceutical vials to meet the exacting drug stability needs of low-fill drugs. Designed as a modular concept, EVERIC™ provides pharmaceutical companies with a unique combination of attributes to package biologic drugs while supporting today's quality requirements of fill and finish lines.

The newest pharmaceuticals have exacting packaging requirements to protect against interactions between drug and container. Especially the bottom-near heel region of standard vials often acquires an inhomogeneous chemical structure during the forming process and is prone to ion exchange, which might potentially harm the drug. At the same time, the heavy costs of developing and producing highly potent drugs such as biologics or vaccines put pressure on the pharmaceutical filling process to increase yields and reduce waste.

To meet these demands, SCHOTT has developed **EVERIC™ pure** for sensitive drugs and drugs with low filling volumes. The new vials ensure drug stability by using an improved Borosilicate glass tubing: Thanks to tighter process control FIOLEX® CHR (controlled hydrolytic resistance) comes with higher chemical stability while leaving the original glass composition unchanged.

In addition, the vials are converted by the company's approved DC forming process (delamination controlled), which carries the chemical stability and homogeneous surface of the glass tubing through the converting process. Thanks to existing regulatory validation, pharma companies can replace conventional tubular type-I glass vials for already marketed drugs with EVERIC™ pure without costly re-registration.

In the future, pharmaceutical companies will be able to add even more features to their EVERIC™ vials to improve the drug filling and transportation process with:

EVERIC™ strong: SCHOTT used computer simulation to improve forming and geometry at the vial's handling and contact points in the heel and shoulder area. As a result, the vials can better withstand side compression and axial load during filling and transportation, reducing the risk of glass breakage.

EVERIC™ smooth: The direct vial-to-vial contact on conventional bulk filling lines can create glass particles that may end up inside the container. To reduce the friction and allow the container to run smoothly through the production line, EVERIC™ vials can be delivered with a coating of the outer surface. The surface treatment is abrasion-free and fully transparent to ensure unimpeded visual inspection. It is limited to the most relevant areas of the vial body, i.e. the sidewall, and withstands washing and depyrogenation without degradation. Tests have shown an 80% improvement of the coefficient of friction (CoF) through the treatment.

21809/Press Release – 2019.03.25

Jenoptik

2018 has been a new record year for Jenoptik.

Revenue rose by 11.6 percent to 834.6 million EUR and order intake by 8.8 percent to 873.7 million EUR. EBITDA was up 19.3 percent to 127.5 million EUR; EBIT grew a significant 21.6 percent to 94.9 million EUR.

This highly encouraging performance was mainly driven by strong demand from the semiconductor equipment industry and the delivery of toll monitoring systems in the traffic safety business.

The Group also successfully completed its acquisitions of the Canadian company Prodomax in July and the Jena-based OTTO Group in August of 2018. Both companies were integrated in the Light & Production division. These acquisitions already made a substantial contribution to revenue of 37.0 million EUR in the past fiscal year.

On a regional level, revenue generated both in Germany and abroad contributed to growth. Outside Germany, Europe remained the region with the highest revenue, followed by the Americas.

rise, of 21.6 percent to 94.9 million EUR (prior year: 78.0 million EUR). The earnings contribution of the acquired companies came to minus 0.5 million EUR. EBIT included PPA effects of minus 10.5 million EUR. Nevertheless, the margin improved to 11.4 percent (prior year: 10.4 percent).





From right: Jenoptik President & CEO Dr. Stefan Traeger and CFO Hans-Dieter Schumacher.

Employee numbers continue to grow particularly abroad

The number of Jenoptik employees (incl. trainees) rose by 9.9 percent (363 employees) to 4,043 as of December 31, 2018. As a consequence of the internationalization strategy, the number of people employed abroad increased, by 22.3 percent to 981 employees, bringing the total workforce abroad up to 24.3 percent.

Growth set to continue in 2019

“As part of the gradual implementation of our ‘Strategy 2022’, we have achieved key milestones with the introduction of our new corporate structure in early January 2019, the launch of the new, independent VINCORION brand for our mechatronics business in September 2018, and the reorganization of our activities in Asia, said Stefan Traeger, Jenoptik’s President & CEO. We are convinced that we are on the right track with the realignment of our structures, a stronger focus on photonic markets and the initiatives launched to promote innovation within the Group.”

Based on a very good order backlog, the Executive Board looks to 2019 with confidence. “We are expecting momentum to accelerate in the course of the new fiscal year, resulting in a stronger second half of the year,” confirmed Stefan Traeger. “In addition, deliveries of the toll monitoring systems in the traffic safety business had made a significant contribution to our revenue in the first half-year of 2018. Therefore, we are presently expecting a somewhat weaker business development in the first half-year, but anticipate further growth in the full year 2019.”

21810/Press Release – 2019.03.26

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DIVERSE

GLASS, RESEARCH & SUPPLIERS

Glass Technology Services (GTS)

GTS is reassuring clients that results and analytical test certificates will remain valid for laboratory facilities accredited by the United Kingdom Accreditation Service (UKAS) - whatever the outcome of the ongoing UK withdrawal discussions.

This position was clarified by the Association of National Accreditation Bodies in Europe (EA), who have confirmed that the “EA has revised its Articles of Association” - allowing UKAS to “maintain its membership for further 2 years” as a transition period and that “UKAS will continue to be peer evaluated by EA in order to maintain its MLA signatory status”. During this transition period the EA intend to revise membership criteria “with the aim that UKAS remains an EA member”.

A copy of the EA statement is available alongside this press release at <https://www.glass-ts.com/news/accredited-laboratory-services-will-be-recognised-regardless-of-brexit-outcome>.

21811/Press Release – 2019.03.07

Bacteria-Killing Glass Offers Hope in Fight Against Hospital Infections

Scientists at Aston University, Birmingham, UK, have discovered a technique similar to medieval stained glass-making that can completely eradicate the deadliest hospital infections within hours.

Researchers of Aston University in Birmingham, UK, were able to achieve a “complete kill” of the deadly bacterial infections E.coli and Candida albicans (a fungal infection associated with surgery), as well as a near-complete kill of Staphylococcus aureus (the drug-resistant form of which is MRSA) using a so-called bioactive phosphate glass containing small amounts of the metallic element cobalt.

Lead researcher, Dr. Richard Martin of Aston University, said the findings had significant implications, offering the possibility of cheap, antimicrobial implants and coatings to combat the most common sources of infections associated with medical care.

Avoiding the need for antibiotics, it is also thought the bioactive glass could be effective against drug-resistant ‘superbugs,’ helping to tackle the growing problem of antimicrobial resistance (AMR).

According to the European Centre for Disease Prevention and Control (ECDC), over four million people in Europe get a healthcare-associated infection (HAI) every year, and around 37,000 die as a direct result of the infection.



In the study, published in the journal ACS Biomaterials, the researchers used a centuries-old technique to make glass laced with trace amounts of cobalt in a furnace heated to over 1,000°C, before rapid cooling to prevent crystallisation. These were then ground down into a fine powder and put into contact with bacteria in petri dishes.

The glasses contained varying concentrations of cobalt, providing a controlled release of antimicrobial ions as they dissolved. At the highest concentration, the glass completely eradicated E.coli within just six hours, with a “complete kill” also observed for C.albicans within 24 hours. S.aureus levels were reduced by 99 percent after 24 hours.

Bacteria coming into contact with the glass had their cell walls broken down by the metal ions, causing their contents to ‘leak out’. Ions also leached out from the glass, killing bacteria they were not in direct contact with.

In separate studies, similar anti-bacterial qualities have been observed in glasses laced with other metals including copper, zinc and silver.

Although bioactive glasses have been known about for some time, this is the first study to show that cobalt-doped bioactive glasses are effective in fighting specific bacterial microbes, opening the way for a wide range of uses to fight infection.

This includes as biodegradable filling agents directly at the site of surgery, or drawn into fibres for soft tissue applications. But their most important use could be in catheters, which are needed by around 25% of hospital patients, typically elderly people. Although sterile when inserted, when the collection bag is filled it is possible for bacteria to multiply and climb back up the catheter into the bladder, causing a urinary tract infection. These can be difficult to treat with antibiotics and are the second biggest cause of septicaemia (blood poisoning).

To combat this, the researchers say it would be possible to insert a cartridge filled with antimicrobial glass in the line to stop the bacteria climbing back up the catheter into the patient.

Dr. Richard Martin of Aston University’s School of Engineering and Applied Science, said, “These glasses provide localised delivery at the surgical site to stop infections from forming in the first place. Once an infection has had time to establish itself it is much harder to treat, because complex bacterial biofilms start to form which are much tougher to tackle.

“With the rise of antimicrobial resistance, these glasses have the potential to radically transform how we guard against common hospital infections, because if we can stop the bacteria from multiplying it negates the need for heavy doses of antibiotics.

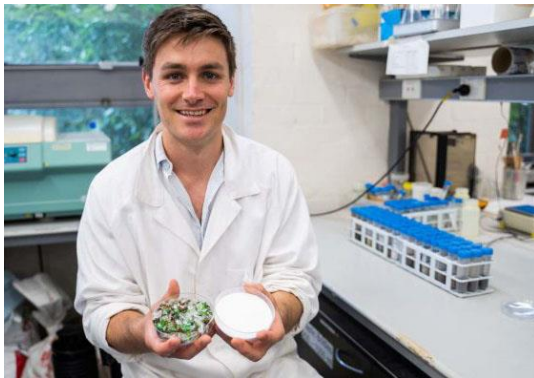
“This would be good news for patients, who would be at a much-reduced risk of contracting a potentially life-threatening infection during a hospital stay but also good for healthcare systems, which could make more judicious use of antibiotics and prevent costly unplanned hospital stays.”

21812/Press Release – 2019.03.06

University of Queensland New Technique for Extracting Silica from Glass

Researchers have developed a process to convert non-recyclable glass into silica. Certain kinds of glass can't be recyclable because of the effort required to sort and separate the smaller fragments. These chips tend to be discarded or sent to the landfill – but researchers from the University of Queensland have uncovered a method to turn this kind of non-recyclable glass into useful items.

A chemical found in drain cleaner can break down glass into silica, which can then be extracted for commercial uses for substances such as adhesives, detergents, ingredients in cleaning compounds, cements, binders and coatings.



“We are taking waste glass that is currently going to the landfill because it is too small to be sorted into the right colour,” said University PhD candidate Rhys Pirie.

“Glass is about 70 to 75 percent silica. You need about 2.9 pounds (1.3 kilograms) of glass to make 1 kilogram of silica. Most of that goes into sellable products, so we have very little waste at the end of it.”

Unlike traditional methods of producing liquid silicate, the researchers' technique requires relatively little energy, which also makes it far cheaper.

“The glass industry has a huge amount of silicate it cannot recycle because it is too broken or it is too small,” said Professor Damien Batstone, another researcher who helped to develop the technique. “It is currently stockpiled at the moment as it can't be used. We're going to take it through a much simpler process to turn it into this commercial silicate product. It's a way to use a product which is currently a waste, which is currently unusable—it's a way to turn a cost negative waste into an absolute resource.”

The university's commercialization company, UniQuest, is now seeking partner companies that are interested in taking the technology to market.

21813/Press Release – 2019.03.07

SEMINARS / CONFERENCES / WORKSHOPS

Glass Technology Services (GTS) Training Programme 2019



GTS announced an extended training programme for 2019 due to increasing demand from across the glass industry and wider supply chain.

The 2019 programme features not only an increased number of introductory and technical events, but wholly new courses and workshops developed following feedback and requests from our client-base.

Please find herewith the list of the courses for 2019:

16-18 April 2019	Glass failure analysis (3 day course);
Wednesday, 8 May 2019	Fundamentals of Glass (1 day course);
Tuesday, 9 September 2019	An introduction to glass packaging (1 day course);
Tuesday, 10 September 2019	Glass appreciation – an introduction to glass (1 day course);
Wednesday, 9 October 2019	#PharmaGlass (1 day workshop);
15-17 October 2019	Glass failure analysis (3 day course);
Wednesday, 13 November 2019	Fundamentals of Glass (1 day course);

More info at: <https://www.glass-ts.com/training>

21814/Glass Technology Services Press Release – 2018.12.13

DGG-USTV

The German Society of Glass Technology (DGG) and the French Union for Science and Glass Technology (USTV) are calling for papers for the 93rd annual joint meeting, which will take place on **13-15th May 2019 at the Maritim Hotel in Nürnberg, Germany**.

Seven sessions will take place.

- Session one will be held on 'High temperature properties/ Hot forming, secondary manufacturing, link properties structure/ Mechanic of Glass';
- Session two will cover 'Glass for Optics/Fibers/ Laser Application on Glass';
- Session three will demonstrate 'Glasses in Healthcare'
- Session four will be on 'Thermodynamics, Redox, Colour/ Furnace, Energy and Environment'.
- Session five will be held on 'Glass surface and alterations/coatings/Heritage';
- Session six will cover 'Glass Ceramic/Crystallization/nano-and microtexturation'
- Session seven will be 'modeling from the atom to the final product: Process control, data mining and deep learning in the glass industry.'

There will also be activities, including: the 'International School, Thermodynamics of Glass (TC3 ICG, USTV, DGG) in Erlangen, Sunday 12th May 2019; a special session of FunGlass – Centre for Functional and Surface Functionalized Glass; Oral and poster

presentations on a variety of topics relating to glass; a students' special programme and workshops on the theme of glass in German.

The DGG-USTV conference is 14 days earlier than usual.

21815/Press Release – 2019.01.11

Glass Service

Glass Service (GS) will organise the 15th International Seminar on 'Furnace Design – Operation and Process Simulation' on **22-23rd May 2019** at Hotel Horal in **Velke Karlovice, Czech Republic**.

In conjunction with the seminar, the ICG Technical Committee 15 & 21 Meeting and GS Glass Furnace Model (GFM) User Meeting will be held on the 21st May.

Topics will focus on energy consumption and savings. This will include:

- Application of modelling – furnace design and forehearth simulation;
- modelling of combustion and electric melting;
- use of models in furnace operation and related advanced control;
- glass quality and yield improvement;
- glass forming simulation;
- CO2 reduction strategies and Industry 4.0 and hot end.

It will be aimed at those seeking to learn more about Industry 4.0 and the optimisation of glass melting furnaces with CFD simulation. Delegates can present and learn about the newest developments in the simulation of furnaces and advanced furnace control.

The seminar will focus on presentations that provide solutions to reduce CO2 emissions by 40% or more by the year 2030, following the Paris Climate agreement.

The event takes place every two years and brings together more than 150 glass experts from around the world to discuss the use of simulation and control tools, with the goal of optimising the glass melting and forming process.

Contributions will include invited lectures, regular lectures and posters. Oral presentations will be limited to 25 minutes plus five minutes for discussion. Posters will be presented in a separate session.

21816/Press Release – 2019.02.01

GPD Finland 2019

The Glass Performance Days (GPD) event in 2019 will celebrate its 27th year of service to the glass industry, **from 25 to 28 June 2019**.

The technical sessions of the conference and workshops will address the challenges the industry faces today regarding the ever-changing demands on City planning, building design, energy-efficiency and environmental fit. A special focus will be on the contribution of new glass technologies to these demands.

To see the registration fees and register, click:

<https://gpd.us10.list-manage.com/track/click?u=a865f4b251e1897d5ba548c9f&id=87148bfd9&e=c3eb320b90>

More general info at <https://gpd.fi/events/gpd-finland-2019/>.

21817/Press Release – 2019.01.17



ICG -11th Workshop Montpellier (France) 8-12 July 2019

The 11th workshop for new researchers in glass science and application is to be held in **Montpellier (France) 8-12 July 2019**.

The 11th workshop for new researchers in glass science and application will be composed of two interwoven threads.

The first thread will overview fundamentals in glass science emphasising structure-property relationships, experimental techniques, material simulations and tools that probe structure. Specific properties and applications will be discussed e.g. optical behaviour, transport phenomena, nucleation and crystallisation, and strength.

The second thread this year will focus on glasses for hazardous waste immobilization, to echo the importance of the nuclear industry and other significant areas of waste disposal. Attention will be given to glass formulation and structure, long-term corrosion behaviour, as well as melting technologies for nuclear waste glasses. The lecturers will be world experts in their fields. A significant aspect of the workshop will be student-centred projects that will help participants to develop their understanding by applying what they know to specific issues.

A more complete programme is available on ICG website: www.icglass.org

Participation will be limited to 20 Glass Applications and 30 Glass Science applicants.

Pre-registration deadline 15 April 2019 by email to verres2019@mycema.fr.

Registration deadline 15 May 2019.

21818/Press Release – 2019.03.05



Society of Glass Technology

SGT special conference on raw materials for glass making

The Society of Glass Technology is holding a special conference on Raw Materials for Glass Making in **Cambridge, UK 1–4 September 2019**.

The conference will feature dedicated sessions on particular glass ingredients as well as the batch as a whole.

The first speakers have been recently announced.

- Hans van Limpt of Sibelco will give an overview of the silica sand situation and future glass industry requirements.
- Tom Paterson the managing director of Fife Silica Sand and will discuss its contribution to the UK glass sand market.
- Diego Zurolo, General Manager of Loch Aline Sand Mine (LQS) will present a report about the position of LQS regarding the supply of their well-known high-quality sand.
- Professor Chris Rayner of C-Capture a branch from Whiterose.ac.uk a consortium consisting of Leeds, York and both Sheffield Universities, will speak about the CO2 stripping trial being carried out at Drax Power Station, the first such full-scale project in Europe.
- Nicola Johnson of Appleby Calumite will describe the history of Calumite use in the UK and Czech Republic and its role in lowering furnace emissions.

Further contributions can be expected from British Glass (on cullet), Glass Technology Services, Ardagh, St. Gobain and FIC (electric melting) on *'is this the future and what are its implications for raw material quality and specifications.'*

The raw materials conference will run in parallel with other sessions on glass science and technology and heritage and history as part of the SGT Annual Meeting.

21819/Press Release – 2019.02.20

80th Annual Conference on Glass Problems



The 80th annual Conference on Glass Problems will be held once again at the Greater Columbus Convention Centre in **Columbus, Ohio, 28-31 October 2019**, and invites engineers, educators, students, and solutions providers working on various aspects of glass manufacturing to submit an abstract for an oral presentation at this premier industry conference.

This conference is the largest glass manufacturing conference in North America and attracts glass manufacturers and suppliers worldwide to exchange innovations and problem solutions. The conference is co-organized by the Glass Manufacturing Industry Council and Alfred University, and provides expert lectures, panel discussions and focused courses and symposia, along with exhibiting and networking opportunities.

The topics of interest for this convention broadly include glass melting & quality, combustion and heat transfer, refractories, process control, sensors and Industry 4.0, modelling of glass melting and processing, raw materials, batching and recycling, forming issues and container customization, environment safety, emissions and respirable silica, carbon reduction, energy management and electric boosting, furnace design and reconstruction, furnace life extension and maintenance and any new topics relevant to glass manufacturing.

21820/Press Release – 2019.01.08
