

Ardagh Glass
Bridgeton, NJ
Community Informational Meeting

August 31, 2022
6pm – 9pm
Via Zoom

Welcome, Purpose, and Logistics

Rich Tomicek Vice President, Environmental Compliance and Sustainability	Nicole Provenzano Plant Human Resources Manager
Anindya Ghosh Plant Manager	Ty Sibbitt Associate General Counsel
Deric Edwards Assistant Plant Manager	Mary Daly Surrey Environmental Consulting, LLC
Bob LaMastro Plant Environmental, Health and Safety Manager	Julie Inman Corporate Environmental Engineer
Amy Brattain Director of Sustainability	

Meeting Agenda

- Introduction to Ardagh Glass Packaging – North America
- Process Overview
 - BRI plant profile
 - Ardagh Group Glassmaking Process
- Sustainability
 - 2021 Ardagh Group sustainability information
 - Energy Star certification
 - Ardagh Group Partners with KDC Solar
 - Planned water re-use project
- Community involvement projects (historical and future)
- Applicable regulatory programs/permits
- Questions from the community

Meeting Logistics

All participants have been muted upon entry into the meeting

Please hold all questions and/or comments until the end of this presentation

Verbal questions:

- To ask a question, raise your hand (“Reactions” tab, “Raise Hand” button on the Zoom screen)
- Once you are called upon, please unmute yourself
- Verbal questions will be transcribed and answered via the microsite

Chat questions:

- You may also ask questions via the “Chat” space
- Address questions to all attendees
- Questions will be transcribed and answered via the microsite

Following the meeting, written questions and comments must be submitted via the microsite

Link to microsite: <http://ardaghgroup.pcin.co.uk/bridgeton>

Comment period will end October 1, 2022

Written responses provided within 30 days of end of comment period (November 1, 2022)

Introduction to Ardagh Glass Packaging

4-minute YouTube video

<https://www.youtube.com/watch?v=-QwDUhxxZk8>

A leading global supplier of infinitely recyclable, sustainable glass packaging solutions for brand owners around the world.

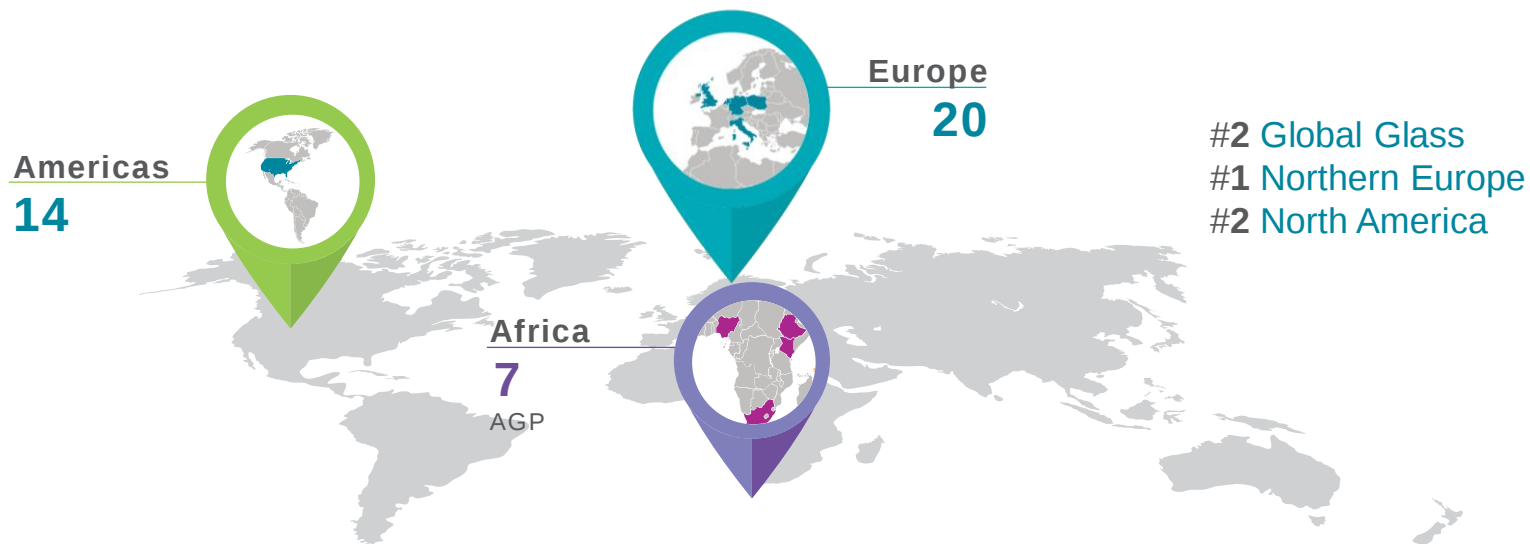


Consistent delivery of
market-leading
innovation, quality
and customer service

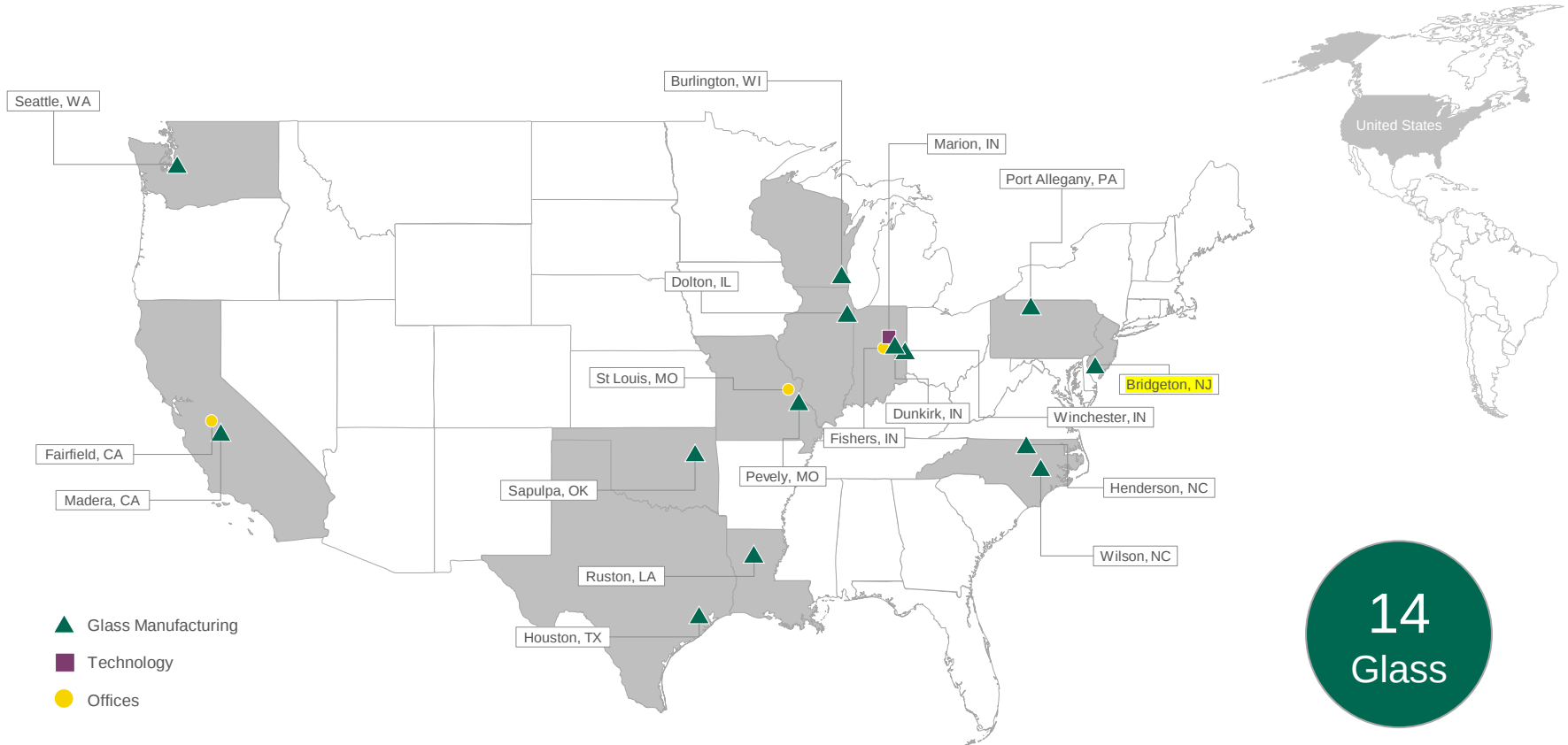
We create environments
where our people feel
valued and their
achievements celebrated

As a producer of
sustainable packaging,
we are committed to
meeting the
requirements of a true
circular economy

Ardagh Glass Packaging Footprint



Ardagh Glass Packaging Footprint



Core Values



Trust

- Mutual Respect
- Integrity
- Transparency



Teamwork

- Collaboration
- Shared Responsibility
- Communication



Excellence

- Continuous Improvement
- Innovation
- Sustainability



- Our core values of trust, teamwork and excellence are evident in our health and safety program 'BSafe!'
- BSafe! provides a safe working environment for our people and protects the well-being of visitors to our facilities.

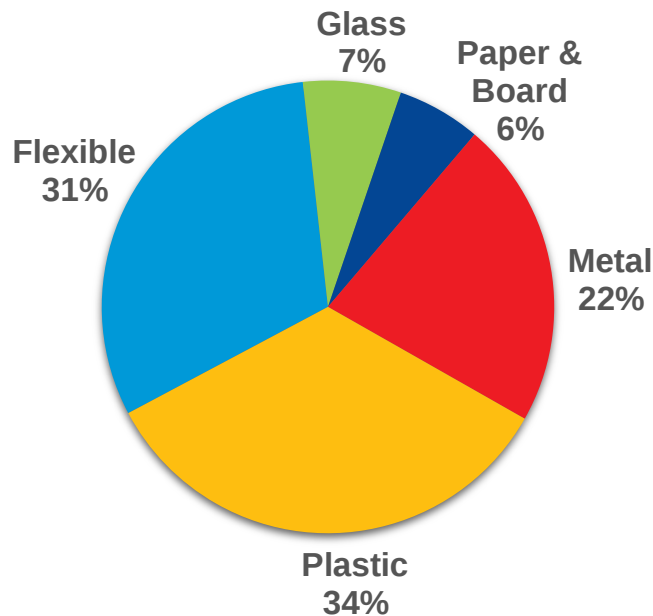


BSafe!



U.S. Packaging Container Industry

2021 Overview – domestic and imported food & beverage packaging

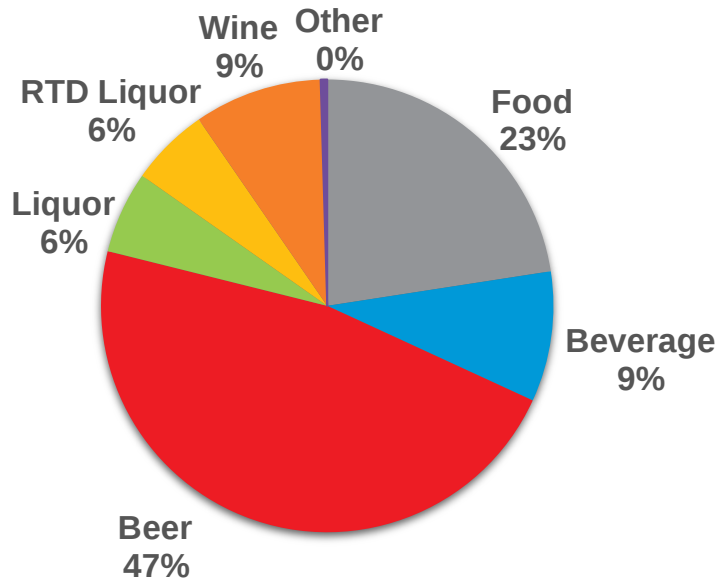


Volume: 600 billion units

Source: Based on Consumption – Global Data (Total unit volume by pack material)

U.S. Glass Container Industry

2021 Overview – shipments of domestically
manufactured glass



Gross

Source: Precision Consulting – assumes 95% reporting

Ardagh Glass Packaging - US: 2022 Overview

- Approximately 4,500 employees
- 14 glass manufacturing facilities
- Approximately 8 billion glass bottles and jars
- Leading domestic glass supplier to the U.S. food, beer, spirits and wine markets



Glass Color Offerings:

Ardagh Glass Packaging offers a wide range of colors for your packaging needs



Flint (FL)



Mist Green
(MG)



Georgia Green
(GG)



Spring Green (SG)



Emerald Green
(EG)



Champagne
Green (CG)



Antique Green
(AT)



Dead Leaf Green
(DL)



Amber (AM)



Charcoal Gray (CH)



Nordic Blue (NB)



Horizon Blue (HB)



Frost Blue (FB)



Cobalt Blue (CB)



Orchid (OR)

Glass colors are simulated – request glass samples for actual color evaluation



**Ardagh Glass Packaging
– Bridgeton Plant**



Ardagh Glass Packaging – Bridgeton Plant

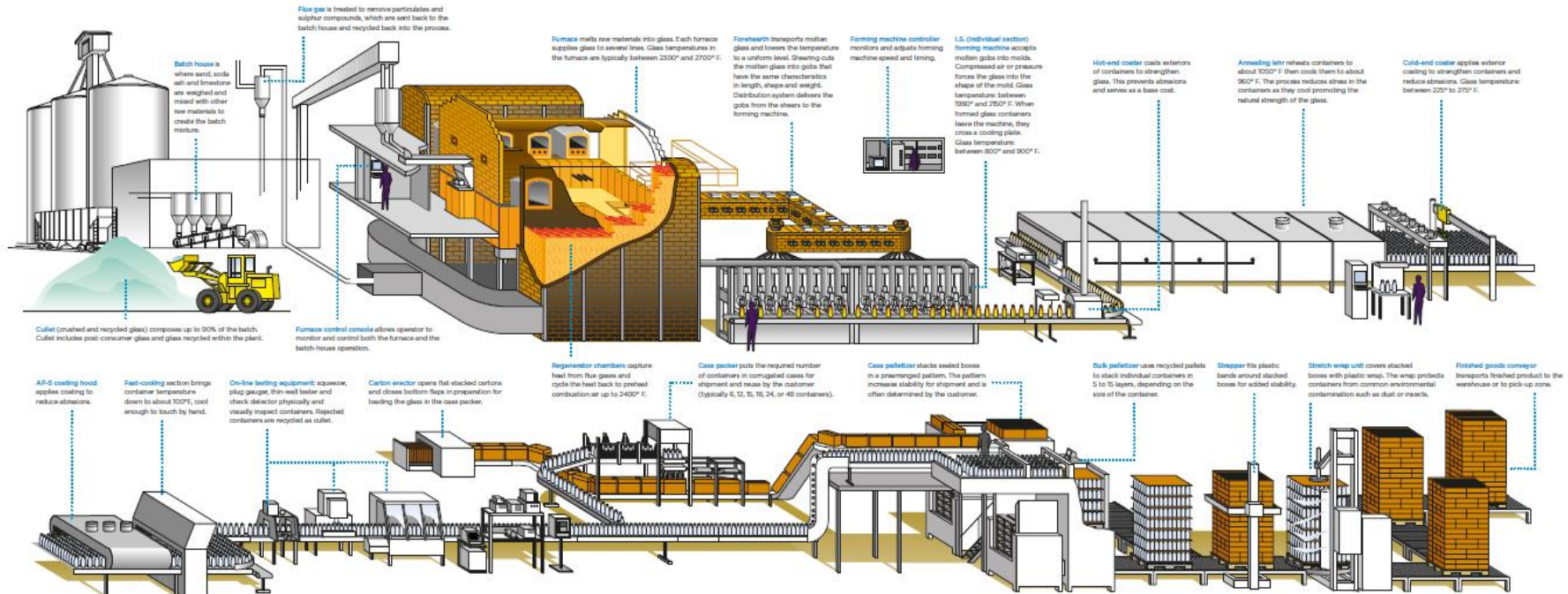
- Plant History
 - 1966: Built by Leone Industries
 - 2012: Purchased by Ardagh Group; name changed to Ardagh Glass Inc.
- Facility Specifics
 - 35 acres; 15 acres at the plant and 20 acres at an off-site warehouse
 - 447,000 total square footage: 146,000 square feet of space at the plant; 65,000 square feet of space at the warehouse; and 236,000 square feet of space at an off-site warehouse
 - Approximately 322 hourly and 42 salaried employees (364 total)
 - More than 50% of the plant employees reside in Cumberland County
- Manufacturing Elements
 - Manufacture glass containers for the food, beverage, and spirits markets
 - Two furnaces that use 476 tons of raw and recycled materials per day
- Operations
 - Continuous: 7 days per week / 365 days per year
 - Manufactures approximately 1.5 million containers per day

Glassmaking Process Overview

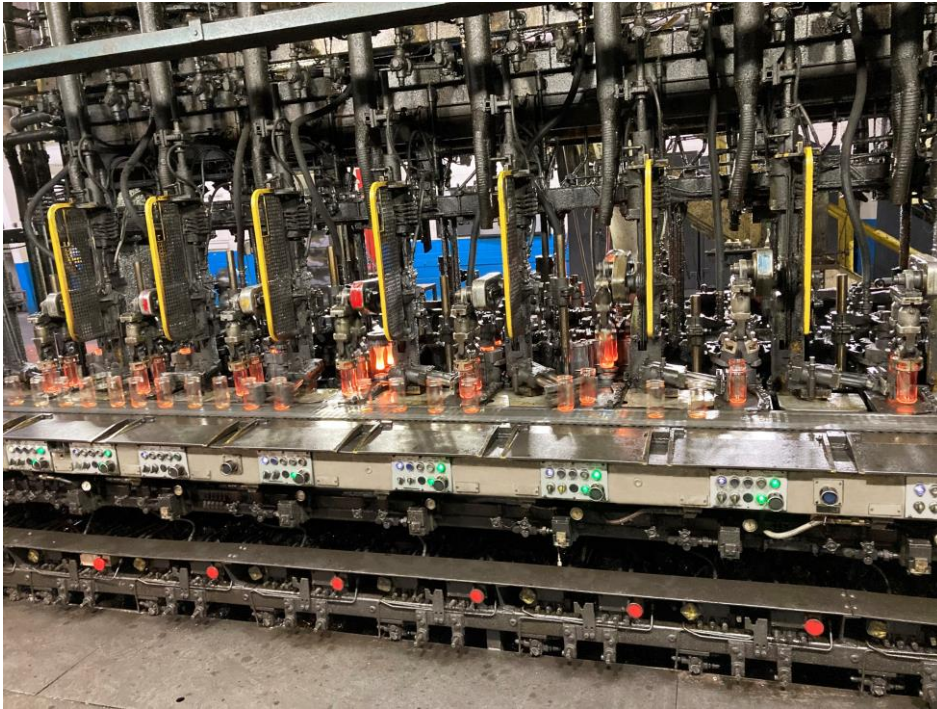
<https://www.youtube.com/watch?v=LhVmTvR5VWg>

Glassmaking Process Overview (continued)

Inside an Ardagh glass plant



Ardagh Glass - Bridgeton



Ardagh Glass - Bridgeton



Ardagh Glass Bridgeton, NJ Sustainability Programs

Ardagh Glass Packaging is a global supplier of recyclable glass packaging for brand owners in the beverage, food, pharmaceutical and chemical sectors. The purity of glass and its preservative qualities are well-established and enhanced by its infinite recyclability. Glass packaging enables our customers to customize, differentiate and deliver premiumization.



Glass: A Sustainable Package



Protects the Product

- Excellent shelf life (guards against moisture and oxygen invasion)
- Maintains true taste



Protects the Consumer

- Chemically inert
 - No protective coating inside
 - Does not leech harmful chemicals into the product
- Rated GRAS (Generally Recognized As Safe) by the FDA



Protects the Environment

- 100% and endlessly recyclable
- Recycled glass reduces energy consumption for melting and producing containers



A low-angle, upward-looking photograph of two scientists in a laboratory. The scientists, a man and a woman, are wearing safety glasses and blue nitrile gloves. They are holding round-bottom flasks; the man's flask contains a blue liquid, and the woman's flask contains a red liquid. They are both smiling at the camera. The background is a plain, light-colored wall with some lab equipment visible in the distance.

Innovation

Our global innovation program is led by our dedicated teams principally located in Bonn, Germany.

We proactively drive innovation in collaboration with our customers across new product applications and processes in the delivery of sustainable packaging solutions to our customers as part of a true circular economy.

Our team has been granted 50+ worldwide patents and 100+ intellectual property rights.



Innovation

- Ardagh Glass Packaging

Ardagh maintains its leading position through its commitment to pioneering packaging solutions.

Our dedicated R&D resources offer concept development, material and shelf-life testing enabling us to lead the market in raw material reduction and energy efficiency.

Sustainability

“

Our aim is to minimize any environmental impact of our business while remaining economically sustainable and socially responsible.

”

Our Sustainability Strategy

Our sustainability strategy



ENVIRONMENT AND ECOLOGY

Our sustainability levers

Minimise our GHG emissions

- Get to 100% renewable energy
- Hybrid furnace
- Recycled content increase
- Product design
- Energy efficiency projects
- Low carbon transport
- Sustainable sourcing
- Minimize NOx

Minimise our ecological impact

- Maintain excellence on water management
- Support increased recycling and use of recycled content
- Promote circularity narratives on use of infinitely recyclable materials

Our direct link with UN's Sustainable Development Goals



SOCIAL

Our people & our communities

- Excellence on health and safety
- Increase our retention, promotion and inclusion of diverse profiles
- Engage proactively with our local communities through grassroots 'Giving Back' initiatives



Our sustainability filter

Sustainability only has a sustainable impact if it is economically viable both long and short term

As a leading supplier of infinitely recyclable glass packaging, our sustainability actions are founded on the three pillars of our environmental and social sustainability strategy:

1. Minimize our greenhouse gas (GHG) emissions
2. Reduce our ecological impact
3. Support our people and our communities

In 2021, we launched a \$50 million program with Project Lead The Way (PLTW) to deliver science, technology, engineering and mathematics (STEM) education to students from pre-kindergarten through to high school in 24 communities in which we operate across the U.S. It is expected that over the next 10 years, Ardagh-sponsored education programs will benefit more than 500,000 young students across 2,000 schools in Ardagh's U.S. communities.

Social Sustainability – Project Lead the Way

Ardagh launches Project Lead the Way (PLTW) in 2021

- Program delivers science, technology, engineering and mathematics (STEM) education to students from pre-kindergarten through to high school
- 24 communities in which we operate across the U.S. are participating
- It is expected that over the next 10 years, Ardagh-sponsored education programs will benefit more than 500,000 young students across 2,000 schools in Ardagh's U.S. communities.

Project Lead the Way - Bridgeton

- \$30,000 for Cherry Street Middle School STEM program
- Approximately \$300,000 set aside for Pre-K through Grade 12 schools within Bridgeton Public School District, Millville School District, and Vineland School District

Our Sustainability Measurement Program



The Carbon Disclosure Project (CDP) is a global environmental impact non-profit organization that drives companies and governments to reduce their greenhouse gas emissions, safeguard water resources and protect forests.



EcoVadis is a sustainability rating platform which assesses the sustainability policies, actions and reporting of suppliers in the categories of environment, labor practices, fair business practices and sustainable procurement.



Sedex is a networking platform aimed at sharing information on policies, procedures and standards at production facility level. The information is shared with key customers and may be reinforced by external, so-called SMETAs (Sedex Members' Ethical Trade Audits).

For more, [click here](#) to read our latest Sustainability Report.

Sustainability

Ardagh's packaging has a central role to play in helping our customers meet their sustainability objectives and commitments.

Sustainability has always been a central focus at Ardagh and we are encouraged by the growing awareness of the merits of infinitely recyclable solutions.

As part of functional engagements with our customers, our team addresses key sustainability challenges such as climate change, water stewardship and responsible sourcing.

In 2019, we established our Board Sustainability Committee along with becoming a signatory to the United Nations Global Compact, the world's largest corporate sustainability initiative.



Ardagh was awarded a gold-level certification by external rating agency, EcoVadis for 2021.

The Carbon Disclosure Project (CDP) awarded Ardagh its Leadership Class ratings for sustainability performance scoring A- for climate change, A- for water management and A for supplier engagement for 2021.

For more, [click here](#) to read our latest Sustainability Report.

- Each year, the U.S. Environmental Protection Agency (EPA) awards manufacturing facilities that demonstrate superior energy performance
- On average, these facilities perform within the top 25% nationwide for energy efficiency
- In 2021, two of Ardagh Glass Packaging's facilities were awarded the ENERGY STAR® Plant Certification:
 - **Bridgeton, NJ**
 - **Madera, CA**
- Ardagh was also awarded an ENERGY STAR® building certification for its distribution center in Fairfield, CA
- Bridgeton has been awarded the ENERGY STAR® certification **seven** years in a row (2015 – 2021)



Ardagh Glass – North America Energy Star Certified Sites

Ardagh Glass - North America Energy Star Certified Sites											
	Year Certified (Based on Prior Calendar Year Data for EPI Ranking)										
Plant	2010	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Burlington											
Dunkirk											
Madera											
Milford											
Sapulpa											
Seattle											
Port Allegany											
Fairfield											
Winchester											
Bridgeton											
Henderson											
Lincoln											
Pevely											
Ruston											
Wilson											
Dolton											
	4	3	5	5	6	5	4	5	4	4	4
	49										

Ardagh Glass - Bridgeton Solar Fields Project

In 2019, our Bridgeton, NJ facility and our partner KDC Solar announced that the 5.5 MW net-metered solar project built and operated by KDC Solar is supplying solar power to Ardagh's Bridgeton glass production facility.

As a leading manufacturer of infinitely recyclable glass bottles and jars, Ardagh is continuously looking for new opportunities to increase our use of green energy to minimize negative environmental impact while remaining economically sustainable and socially responsible.



Ardagh Glass – Bridgeton Solar Fields Project

Key features of the solar project include:

- 5.5 MW DC
- 15,930 PV modules supported by 1,283 racking posts
- 61 pieces of electrical equipment
- 60 miles of wire installed
- 20-acre solar facility
- 2 separate arrays connected via directional drilling under a roadway and under wetlands

Ardagh Glass – Bridgeton Solar Fields Project

- Press release that KDC Solar issued at the beginning of project: <https://kdc solar.com/kdc-solar-announces-closing-of-5-5-mw-solar-power-project/>
- Press release at time of project completion: <https://kdc solar.com/ardagh-group-now-powered-by-solar-energy/>
- KDC Solar Video: <https://youtu.be/X-l1ZssMRJc>

Ardagh Glass – Bridgeton Water Reuse Project

- City water is used to cool cullet (glass not formed into quality containers)
- Water is currently used once prior to discharge to the City wastewater treatment plant
- Finishing the design for a water recirculation system
- Project benefits
 - Significant reduction in water usage (estimate 70 – 80% reduction)
 - Significant reduction in wastewater discharge volume
 - Improved water usage monitoring
 - Improved operator safety (water temperature monitoring)
 - Improved equipment protection
 - Ability to expand the recirculation system for future increased flow and/or production requirements

ISO14001 Certification

- Ardagh Glass Packaging's Fishers, IN headquarters and 13 of its glass production facilities have achieved ISO14001:2015 certification
- ISO14001 is a family of environmental management standards advanced by the International Organization for Standardization. ISO14001 provides the framework to help organizations minimize their impact on the environment, comply with applicable laws and regulations, and work toward continual environmental improvement.
- The following facilities within Ardagh Glass Packaging are ISO14001:2015 certified:
 - **Bridgeton, NJ**
 - **Burlington, WI**
 - **Dolton, IL**
 - **Dunkirk, IN**
 - **Fishers, IN**
 - **Henderson, NC**
 - **Madera, CA**
 - **Pevely, MO**
 - **Port Allegany, PA**
 - **Ruston, LA**
 - **Sapulpa, OK**
 - **Seattle, WA**
 - **Wilson, NC**
 - **Winchester, IN**



Glass Recycling Coalition (GRC)

- Formed in April 2016
- Brings together a diverse membership of companies and organizations to make glass recycling work: glass manufacturers, haulers, processors, materials recovery facilities, capital markets, end markets and brands that use glass to showcase their products
 - Promotes best practices in glass recycling
 - Strengthens glass markets and the value chain
 - Provides solutions-oriented resources for local and state governments
 - Collaborates to build a strong foundation for success of glass recycling in the future
 - Partners with Glass Champions to seek solutions that increase glass recycling
- Ardagh Glass Packaging is an active member since 2020
- Learn more at glassrecycles.org



**GLASS RECYCLING
COALITION**

M E M B E R
glassrecycles.org

Glass Packaging Institute (GPI)

- Founded in 1919 as the Glass Container Association of America, the Glass Packaging Institute (GPI) is the trade association representing the North American glass container industry.
- On behalf of glass container manufacturers and their supply chain partners, GPI promotes glass as the optimal packaging choice, advances environmental and recycling policies, advocates industry standards, and educates packaging professionals.
- Ardagh Glass Packaging is an active member (since 1933)
- Learn more at gpi.org



Additional Organizations

- **Glass Recycling Foundation (GRF):** the Glass recycling foundation is a non-profit, 501c(3) organization that promotes increased collection and recycling of glass in municipalities through grants of pilot projects and investments by startups, non-profits, and local governments.

Ardagh is an active Board of Directors member of the GRF, contributing to the GRF financially to support their grants, and participate in monthly meetings to review grants and discuss issues with glass recycling with other Board members, which include consumer brands, other glass packaging producers, and recycled glass processors.

- **Container Recycling Institute (CRI):** a think-tank based in California that is a non-profit 501c(3) organization that is a leader in utilizing analytics and information to improve the collection and quality of recycled packaging in the U.S.

Ardagh is a financial supporter and a Board of Directors Member of CRI. The CRI is active in advocating policies to state and local governments to encourage recycling and maintaining strong bottle deposit laws, which provide high-quality, high-quantity supplies of glass.

Ardagh Glass Bridgeton, NJ Community Involvement

Historical Community Involvement Projects

- M25 Initiative “Feed a Family” program, May and December 2020
- Manna from Heaven, 2020
- Holiday toy drive (Division of Child Protection & Permanency and Salvation Army), 2018 – 2021

2022 Community Involvement Projects

\$25,000 set aside in 2022 budget for each Ardagh Glass plant (including Bridgeton) for an environment-related community project

- Please submit ideas to the microsite (<http://ardaghgroup.pcin.co.uk/bridgeton>)

Ardagh Glass
Bridgeton, NJ
Applicable Regulatory Programs and
Permits

Storm Water Discharge General Permit

- 5G2 – Basic Industrial Storm Water General Permit No. NJ0088315
- Ardagh Glass authorization to discharge storm water (NJPDES Permit No. NJG0112135)
- Effective 2/1/2018 – 1/31/2023
- Requirements:
 - Storm water pollution prevention plan (SWPPP)
 - Annual certification of comprehensive storm water compliance inspection (due January – March)

Cumberland County Utilities Authority (CCUA) Industrial Discharge Authorization

- Authorization No. A002
- Effective 1/1/2020 – 12/31/2024
- Discharge points D001 (South East Ave) and D002 (emergency discharge to Industrial Park Pump Station)
- Monthly discharge monitoring reports
 - Quantity of discharge (flow) (limit of 0.20 mgd)
 - Chemical oxygen demand (COD) (limit of 3,000 mg/l)
 - Total suspended solids (TSS) (limit of 800 mg/l)
 - Oil & grease (limit of 100 mg/l)
 - pH (limit of 6.0 – 9.0)

Physical Connection Permit No. 1901-WPC190002

- Backflow preventer permit
- Annual January renewal and fee payment (January 12, 2022)
- Six backflow preventer valves
- Requirements:
 - Inspected and tightness tested quarterly by certified tester
 - Associated records maintained for five years

Small Quantity Generator of Hazardous Waste

- Generate between 220 and 2,200 lbs of hazardous waste per month
- EPA ID No. NJD064254147
- During 2021:
 - One drum (70 lbs) waste methyl ethyl ketone (MEK) to Safety-Kleen in KY
 - One drum (10 lbs) waste printing ink to Clean Harbors in AR

NOTES:

Large quantity generator of hazardous waste (greater than 2,200 lbs per month)

Very small quantity generator of hazardous waste (less than 220 lbs per month)

Radiation Source Permit

- Permit No. 749485
- XRF gun (measures lead content of glass)
- Annual permit renewal fee payment

Soil Remedial Action Permit

- Permit No. RAP220001; issued 5/1/2022 as a result of administrative changes
- Permit in place since June 2013
- 4,000-Gallon used oil underground storage tank (UST) closed in place with minimal residual soil contamination (total petroleum hydrocarbons – TPH)
- Deed restriction of land use (no child care facility or school)
- Biennial inspection and report
- Annual fee payment

Title V Operating Permit Status

- Current Permit No. BOP210003
 - Expired 10/15/2018 (facility operating under “application shield”, in accordance with current permit).
- Renewal (BOP170002) application submitted in 2016 and is still being reviewed by NJDEP
 - Most current pre-draft dated 12/8/2021
 - Accomplishments in preparing pre-draft permit:
 - Review of emission sources for accuracy
 - Review of emission calculations for significant and insignificant sources
 - Additional/new permit requirements:
 - Raw material handling recordkeeping
 - Opacities to be observed by Method 9-trained personnel
- Conducted compliance stack tests in March and August 2022 although Renewal not finalized
- Renewal (BOP170002), once finalized, will expire five years from date of issue

Title V Operating Permit Status (continued)

- Furnace 2 rebricking (partial rebuild) currently scheduled for July 2023
- General scope – maintenance and repair only
 - Furnace refractory
 - Replace various melter surfaces/doghouse & arch/melter crown
 - Various surfaces overcoated
 - New blocks in various locations
 - General repairs
 - Furnace structure
 - Replace exhaust stack refractory/flues/binding
 - General repairs & painting
 - Furnace mechanics
 - Replace burners (new model, same capacity)
 - General repairs, replacement, & painting
 - Furnace distributors
 - Replace top paving/entrance block covers/exhaust openings
 - Replace limited number of burners (same capacity)
 - Furnace forehearths
 - Replace substructure refractories/channel blocks & covers/transition block
 - General repairs
 - Furnace/forehearths/distributor electrical
 - Replace control panel cooling units
 - Instrumentation replacement/refurbishment
 - New camera system
 - Temperature monitoring to gas safety circuits
 - Edmeston system repair
 - Batch & cullet pre-heaters, particulate control

Title V Operating Permit Status (continued)

- Furnace 2 rebricking (continued)
 - No increase in furnace production capability
 - No increase in fuel usage
 - No design changes
 - No increase in air emissions
- Scope details expected to be submitted to NJDEP during the fourth quarter of 2022

Thank You!

Thank you for taking the time to learn more about Ardagh Glass Packaging.

Questions?

Written questions/comments must be submitted to:

Link to microsite: <http://ardaghgroup.pcin.co.uk/bridgeton>

Comment period will end October 1, 2022

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(November 1, 2022)