



# Sustainability Report 2022 for the 2021 calendar year







# Sustainability is part of our DNA



At Armstrong, providing **service to the world, who by reason of such service becomes our customer** has been one of our three corporate values for decades. More recently, this commitment to sustainability has been articulated in our Planet Proposition, which covers not only the sustainability values we provide our customers, but also how we want to go about the process of delivering these values and how we interact with, and increase environmental awareness with the communities in which we operate.

Today, we are driven to develop innovative, high-value, energy-saving solutions for our customers and ensure that we continue to reduce our energy use and GHG emissions in our own facilities. This environmental stewardship increases our brand value and customer loyalty thereby allowing us to complete more effectively in our market, ultimately ensuring the future sustainable growth of the organisation.

At Armstrong, we believe that environmental stewardship is an integral part of why we exist and how we go about our business. With the development and implementation of innovative technologies, this environmental stewardship comes with a cost advantage for our customers, our planet, and ourselves. This report highlights some poignant examples of that.

Todd Rief  
**Chief Executive Officer**

# Key Facts

Our performance in 2021

7.2%



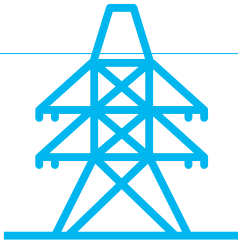
Scope 1 emissions reduction

65



Number of Sustainability Social media posts

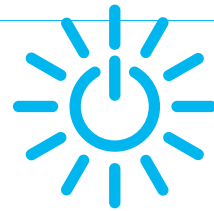
-5%



Scope 2 emissions reduction

158,815

kWh



Solar energy generated

100%



Production facilities ISO 14001:2015 certified

100% of our Production facilities\* around the world are certified to ISO 14001:2015 Environmental Management System (EMS)

84



Educational webinars delivered on energy conserving HVAC technologies

\* Our newly acquired production facility in Romania is in the process of becoming certified



# Introduction

## 1.0

Sustainability  
at  
Armstrong

### Our Solutions

By designing & supplying industry leading energy-efficient and eco-friendly fluid flow solutions, we help our customers reduce their energy consumption, save money and lower their carbon emissions.

**WE HELP OUR CUSTOMERS REDUCE THEIR ENERGY CONSUMPTION, SAVE MONEY AND LOWER THEIR CARBON EMISSIONS**



### Our Environment

By applying stringent environmental standards to our operations, measuring our performance & continually raising the bar we're reducing our own consumption of valuable resources and making our plants a better and more comfortable place to work in.

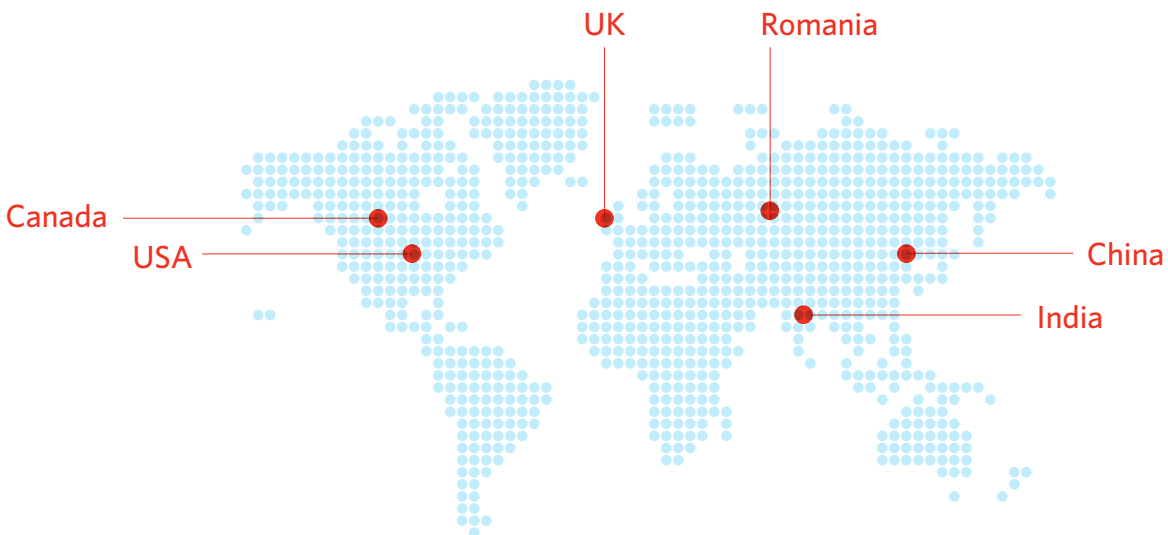
**WE'RE REDUCING OUR OWN CONSUMPTION OF VALUABLE RESOURCES AND MAKING OUR PLANTS A BETTER PLACE**



### Our Community Advocacy

And by educating and supporting the global community (our stakeholders and neighbours) to make environmentally responsible choices at work and at home we're helping the community at large become more sustainable.

**WE'RE HELPING THE COMMUNITY AT LARGE BECOME MORE SUSTAINABLE**



### GHG EMISSIONS PERFORMANCE

YEAR ENDED DECEMBER 31, 2021	CANADA	USA	UK - M	UK - D	INDIA ADPL	INDIA AMC	ROMANIA	CHINA
Total natural gas consumption in kWh	2891805	170139	616885	263187	0	0	171695	0
Scope 1 in tCO <sub>2</sub>	516.53	288.99	110.66	66.83	0	0	30.8	0
Total electricity consumption in kWh	1647657	1032371	207951	168073	122996	184950	193548	215535
Scope 2 in tCO <sub>2</sub>	47.28	190.37	50.87	41.26	148.56	98.79	69.43	142.02
Solar PV Generated from our 250 kWp system in kWh			155815					

The Net  
Zero Carbon  
Buildings  
Commitment



Armstrong was one of the first 50 organizations to join the Net Zero Carbon Buildings Commitment (launched in September 2018). The Net Zero Carbon Buildings Commitment challenges companies, cities, states and regions to reach Net Zero operating emissions in their portfolios by 2030, and to advocate for all buildings to be Net Zero in operation by 2050.

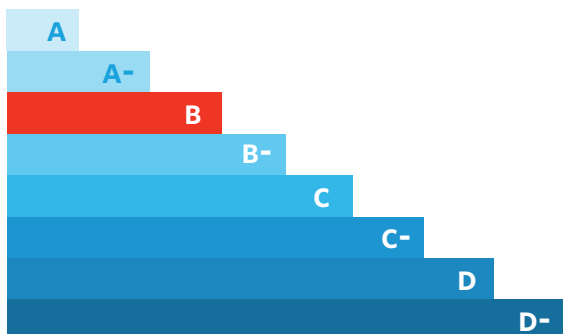
By setting ambitious ‘absolute’ targets, the Commitment aims to maximize the chances of limiting global warming to below 2 degrees, and ideally below 1.5 degrees, by drastically reducing operating emissions from buildings.

<https://www.worldgbc.org/thecommitment>



Armstrong Fluid Technology has been reporting on our ghg emissions reduction performance since 2016 to the CDP (formerly the Carbon Disclosure Project) with data supplied by the CDP accredited software ACCUVIO. GRI, SASB, CDP and CDSB set the frameworks and standards for sustainability disclosure, including climate-related reporting, along with the TCFD recommendations. The Task Force on Climate-Related Financial Disclosures (TCFD) is an organization that was established in December 2015 with the goal of developing a set of voluntary climate-related financial risk disclosures. The IIRC (The International Integrated Reporting Council) provides the integrated reporting framework that connects sustainability disclosure to reporting on financial and other capitals. Taken together, these organizations guide the overwhelming majority of sustainability and integrated reporting.

**UNDERSTANDING THE SCORE REPORT**



Armstrong Fluid Technology received a B in 2019 which is in the Management band. This is higher than the North America regional average of C, and higher than the Electrical & electronic equipment sector average of C.

- Leadership (A/A-):** Implementing current best practices
- Management (B/B-):** Taking coordinated action on climate issues
- Awareness (C/C-):** Knowledge of impacts on, and of, climate issues
- Disclosure (D/D-):** Transparent about climate issues



Our  
Products  
and  
Services

**2 by 22**



At the 2018 Global Energy Summit in Toronto, Armstrong announced a commitment to reducing Greenhouse Gas emissions among its installed customer base by 2 million tons by the year 2022 and issued a challenge to industry participants to set similarly aggressive targets for the same 4-year time frame.

Organizations globally are being driven to achieve a zero-footprint future and we believe this can best be achieved through enabling technologies, solutions and services. At Armstrong we are committed to develop and supply solutions that are lowest installed cost, lowest operational cost, and create the lowest environmental footprint. To validate our claims, we launched a global validation effort across a wide range of customer types and applications. The results are available on our website. The company also significantly expanded the team of energy-savings specialists that will work closely with existing and new customers to measure, manage and enhance their current operations, and to reduce their Scope 2 Greenhouse Gas emissions.





# Our Environment 2.0

## — Case study

### **Solar Photovoltaic Panels at Manchester office**



In 2015, Armstrong completed a major renewable energy project at our Manchester site.

A 250 kilowatt peak (kWp) system was successfully installed over a roof area of 1,550 m<sup>2</sup>.

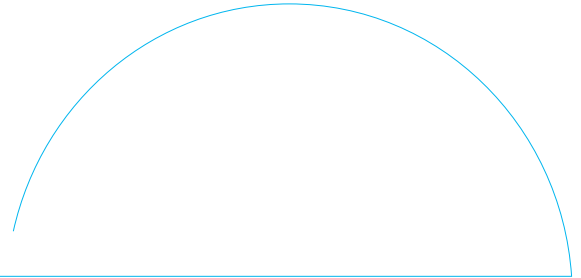
The system is up and running since January 2016 and has already started to reduce the carbon emissions and the costs associated with our electricity consumption.

In 2021 we generated 158,815 kWh of electricity. We exported 22,000 kWh of electricity to the grid. The balance was consumed in our plant.





# Our Community Advocacy 3.0



### Webinar Replays (51)

			
<b>Get the Most Out of Your Pumps with Higher Operating Speeds</b> by David Lee	<b>How to Open Buildings That Have Been Shut Down For Long Periods</b> by Tony Furst	<b>The Advantages of Hydronic Systems versus Variable Refrigerant Flow (VRF)</b> by Kazi Nasir	<b>Design Envelope Pump Operation, Testing and Commissioning</b> by David Lee
			
<b>Stories From the Field</b> by Peter Wolff, Chris Hartley & Kevin Wong	<b>Sensorless Pumping Pump Curves and System Analysis</b> by Zeljko Terzic	<b>The New Design Envelope Pump Controller - Navigating Menus For Quick, Easy Pump Commissioning</b> by Peter Wolff & Joe Tibando	<b>The Importance of Right Sizing Your Heat Exchangers to Achieve Maximum Efficiency and Cost Savings</b> by Redmond Hum
			
<b>Design Envelope Permanent Magnet motors and their application on Design Envelope Pumps</b> by Peter Wolff	<b>Variable Primary versus Primary/Variable Secondary Chilled Water Pumping</b> by Zeljko Terzic	<b>How Sprinkler Contractors can save time and money with Self-regulating, variable-speed fire pumps</b> by Steven Baird	<b>Changes in Building Occupancy &amp; Improving Performance in a New Work Environment</b> by Tony Furst
			
<b>Ask a Fire Safety Expert - Panel Discussion</b> by Steven Baird, Marcelino deCalis, Gianluca Ristagno & Neil Syson	<b>How Edge and Cloud Computing Technology Can Keep Your Building Operating Beyond Expectations</b> by Peter Thomsen	<b>Mission Critical Cooling &amp; Automation Solutions with focus on EVERCOOL</b> by Maggie Yuen and Anne-Laurence Chevallier	<b>Offsite-built packaged HVAC systems to support data center and hospital construction or expansion</b> by Dominic Cutts
			
<b>Ask the HVAC Building Performance Experts</b>	<b>Save energy, extend equipment life and assure tenant comfort through modern condenser water pumping</b> by Zeljko Terzic	<b>The Importance of Right-Sizing your booster</b> by Kazi Nasir	<b>Design Envelope Permanent Magnet Motor Circulators</b> by Michael Boudreau
			
<b>Save Time and Money with Repairable Circulators</b> by Ryan Coppola	<b>Ask an Armstrong Expert by SME Experts</b>	<b>In The Service of Others - Examples of Service and Success in Building Performance and Mechanical Systems during the COVID 19 crisis</b> by Brent Ross	<b>Armstrong Fire Safety Packaged Solutions for rapid, low-risk deployment</b> by Steven Baird

The Armstrong monthly webinars teach our customer community how they can reduce their carbon footprint and increase energy efficiency with informed upgrade decisions and a carefully constructed optimization path with Armstrong technologies.

In 2021 we delivered 84 webinars.

<https://armstrongfluidtechnology.com/en/resources-and-tools/education-and-training/webinar-library>



# Awards

## 4.0

UK Queen's Award for Enterprise

### CATEGORY: SUSTAINABLE DEVELOPMENT

Formally announced in the London Gazette on April 29, 2021, the Queen's Award for Enterprise recognizes Armstrong's leadership in sustainability, including improvements in daily operations, contributions to the sustainability of customers, and support for sustainability initiatives in local communities.

Now in its 55<sup>th</sup> year, the Queen's Enterprise Awards is the most prestigious awards program in the country. 205 organizations were recognized. Armstrong Fluid Technology is one of only 17 to receive an award in the Sustainable Development category and now also holds the distinction of being the first company in the commercial HVAC sector to receive this award.

Armstrong's day-to-day operations are guided by the core principles of Community, Service, Learning and Innovation. Through our values of Community and Service, we are driven to lead the global shift in responsible, sustainable energy use, and to develop innovative, high-value, energy-saving solutions.

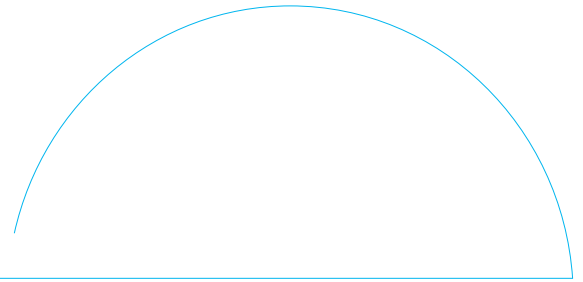
In 2013, Armstrong brought together its sustainability efforts to form a single global program, called the Planet Proposition, to drive progress towards more ambitious environmental targets. The tremendous sustainability improvements made through the Planet Proposition program have now been acknowledged through this globally recognized award. Sustainability is our core purpose and is a key driver of our business. Through our work to live the values of Learning and Innovation, we continue to reduce energy use and related greenhouse gas emissions in our own facilities. We also support local projects to help the community at large become more sustainable. We are very proud of the progress we've made through the Planet Proposition program to date.



# Sustainability Achievements 2021 and Sustainability Targets 2022-2025

## 5.0

SUSTAINABILITY ACHIEVEMENTS 2021	SUSTAINABILITY TARGETS 2022-2025
Scope 1 and Scope 2 emissions reduced 2.2% from 2020	25% reduction in electricity and gas consumption by end of 2025
Sustainability Surveys for key suppliers	Phased Sustainability Surveying of all suppliers
Sustainable Procurement Policy drafted	Continued development of strong policies and procedures to support our sustainability efforts
First Life Cycle Assessment Report authored in-house for the 3hp Tango pump	Generate Life Cycle Assessments and Environmental Product Declarations of products on demand
Roadmap for decarbonizing our global operations under the auspices of CEO	Continuous implementation of global energy reduction projects under the auspices of the Sustainability Council
Custom laser-cut cardboard shipping boxes and materially economical wood pallets with the smallest possible footprint, fabricated with screws not gunned nails for easy disassembly.	Continuous improvement of sustainably focused shipping methods for global operations; increased use of biodegradable packaging materials and reusable, materially economical, modular systems
Test Water Reclamation System collects water after equipment testing and pumps it to a tank to reduce potable makeup water. Cartridge filters remove sediments and UV lighting eliminates microbiological growth.	Continuous implementation of test water reclamation systems throughout our global operations
Implemented recycling administration through third-party certificates.	Comprehensive end-of-life pump recycling administration under extended producer responsibility programs
USGBC Live 2021 Education Program Presentation: HVAC Retrofit Best Practices for GHG Emissions Reduction	Continued advocacy for best practices in energy efficient HVAC technologies
BSRIA Conference 2021: Practical Pathways to Net Zero Program Presentation: Field Device technology and its place in Net Zero	Continued advocacy for best practices in energy efficient HVAC technologies
	TM65 forms for all products sold in the UK.



## EMBODIED CARBON STATEMENTS AND LCA-LIFE CYCLE ASSESSMENT

Armstrong Fluid Technology design engineers use solid modeling computer-aided design (CAD) and computer-aided engineering (CAE) programs. The built-in Sustainability Module evaluates the environmental impact of a pump throughout its life cycle. Using industry-standard life cycle assessment (LCA) criteria, the software generates reports on four key environmental indicators (carbon footprint, total energy consumed, impacts to air, and impacts to water). The CAD software generates a screening-level LCA that takes into account materials and typical manufacturing processes. This analysis is based on an environmental LCA database, a set of environmental impacts derived from empirical results obtained in the field. In 2020, Armstrong decided to step up its in-house capability for LCA modelling. A small team is actively engaged in utilizing tools and methodologies for performing Life Cycle Assessments on our products in order to respond to customer requests for embodied carbon statements, Life Cycle Assessments and Environmental Product Declarations.

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