ARMSTRONG

Sustainability Report 2023
for the 2022 calender 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.

Charles Armstrong
Executive Chairman

What are Sustainable Development Goals?

The Sustainable Development Goals (SDGs)

were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

There are 17 goals, and they are integrated, so that action in one area will affect outcomes in others, and so that development must balance social, economic and environmental sustainability. It is broadly recognized that the business sector has a major role to play, and that the SDGs will mobilize trillions of dollars of investment and create new business opportunities.

Each of the 17 goals has a unique representative symbol to make referencing the SDGs clear and simple.

What are the priority SDGs at Armstrong

As a global company, Armstrong's facilities, activities, employees, products and services touch upon and contribute to several of the 17 SDGs. However, from a strategic perspective Armstrong Fluid Technology mainly contribute to the following:

- Goal 7: Affordable and clean energy
- Goal 9: Industry, innovation and infrastructure
- Goal 11: Sustainable cities and communities
- Goal 12: Responsible consumption and production
- Goal 13: Climate action

Key Facts

Our performance in 2022

5%

tCO2e/m² reduction

106

Number of Sustainability Social media posts

1.4%

Energy intensity reduction

206,972
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

Report to carry out an independent verification of 2022 electricity and natural gas consumption.

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

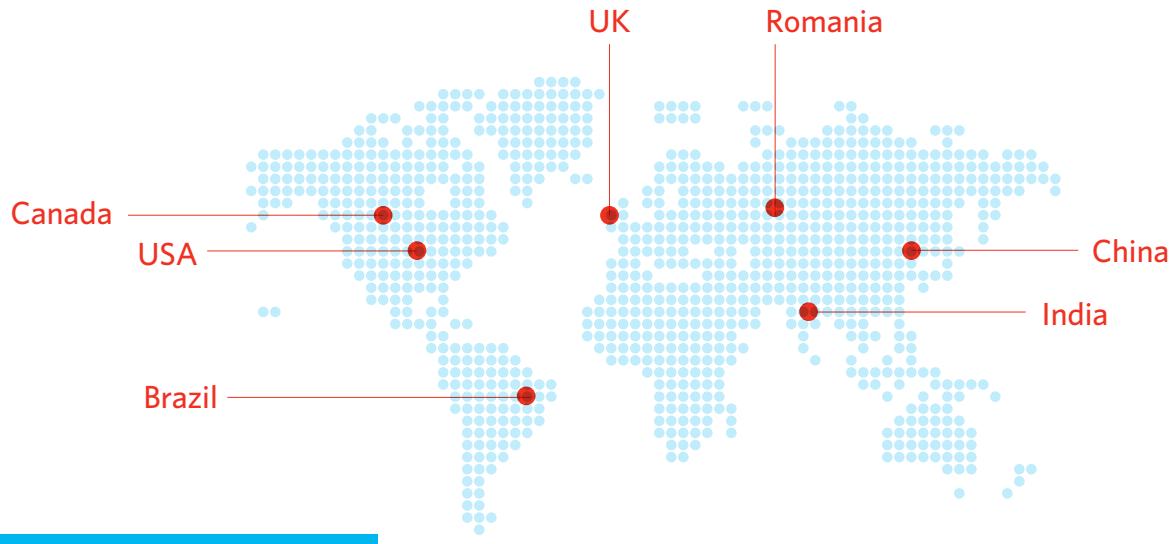
By applying stringent environmental standards to our operations, measuring our performance & continually raising the bar we're reducing our own consumption of valuable resources and making our plants a better and more comfortable place to work in.

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, 2022	CANADA	USA	UK - M	UK - D	INDIA ADPL	INDIA AMC	ROMANIA	CHINA	BRAZIL
Total natural gas consumption in kWh	3569400	1310322	501488	207029	0	0	113640	0	
Scope 1 in tCO_2	574.06	235.8	90.26	43.13	0	0	20.45	0	
Total electricity consumption in kWh	1848594	10439611	228103	176347	108465	176430	195651	359104	34088
Scope 2 in tCO_2	50.68	192.6	55.8	37.26	87.11	141.7	70.18	236.61	3.65
Solar PV Generated from our 250 kWp system in kWh			206972						

* Grant Thornton LLP has been commissioned to carry out an Independent Practitioner's Limited Assurance Report of our 2022 electricity and natural gas consumption

The Net Zero Carbon Buildings Commitment

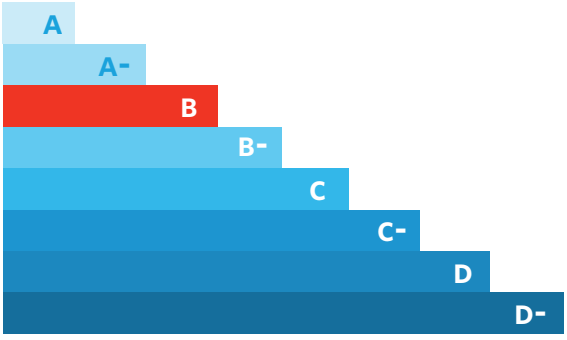
Armstrong was one of the first 50 organizations to join the Net Zero Carbon Buildings Commitment (launched in September 2018). The Net Zero Carbon Buildings Commitment challenges companies, cities, states and regions to reach Net Zero operating emissions in their portfolios by 2030, and to advocate for 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 and in 2021 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.

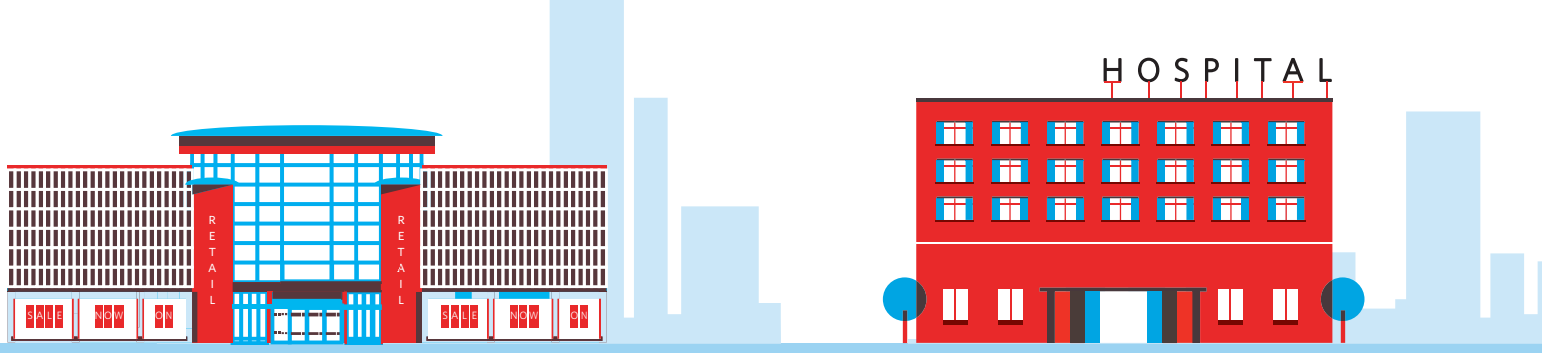
Leadership (A/A-): Implementing current best practices
Management (B/B-): Taking coordinated action on climate issues
Awareness (C/C-): Knowledge of impacts on, and of, climate issues
Disclosure (D/D-): Transparent about climate issues

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

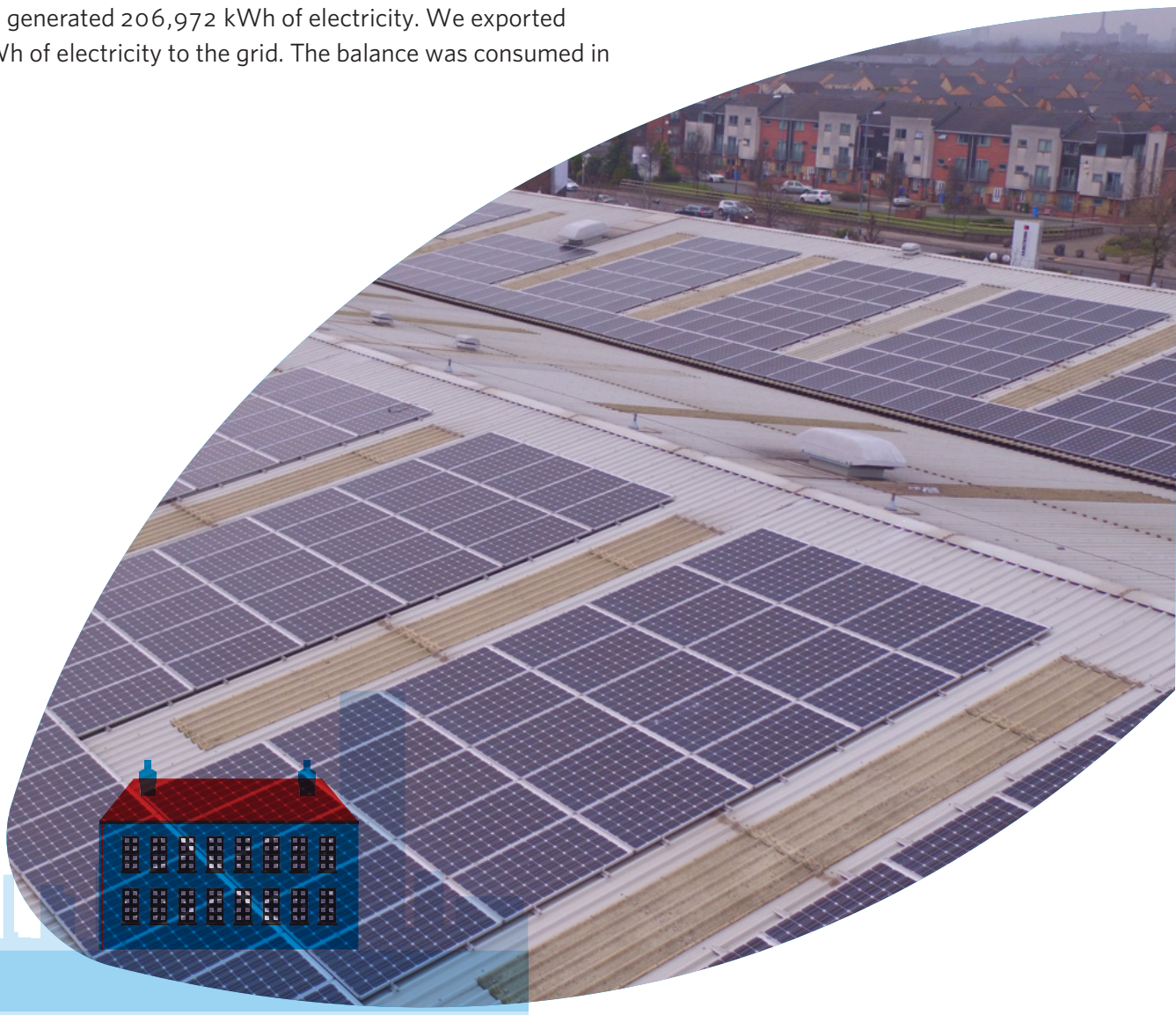
Solar Photovoltaic Panels at Manchester office

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^2.

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 2022 we generated 206,972 kWh of electricity. We exported 28,960 kWh of electricity to the grid. The balance was consumed in our plant.



Our Community Advocacy 3.0

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.

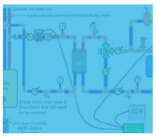
In 2022 we delivered 77 webinars.

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

Webinar Replays **(51)**

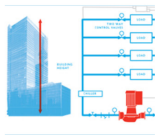

Get the Most Out of Your Pumps with Higher Operating Speeds by David Lee


How to Open Buildings That Have Been Shut Down For Long Periods by Tony Furst

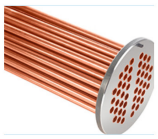

The Advantages of Hydronic Systems versus Variable Refrigerant Flow (VRF) by Kazi Nasir


Design Envelope Pump Operation, Testing and Commissioning by David Lee

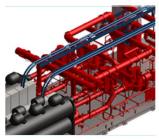

Stories From the Field by Peter Wolff, Chris Hartley & Kevin Wong


Sensorless Pumping Pump Curves and System Analysis by Zeljko Terzic


The New Design Envelope Pump Controller - Navigating Menus For Quick, Easy Pump Commissioning by Peter Wolff & Joe Tibando


The Importance of Right Sizing Your Heat Exchangers to Achieve Maximum Efficiency and Cost Savings by Redmond Hum


Design Envelope Permanent Magnet motors and their application on Design Envelope Pumps by Peter Wolff


Variable Primary versus Primary/Variable Secondary Chilled Water Pumping by Zeljko Terzic


How Sprinkler Contractors can save time and money with Self-regulating, variable-speed fire pumps by Steven Baird


Changes in Building Occupancy & Improving Performance in a New Work Environment by Tony Furst


Ask a Fire Safety Expert - Panel Discussion by Steven Baird, Marcelino deCelis, Gianluca Ristagno & Neil Syson


How Edge and Cloud Computing Technology Can Keep Your Building Operating Beyond Expectations by Peter Thomsen

Mission Critical Cooling & Automation Solutions with focus on EVERCOOL by Maggie Yuen and Anne-Laurence Chevalier


Offsite-built packaged HVAC systems to support data center and hospital construction or expansion by Dominic Cutts


Ask the HVAC Building Performance Experts


Save energy, extend equipment life and assure tenant comfort through modern condenser water pumping by Zeljko Terzic


The Importance of Right-Sizing your booster by Kazi Nasir


Design Envelope Permanent Magnet Motor Circulators by Michael Boudreau


Save Time and Money with Repairable Circulators by Ryan Coppola


Ask an Armstrong Expert by SME Experts


In The Service of Others - Examples of Service and Success in Building Performance and Mechanical Systems during the COVID 19 crisis by Brent Ross


Armstrong Fire Safety Packaged Solutions for rapid, low-risk deployment by Steven Baird

Advocacy 4.0

Canada's Green Buildings Strategy needs a solid foundation

SIGNATORY: CANADA GREEN BUILDINGS STRATEGY

Canada's green building sector is one of the best solutions to reduce carbon emissions, increase jobs, and grow the economy. In fact, supporting green building through proactive policies and investments could triple the number of jobs to almost 1.5 million, contribute $150 billion to Canada's GDP, and result in a reduction of 53 MtCO2e of carbon compared with 2018 levels – all by 2030.

Whether retrofitting buildings or constructing new zero-carbon ones, green buildings also have many other co-benefits, including improving air quality and occupant health, protecting ecosystems, greening Canada's supply chain, and aiding in housing affordability while ensuring more resilient buildings and communities.

With all the proven value green buildings provide, we support Natural Resources Canada's efforts to develop Canada's Green Buildings Strategy (GBS). Ensuring the strategy has credibility requires a solid foundation that includes ambitious and measurable milestones, support from all levels of government, and targeted investment. The strategy also must consider the lifecycle emissions of buildings and offer a long-term approach and solutions including on resilience to a changing climate. For best results, it must align with the building sector's innovation and investment cycles and the dramatic demand for an expanded and skilled workforce.

Decarbonization at speed and scale will depend on forward-thinking regulations and targeted government support for zero-carbon buildings and deep-carbon retrofits. Our main trading partners are already moving ahead, whether through regulations like the new Energy Performance of Buildings Directive of the European Union or the Inflation Reduction Act in the United States. With a strong GBS, Canada could keep pace and unlock significant economic and competitive benefits.

Closer to home, carbon emissions are also becoming a business risk for real estate owners. **Brown discounts** – where high carbon emissions reduce the investment a building can attract — are a growing consideration in real estate transactions. Keeping the real estate sector competitive will require the GBS set national guidelines, coordinate actions at all levels of government, and work with industry to implement robust tools and solutions.

A successful strategy must also prioritize and incentivize zero carbon transition planning to give building owners the tools to sequence needed interventions while controlling costs. Establishing a building or portfolio-wide plan is urgent when you consider that envelope improvements may happen only once by 2050 but can significantly impact the size and costs of heating and cooling systems.

Support for quality, accessible, and reliable building data is another area where the GBS could ensure a strong foundation for decarbonizing Canada's buildings. Building owners need data to determine where to invest and how to demonstrate the effectiveness of their sustainability actions. Governments also need data to guide policies, establish program baselines, and measure program effectiveness. The GBS should encompass tools for measuring building performance and establish benchmarks for labelling both buildings and materials using Life Cycle Assessment best practices, procurement, and performance data. By helping manufacturers report on their products' environmental performance, the government can strengthen its commitment to creating a viable, domestic supply chain of low-carbon building and retrofit materials.

Lastly, the GBS will necessitate a coherent and coordinated whole-of-government approach that adapts to current public programs and policies while being flexible enough to account for future ones. The GBS must coordinate with the Greening Government Strategy, align with building codes that should include operational and embodied carbon emissions by 2025, and support procurement policies such as the upcoming "Buy Clean" strategy. Beyond federal actions, the GBS could establish a consistent approach that other levels of government can follow to support the adoption of green building practices. A lack of harmonization is not conducive to scaling and accelerating green building innovation across Canada.

The government's commitment to adopting a Green Buildings Strategy is a significant and promising step. Green building offers Canada numerous economic, environmental, and social benefits, but to realize them fully, the GBS must build a strong foundation. Focusing on government cooperation, investment in tools to support the building sector and its supply chain, and integrating with current and future policies and programs will help Canada advance climate action and build a more sustainable future.

Sustainability Achievements 2022 and Sustainability Targets 2023-2025

5.0

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SUSTAINABILITY ACHIEVEMENTS 2022	SUSTAINABILITY TARGETS 2023-2025
5% $tCO2e/m^2$ reduction from 2021 Energy intensity reduced 1.4% from 2021	25% reduction in electricity and gas consumption by end of 2025 from the 2020 baseline
Sustainability Surveys for key suppliers	Phased Sustainability Surveying of all suppliers
Sustainable Procurement Policy drafted, Energy Management Policy drafted, Water Management Policy drafted, Waste Management Policy drafted, Conflict Minerals 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 Leadership Board
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 waster 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
	Continued advocacy for best practices in energy efficient HVAC technologies
	Continued advocacy for best practices in energy efficient HVAC technologies
	TM65 forms for all products automatically generated in our online product selection tool ADEPT.

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.

In 2022, the LCA Team completed an LCA Report on the 3hp Tango Pump. This LCA Report was Critically reviewed by a third party assessor.

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To find out more about
our sustainability journey visit:

our-sustainability-vision

http://armstrongfluidtechnology.com/SustainabilityVision

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