

Air Products

Your trusted industrial
gas partner for a
battery-powered future.

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Technical Sales Engineer

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Air Products By the Numbers

The resources and expertise to collaborate and innovate with customers throughout the battery supply chain

 **12.1**
billion dollars in sales


 **~23,000+**
employees worldwide

 **~50**
countries where we operate

 **~65**
billion dollars in market cap

 **>8**
decades in business

 **>250,000+**
customers

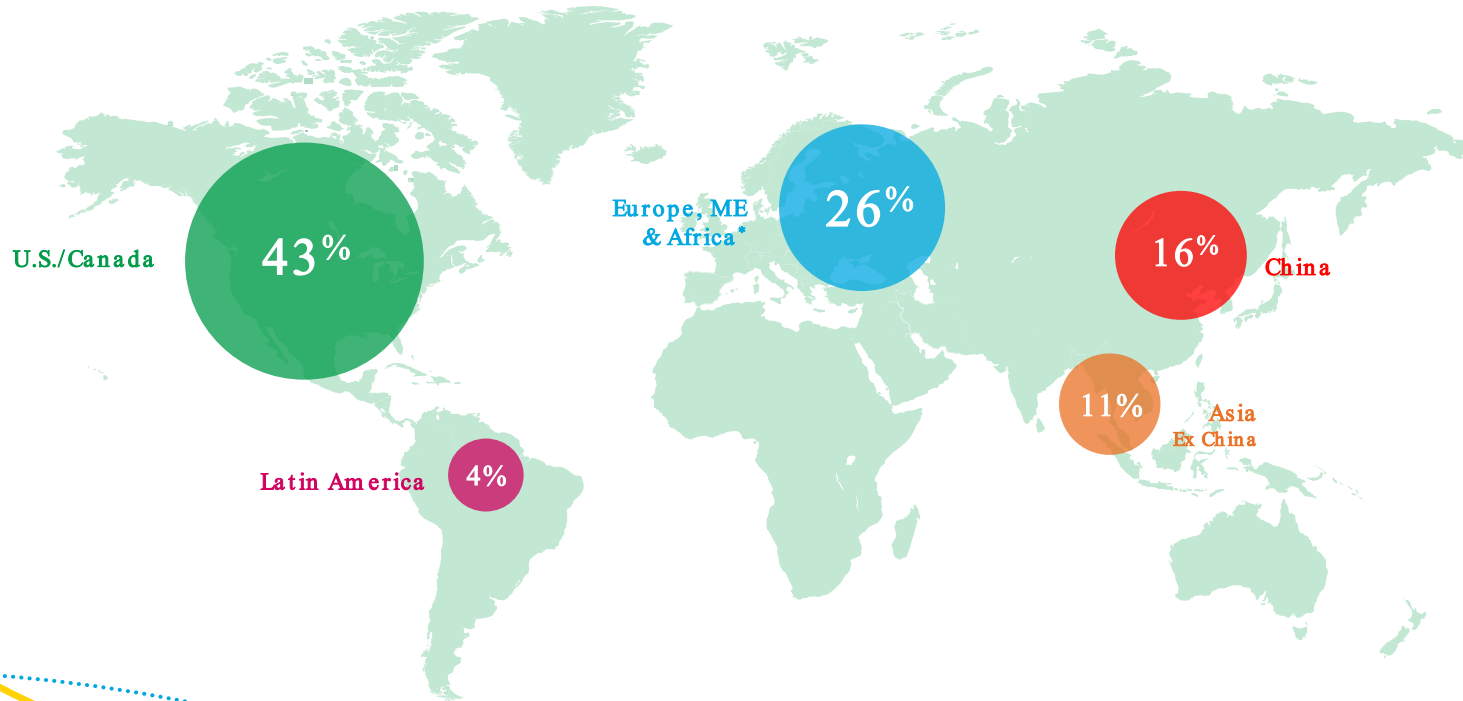
 **1,800**
miles of industrial gas pipeline

 **750+**
production facilities

 **30+**
industries served

Air Products Global Presence

Business around the world – share of revenue



*The Azan gasification and power joint venture is an equity affiliate. Its revenue is not included in reported sales.

Supply Options to Meet Your Requirements

Gases, equipment, and services to help you succeed



Large Volume

Small Volume



Cylinders/dewars



CryoEase® Service



Liquid bulk



On-site gas generation



Large air separation unit and pipeline system

Flexible Solutions for On-Site Gas Generation

Supply modes that fit your evolving needs



Quick installation & easy integration

Modular plant design with components customized to site needs and a compact footprint means limited downtime to install and start up



Uninterrupted supply every time

Production plants are designed with backup liquid supply and on-site storage - a 99.99% onstream guarantee solution



Global operational excellence with local technical response 24/7

Our enhanced safety focus, rapid troubleshooting, and optimization techniques help you manage process safety, operational reliability, and energy efficiency



Technology innovation and evolution

Investing in our products to deliver superior performance is core to our business and we can replace your aging system with newer, more efficient solutions



Industry expertise from application offerings to technical support

From pre-sale process audits to post-sale technical analysis, our dedicated team is available to evaluate and improve your gas use profile

Gas Solutions for Battery Production

Gas purity and delivery reliability for the most stringent requirements

- Highest quality gases, technologies, equipment, and services for battery production
- Backed by the experience and resources to help you
 - Reduce costs
 - Improve productivity
 - Advance product quality
 - Protect safety



Gases and solutions for

- Raw Material Processing
- Electrolytes and Separators
- Anodes and Cathodes
- Enclosures and Assembly
- Recycling

Gas Solutions for Battery Production

Mining & Raw Materials

O_2 , N_2 , H_2

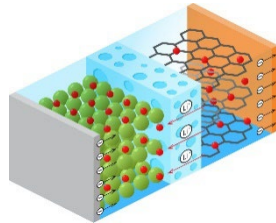
Inerting,
hydrometallurgy,
pyrometallurgy,
and refining



Battery Materials

N_2 , O_2 , CO_2 ,
 CO

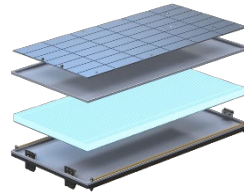
Inerting and
chemical
production



Cells & Components

N_2 , O_2 ,
 H_2 , Ar

Melting, refining,
coil annealing,
and
heat treatment



Battery Packs

N_2 , Ar

Inerting &
welding

He

Leak testing



Recycling

N_2 , O_2

Cryogenic grinding,
hydrometallurgy,
and pyrometallurgy

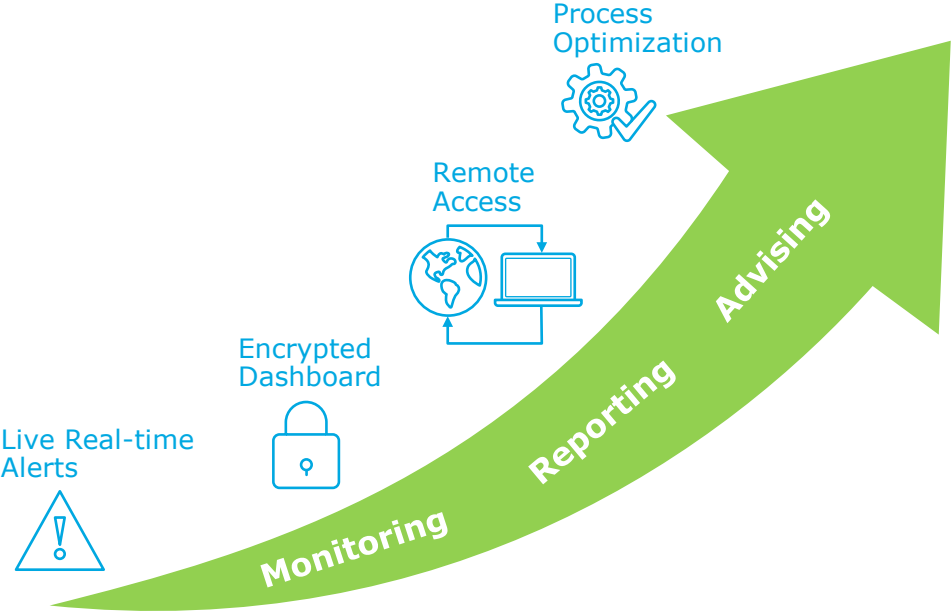
CO_2

Supercritical
extraction



Adding Value Beyond Supplying Gases

Air Products Smart Technology to optimize and improve your processes



BENEFITS

-  **Increased Production**
-  **Reduced Costs**
-  **Improved Quality**
-  **Safety**

Adding Value with Core Competencies

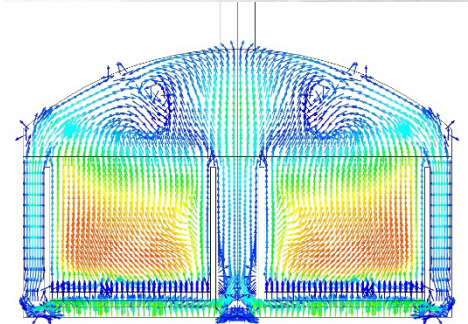
Strong industry relationships, proven technologies, and an innovative spirit to be the preferred gas partner

Atmosphere monitoring and optimization for productivity, quality control, and safety

Argon recycle and reuse to save resources and reduce cost

Pilot-scale combustion lab with state-of-the-art instrumentation and process control capabilities

CFD flow field and thermal field simulation to effectively optimize parameters, reduce the number of experiments, and improve optimization efficiency



Total Safety Philosophy

Maintaining a safe workplace is the core of our culture



We take the approach that **all accidents are preventable**.

The only acceptable goal is **zero** accidents and incidents.

We strive toward that goal in **every location, every day**.

Thank you
tell me more



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<https://Solution.airproducts.com/gas-supply-solutions-for-lithium-ion-battery-production>