

A technical drawing of an air compressor is overlaid on a blue triangular shape in the bottom left corner. The drawing shows various components of the compressor, including a cylindrical tank with a circular end view and various pipes and fittings. Dimensions and part numbers are visible, such as "390", "1390", "1690", "Ø72", "10.8", "18.5", "30.8", "4.8", and "110.5".

# HINDALCO INDUSTRIES

**Efficient Air Compressors -  
Emerging Technologies  
Low Carbon Economy**

GOPAL REDDY

# OBJECTIVE

Corporate Overview | Strategic Overview | Our Capitals | Statutory Reports | Financial Statements

## Assimilating Industry 4.0

We intend to LEAD industry by digitally transforming business processes, thereby creating an accelerated pathway for growth.

**L** Leverage Partnerships | **E** Efficient Automation | **A** Augment Intelligence | **D** Digital Savvy Capability

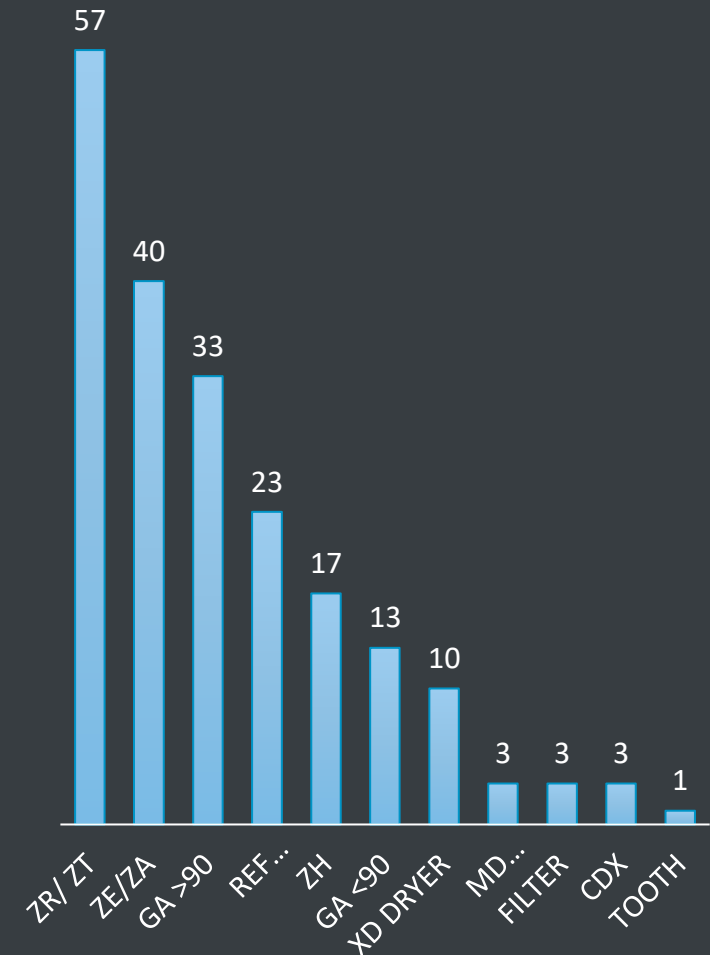
### Unlocking Value with Digital Transformation

We are accelerating digital innovation by leveraging partnerships within Aditya Birla Group and encouraging a digital culture across the organisation. Our focus has been on improving efficiency through technological upgrades, deploying analytical solutions to augment human intelligence and nurturing workforce with required skills to lead the digital era.

**Digital Objectives**

- Smarter plants
- Delighted employees, customers and society
- Digital savvy workforce
- Efficient Supply Chain

## Current Installations Hindalco Group



**DIGITAL INITIATIVES**  
70+ across value chain

**SMART FACTORY**  
Driving downstream manufacturing processes through Industrial IoT

**LOGISTICS**  
End-to-end digitisation at 7 locations using AI platform, Logistics Insights Tower

**YIELD & QUALITY**  
Multiple Machine Learning models and Digital Twin solutions to improve core metrics by up to 1%

**BASIC INFRA**  
L2 integration, Historian systems etc. to ensure Basic Infra at all locations

**OPERATIONS**  
Rapid deployment of AR during early days of COVID in response to travel restrictions resulting in seamless operations

**ASSET RELIABILITY**  
Predictive Asset Maintenance at 5 Locations for 200+ Assets

**PRODUCTIVITY**  
RPA and Drones eliminating repetitive activities resulting in 1,000's of hours saved

**PROCUREMENT**  
Machine Learning based Price Forecasting Models for market shocks

**SAFETY**  
Integrated Digital Safety solution through VEDA, Confined Space monitoring and sensors

**CAPABILITY**  
Reached 2,000+ employees through the DISHA programme and created 175+ Citizen Data Scientists

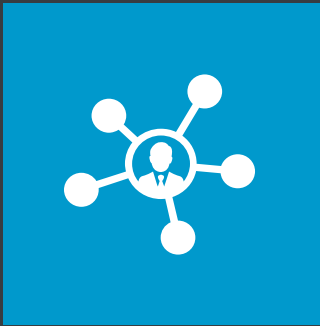
Source : Hindalco Annual Report



Supporting the change to a Low Carbon Economy

# This is Atlas Copco

Turnover of nearly  
**100 BSEK / 10 BEUR**

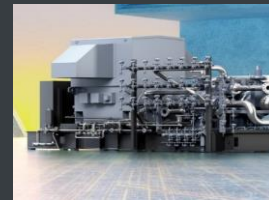


Customers  
in **184** countries

Established in **1873**  
Stockholm, Sweden



**40 000** employees  
in **71** countries



# A structure for Focus and Innovation

BOARD OF DIRECTORS



PRESIDENT AND CEO



GROUP MANAGEMENT



## COMPRESSOR TECHNIQUE

- Compressor Technique Service
- Industrial Air
- **Oil-free Air**
- Professional Air
- Gas and Process
- Medical Gas Solutions
- Airtec



## VACUUM TECHNIQUE

- Vacuum Technique Service
- Semiconductor Service
- Semiconductor
- Semiconductor Chamber Solutions
- Scientific Vacuum
- Industrial Vacuum



## INDUSTRIAL TECHNIQUE

- Industrial Technique Service
- MVI Tools and Assembly Systems
- General Industry Tools and Assembly Systems
- Chicago Pneumatic Tools
- Industrial Assembly Solutions
- Machine Vision Solutions



## POWER TECHNIQUE

- Power Technique Service
- Specialty Rental
- Portable Air
- Power and Flow

# Organization Structure

**Alexander Pavlov**  
General Manager



**Anil Dave**  
Business Line Manager - AIF



**Gopal Reddy**  
Zonal Manager - AIF  
Other Marketing employees  
Kolkata  
+919392517600



**Amit Mandal**  
Territory Manager - AIF



**Dinesh Padhi**  
Territory Manager - AIF



**Koustav Ghosal**  
Territory Manager - AIF



**Souparno Roy**  
Sales Engineer - AIF



**Sumeet Dasadhikari**  
Area Sales Manager - AIF



# Oil-free Air Division

## *Mission*

To Be Recognized As The Global Leading Provider Of Air and Gas Systems



Oil-injected  
90 - 500 kW



Oil-free  
15 - 5000 kW



Air & Gas  
Treatment > 300 l/s



## *Vision*

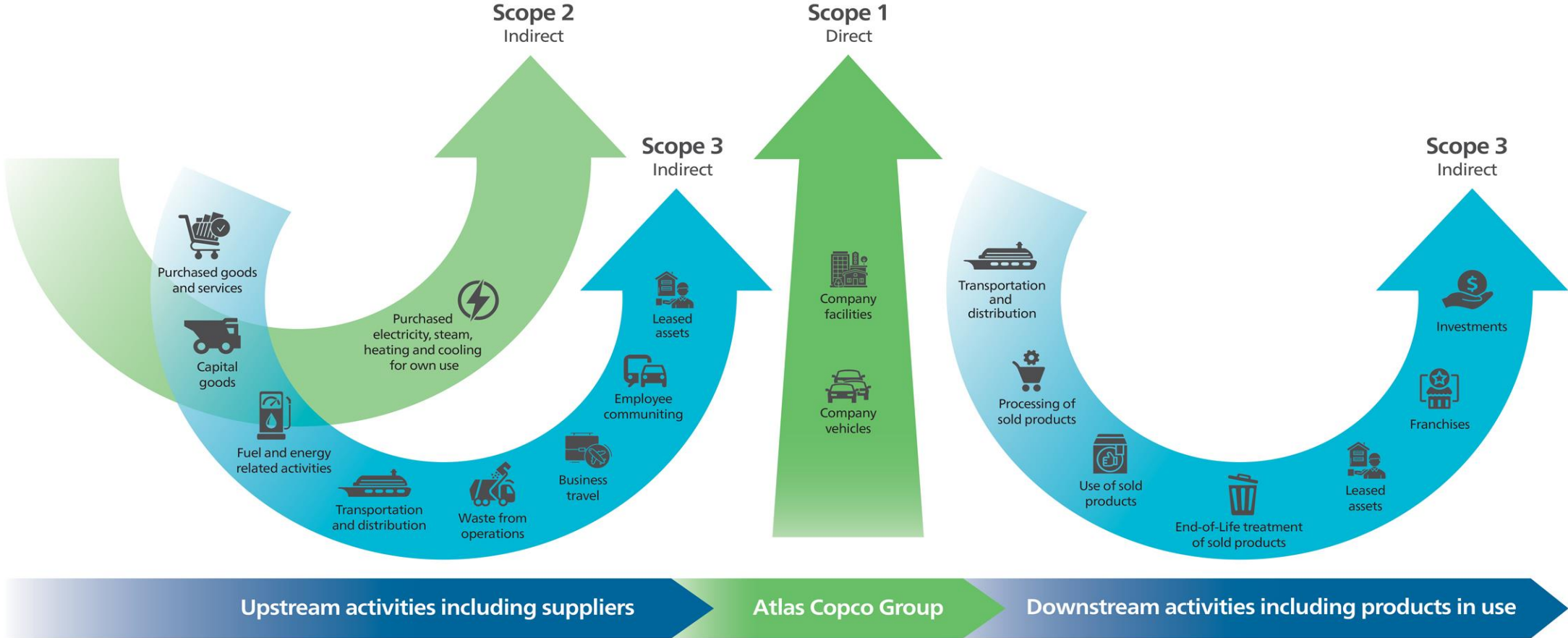
First In Mind - First In Choice



# Our science-based targets

**Target 1**  
 To limit global temperature rise to **maximum 1.5°C**  
 we will reduce emissions in scope 1 and 2 with **46% by 2030**  
 (Baseline: 2019)

**Target 2**  
 To keep global temperature rise well **below 2°C**  
 we will reduce emissions in scope 3 with **28% by 2030**  
 (Baseline: 2019)



Source: Greenhouse Gas Protocol



# Current Industry Problems



# How Can We Help



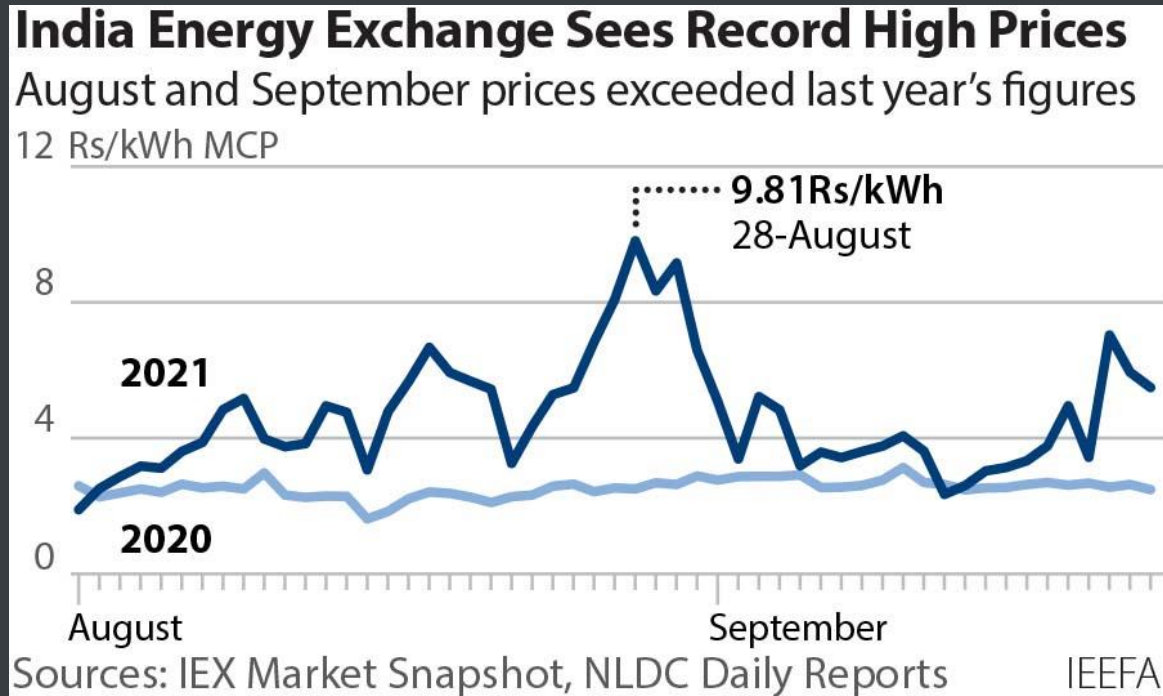
Supply Chain Issues  
Cost Increase



Carbon Pollution  
Carbon Taxes  
Cost Increase

## Reduction of Carbon Foot Print

# The Rising Cost of Energy



Analysis of monthly volumes and prices at the largest power exchange in India, Indian Energy Exchange (IEX) reveals that market clearing volume (MCV) to the end of August increased by 20% over 2020, by 37% compared to 2019 and by 30% over 2018. With increased volumes, the average market clearing prices (MCP) at IEX to the end of August increased by 38% compared to 2020, by 8% compared to 2019 and by 11% over 2018.

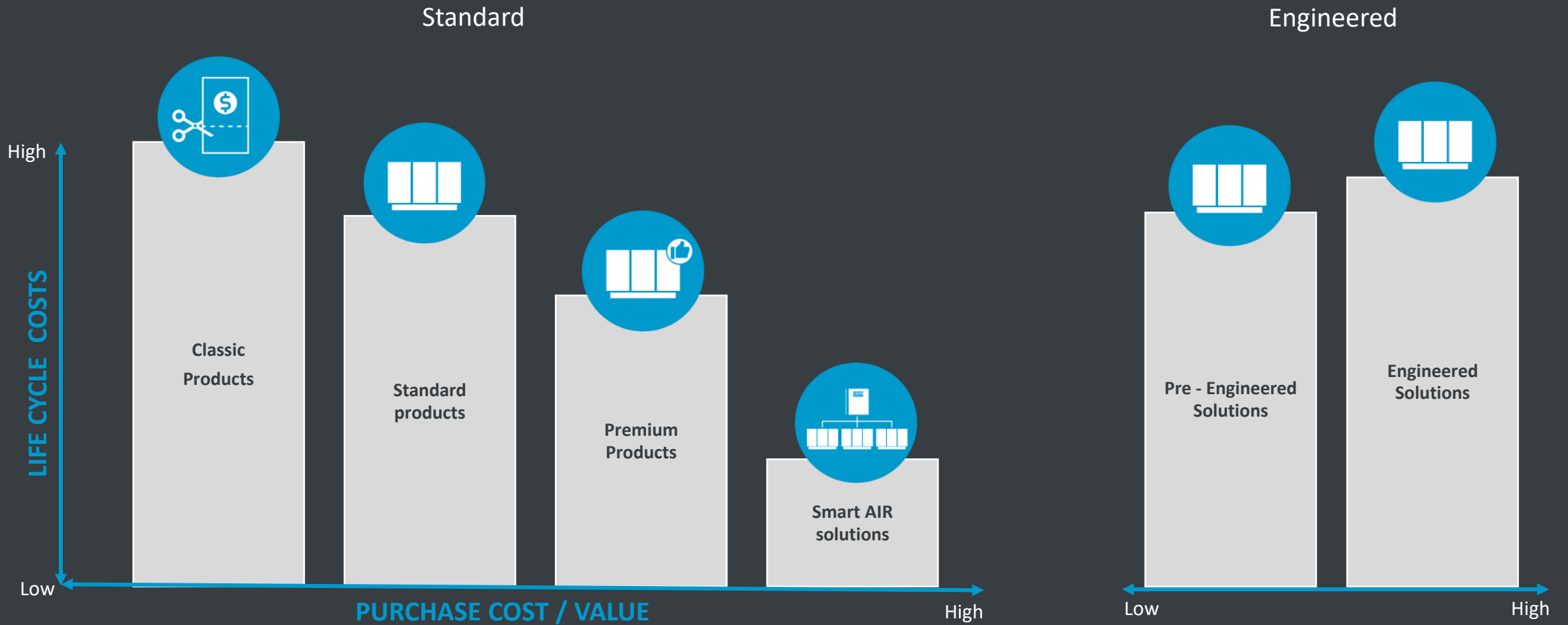
# Our Product Offer



	Compression Technologies	Pressure	Air & Gas quality	Monitoring & control	Service
Oil lubricated	<ul style="list-style-type: none"> <li> Screw</li> <li> Piston</li> </ul>	<p>0.1 bar - 1000 bar</p> <p>Largest pressure range</p>	<ul style="list-style-type: none"> <li> Dryers</li> <li> Filters</li> <li> Condensate treatment</li> </ul>	<ul style="list-style-type: none"> <li> Central control</li> </ul>	<ul style="list-style-type: none"> <li>Global presence</li> <li>World class logistics</li> <li>Certified technicians</li> <li>Service plans</li> <li>Diagnostic services</li> </ul>
100% Oil free	<ul style="list-style-type: none"> <li> Scroll</li> <li> Centrifugal</li> <li> Lobe</li> <li> Tooth</li> </ul>	<p>Power</p> <p>1 Kw - 20 MW</p> <p>Largest power range</p>	<ul style="list-style-type: none"> <li> Ancillaries</li> <li>N2 Nitrogen</li> <li>O2 Oxygen</li> <li>H2 Hydrogen</li> <li>CO2 Carbon Dioxide</li> <li>Others</li> </ul>	<ul style="list-style-type: none"> <li> Energy recovery</li> <li> Connectivity</li> <li> Industry 4.0 integration</li> </ul>	

# Product Strategy

Market optimized products



# Central controller for industry 4.0,

Control up to 30 machines in three different airnets.

A specifically developed Optimizer 4.0 is available for compressors, as well as for blowers.

- Efficiency:** Selection of the machines with the lowest SER, preventing blow-off, VSD units in their sweet spot, including switching cost, reduced pressure
- Reliability:** Improved uptime for the application, reduced pressure/flow extended the life-time of the machine, controlled service intervals, and equalize the running hours
- Flexibility:** Easily integrate new machines or AirNet's if necessary, simple programming, pressure & flow control
- Connectivity:** Remoteview as standard, high-end data analysis and diagnostics with Smartview, broad range of communication protocols, Smartlink

# Product Strategy Standard Range

A Complete Product Offer For Different Value Propositions



Product range	Classic	Standard	Plus +	Smart AIR solutions
Energy Efficiency	Average	Good	Better	Best
Recommended For	Low Operating Hours Low Electricity Costs	Medium Operating Hours Low Electricity Costs	Medium Operating Hours High Electricity Costs	Medium to High Operating Hours High Electricity Costs
Features	No Options Fast Delivery Good Sound Level	More Options Fast Delivery Better Sound Level	Low Carbon footprint Extended Delivery Best Sound Level	Advanced System Control Lowest Carbon Footprint

Pre - Engineered Solutions	Engineered Solutions
Good	Good
Hazardous Environments Extreme environments Remote Locations	Hazardous Environments Extreme environments Remote Locations
Build to Industry requirements	Build to individual requirements



WE TAKE  
A LIFE-CYCLE  
APPROACH  
TO  
INNOVATION

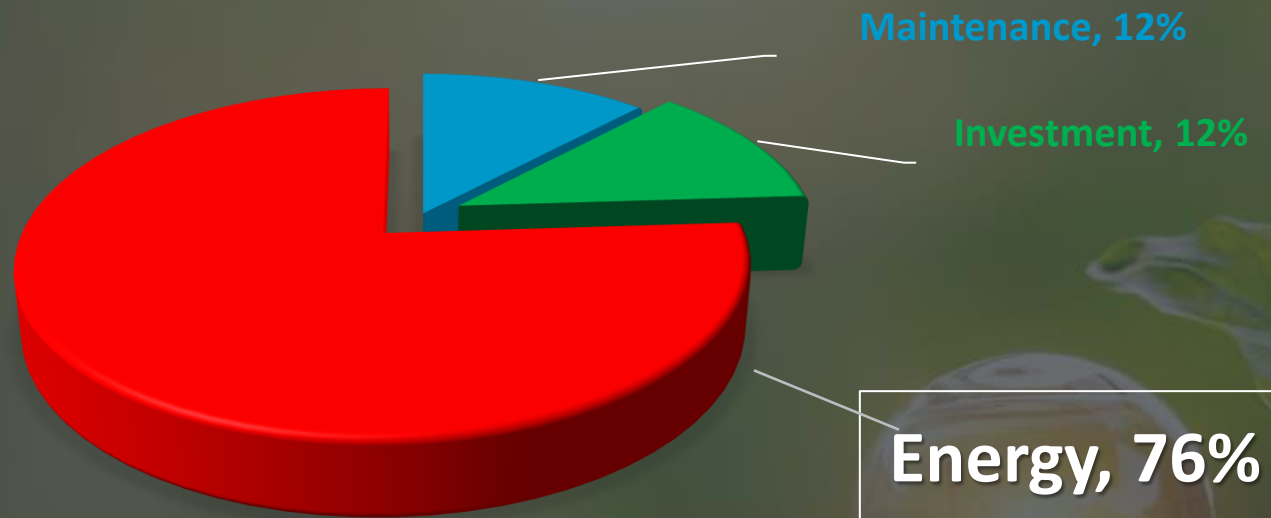




# The Why

We focus on the energy efficiency of our products

TCO COST %



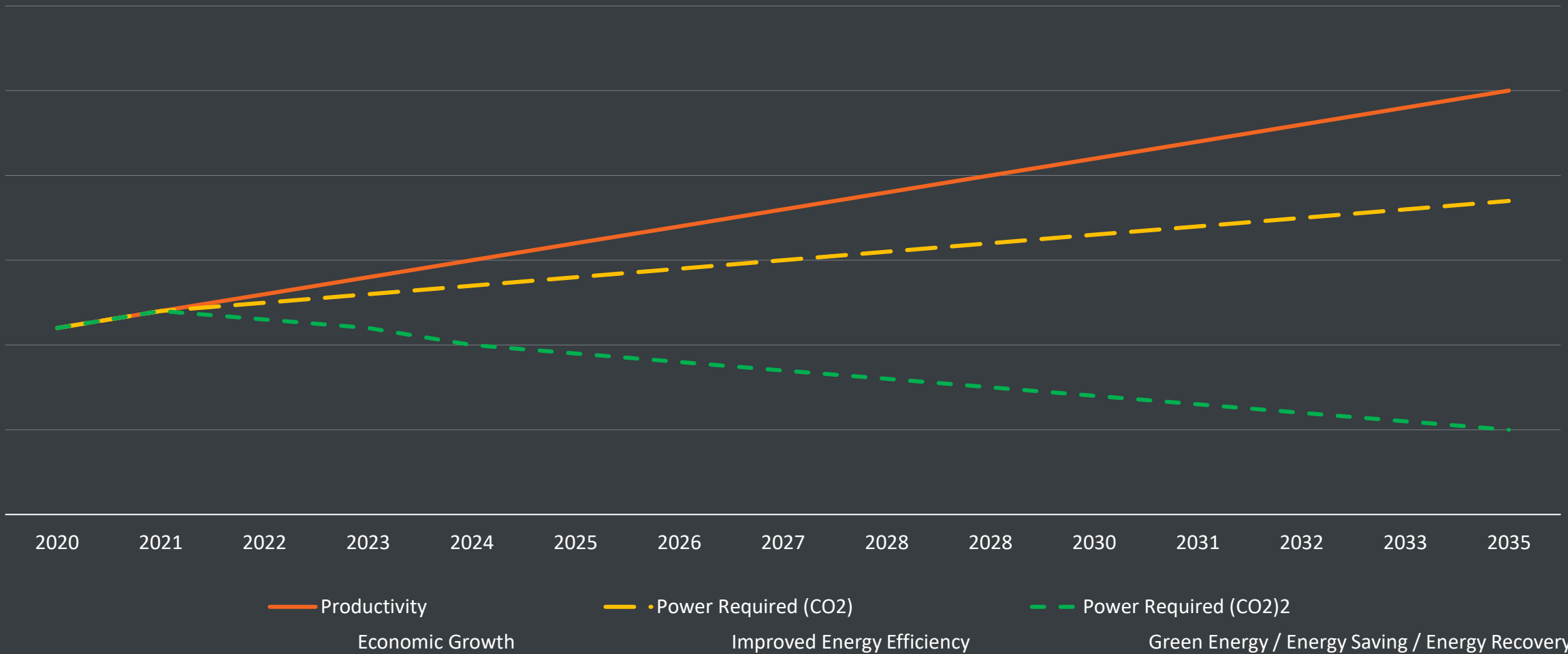
# Why reduce carbon?

Reduce the effects of climate change  
Increase the quality of life for us all



- Lower energy usage
- Lower manufacturing costs
- Reduced carbon taxes
- Improved brand image attracts customers, investors & talented staff
- Boost to employee morale
- Compliance with increasingly stringent environmental laws

# What can we do?



# The What



Products with the *lowest carbon footprint*



Products designed for *energy recovery*



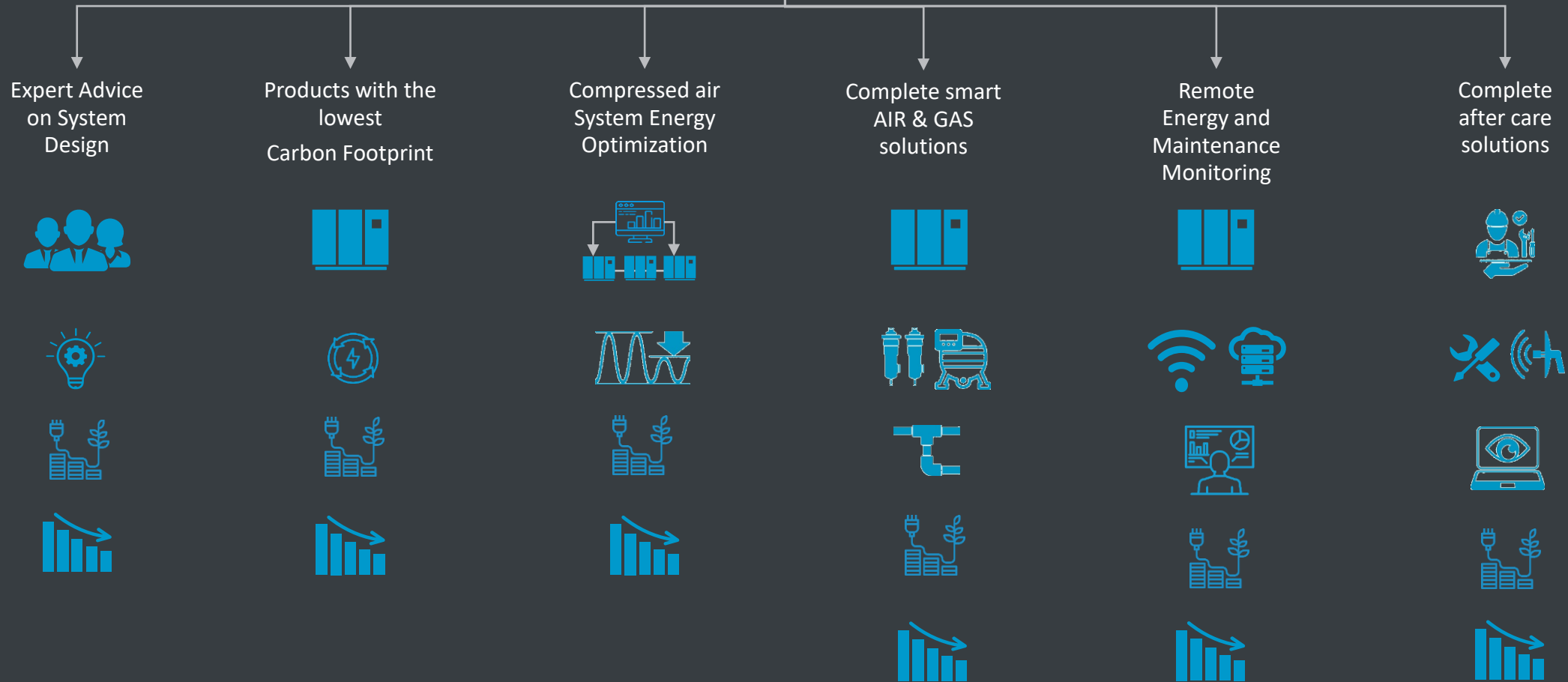
Products designed to support *Green Gas*



Working with customers to support *sustainable production*

# Carbon Footprint

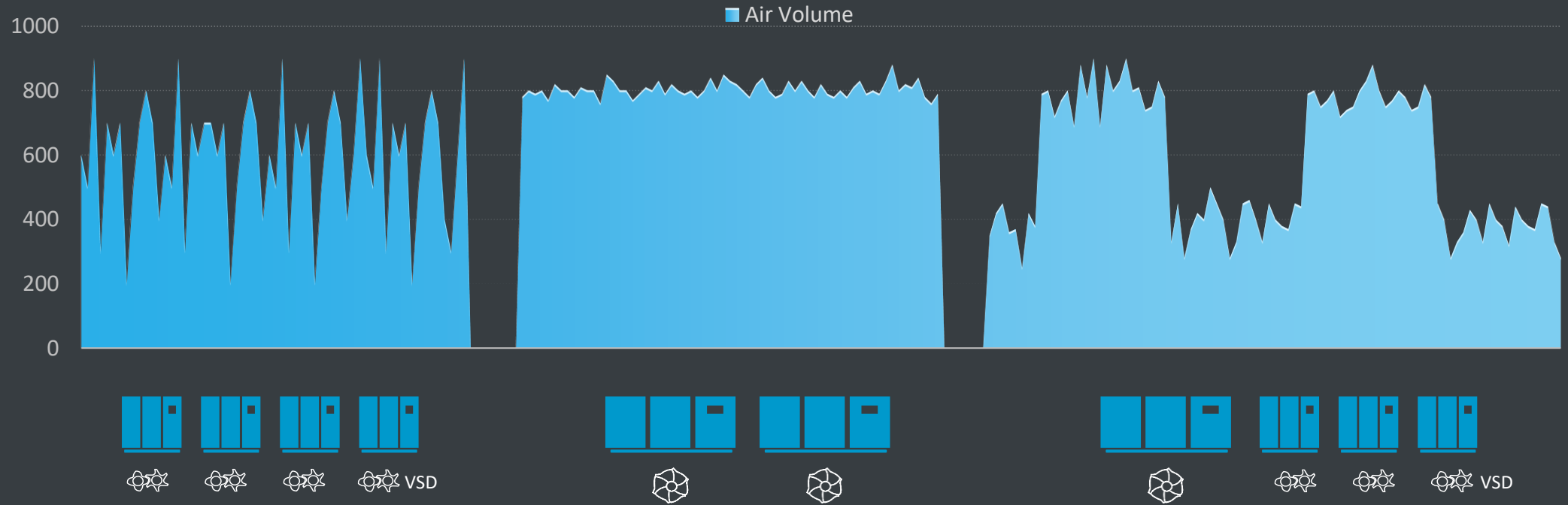
# Our Value Proposition



# Carbon Footprint

# Our Value Proposition

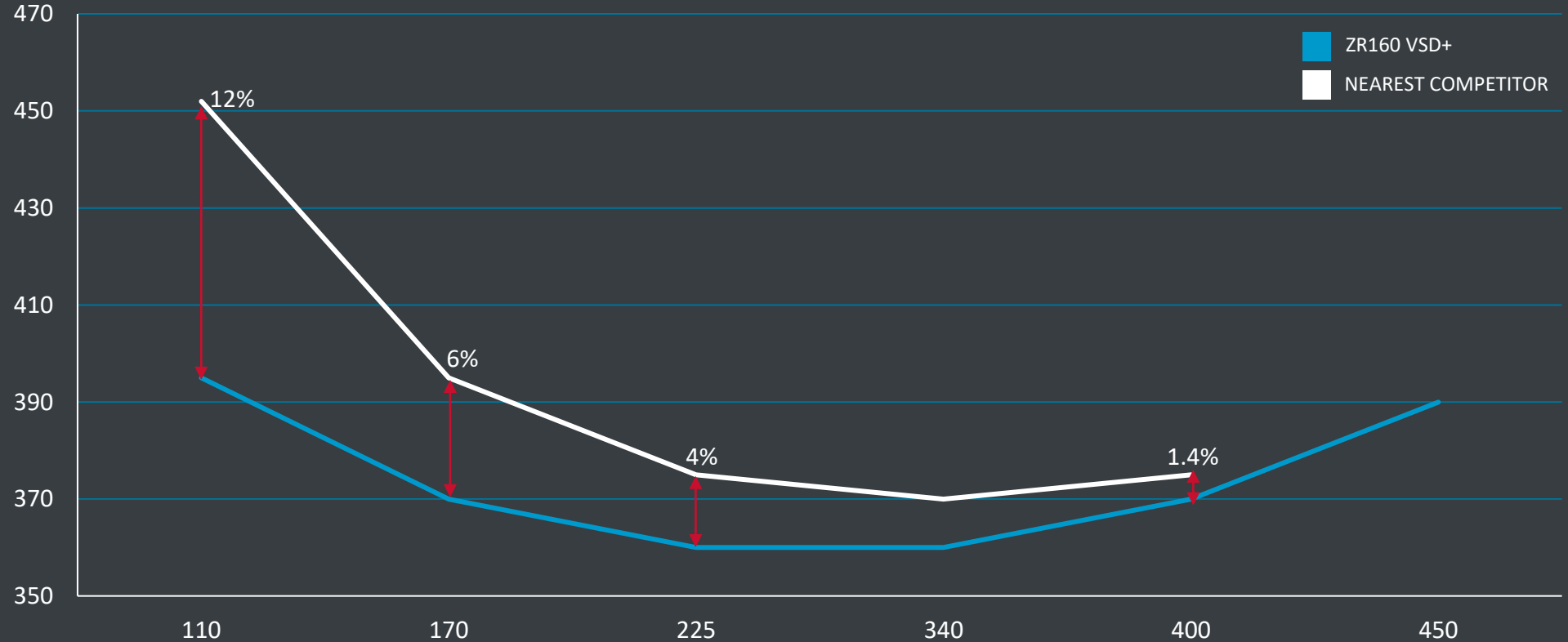
Expert Advice  
on System  
Design



# Carbon Footprint

# Our Value Proposition

TUV Witnessed Energy Comparison



Products with the lowest Carbon Footprint



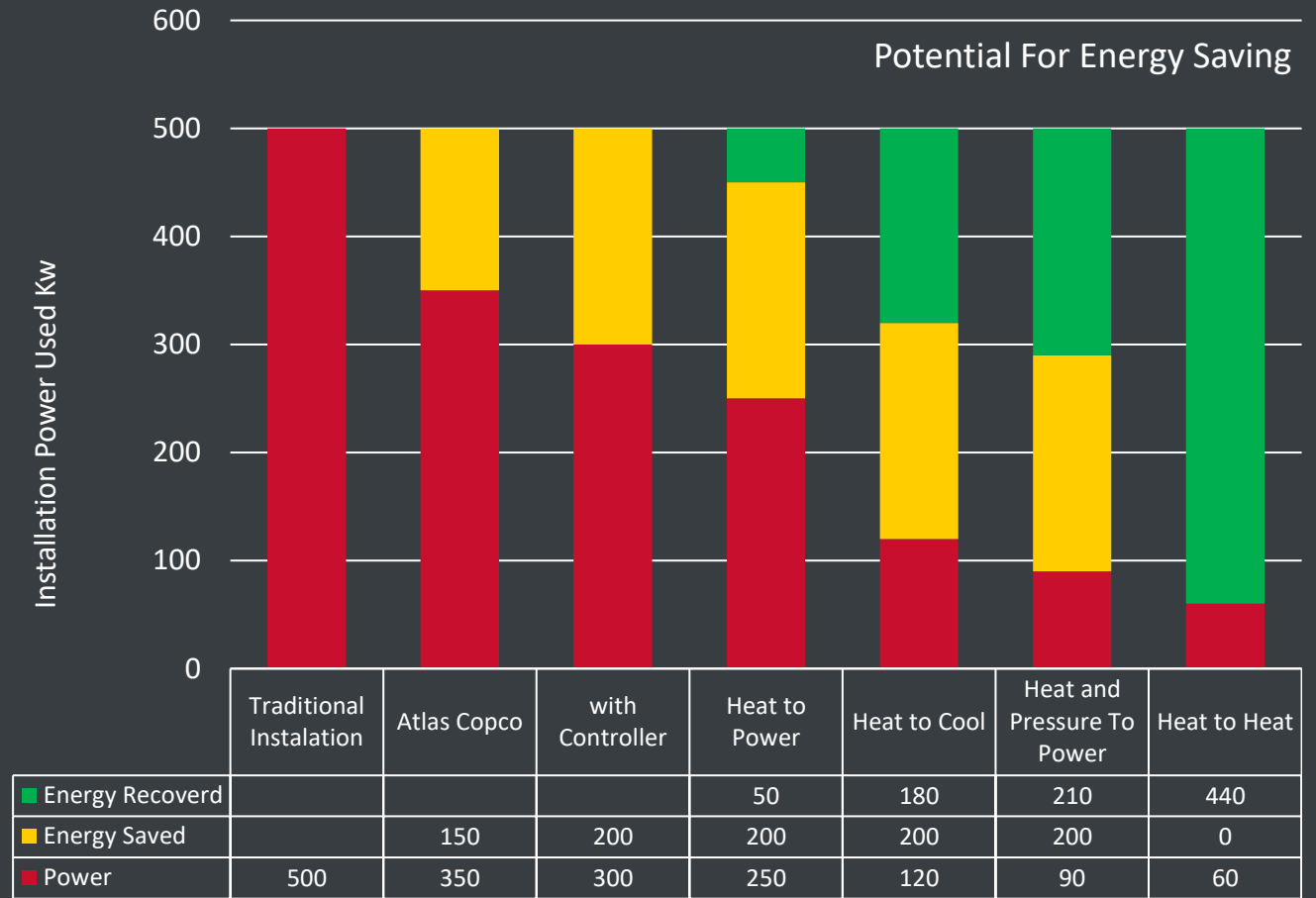
# Carbon Footprint

## Energy Recovery

Products with the lowest Carbon Footprint



# Our Value Proposition





# Carbon Footprint

# Our Value Proposition

Compressed air  
System Energy  
Optimization



# Carbon Footprint

# Our Value Proposition

Complete  
smart AIR  
solutions

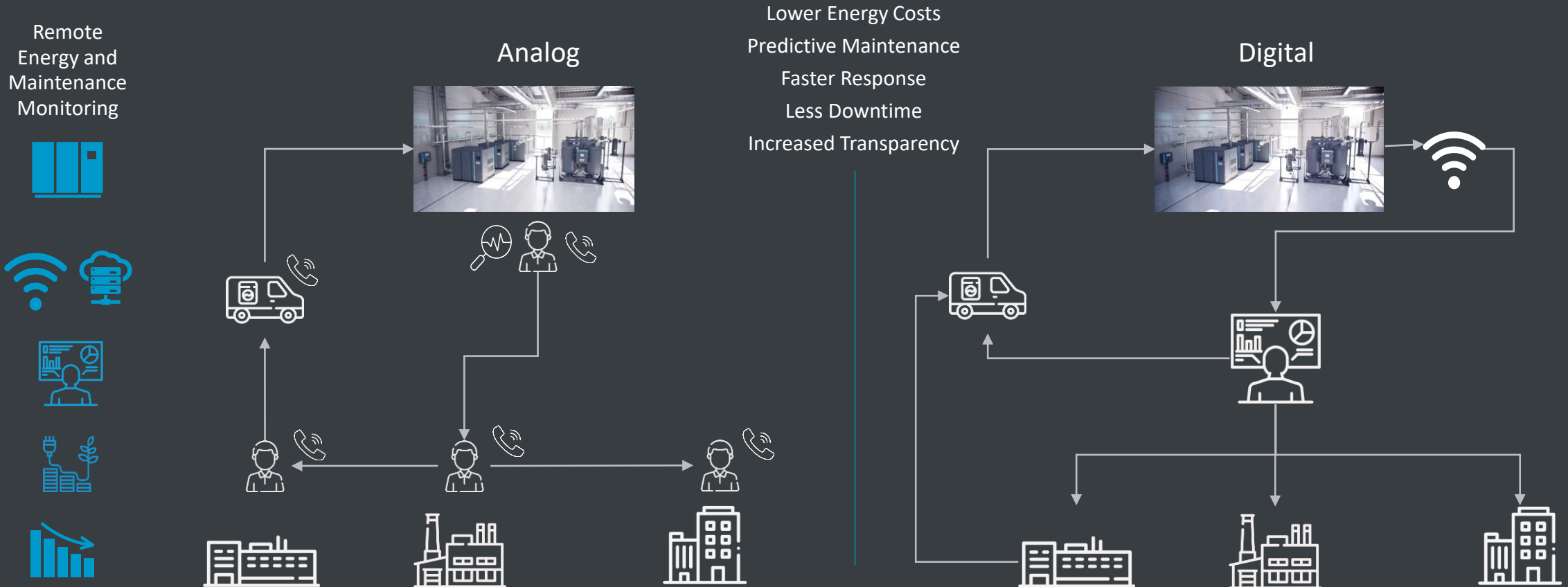


Minimized carbon footprint from a fully optimized compressed air solution

*Atlas Copco*

# Carbon Footprint

# Our Value Proposition



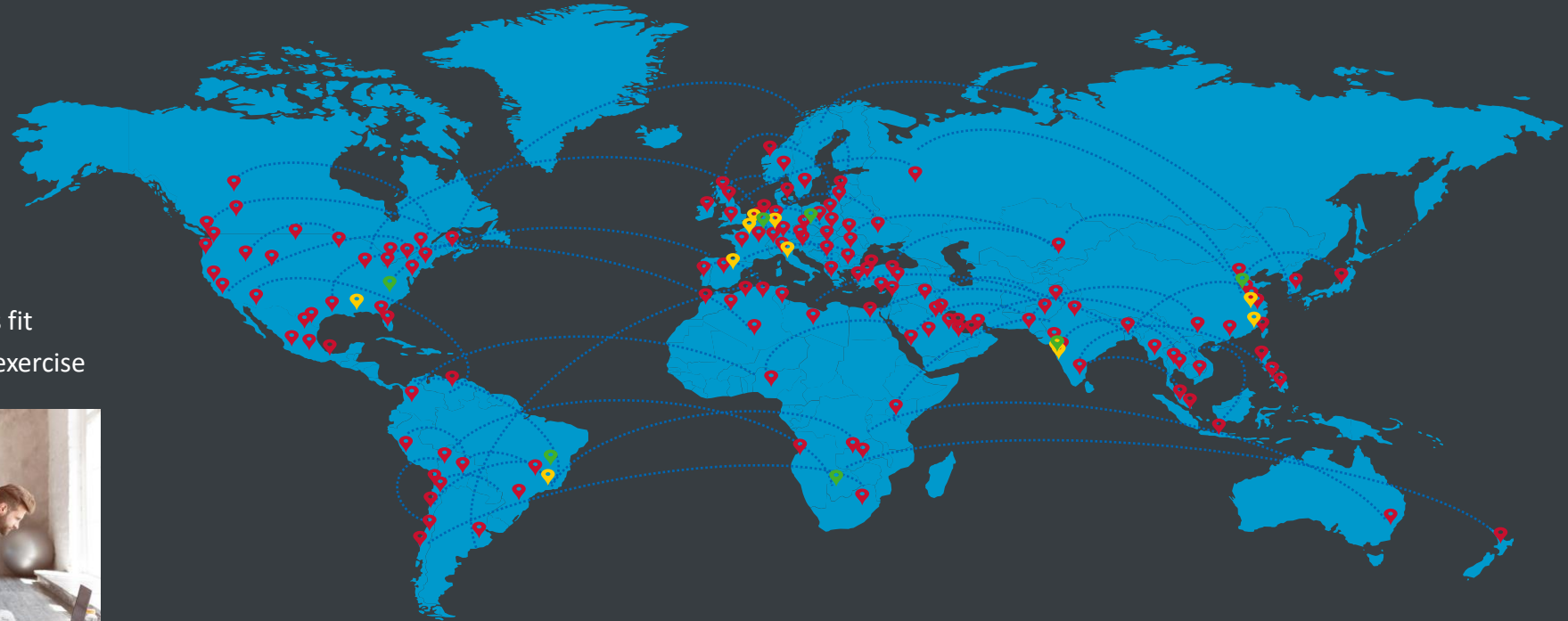
Increase Transparency and Comply with ISO50001 Energy Management Standard




# Global Expertise & Support

Complete after care solutions



To keep our bodies fit we need to do regular exercise



-  Product companies
-  Distribution centre's
-  Customer centre's

To keep your compressed air installation efficient, you need to do regular maintenance and Monitoring

# Its our total capability that makes us unique

Expert Advice  
on System  
Design

Products with the  
lowest  
Carbon Footprint

Compressed air  
System Energy  
Optimization

Complete  
smart AIR  
solutions

Remote  
Energy and  
Maintenance  
Monitoring

Complete  
after care  
solutions



# Supporting the change to a Low Carbon Economy

Lowering the cost of transport, conveying, water treatment and fermentation

SILVERSTREAM  
TECHNOLOGIES



Low Pressure blowers, reduces ships fuel consumption by 5-10%

Atlas Copco

# Supporting the change to a Low Carbon Economy

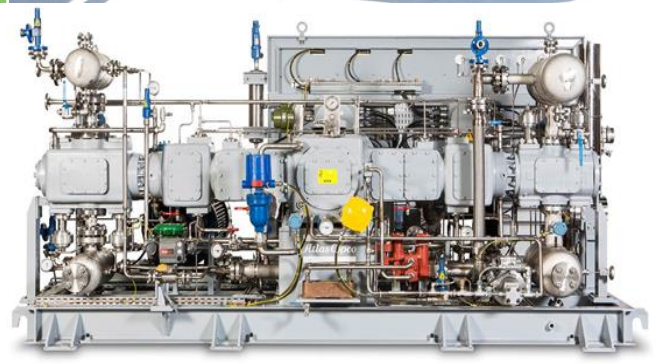
Lowering the environmental impact of manufacturing green energy



Medium Pressure, ZR VSD FF with Optimizer can reduce energy consumption by up to 50%

# Supporting the change to a Low Carbon Economy

Supporting the production of green gases and CO2 Recovery



High Pressure, Booster for carbon capture can reduce CO2 consumption by up to 80%



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