

ALUMINIUM

Global solution provider
to the complete primary
aluminium process
industry

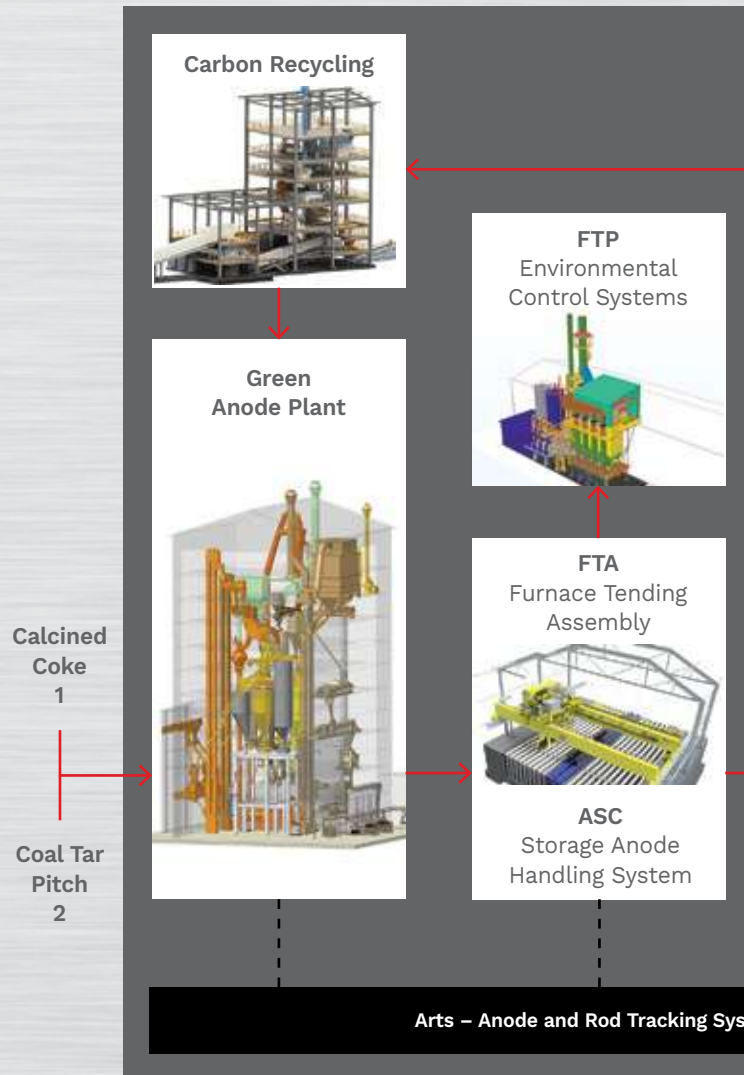
*TOGETHER
TOWARDS*

PERFORMANCE

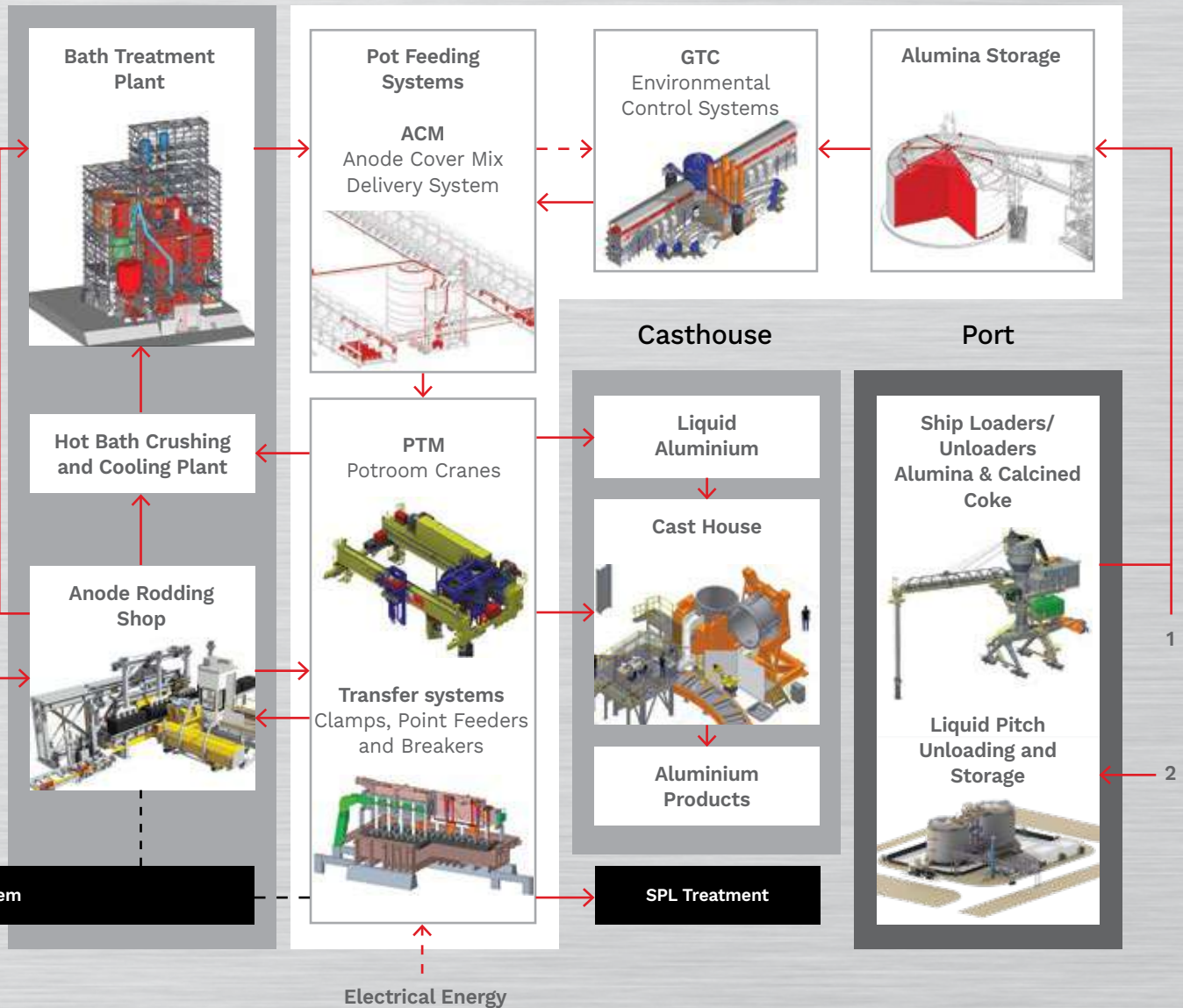


Global Solution Provider to the Complete Primary Aluminium Process

Carbon



Electrolysis



A Global Vision that Delivers

Total Efficiency

REEL is a global leader in delivering complex and robust lifting and handling equipment to sectors where safety and reliability are major concerns. As an integrated engineering company, we design, manufacture supply, commission and maintain high-performance solutions adapted to ever-evolving markets and client requirements.

Over 75- year track record of excellence and 2,400 dedicated employees make us the partner of choice in the energy, aeronautics, offshore, defence, metallurgy, industry and environmental sectors. We work closely with clients to improve their production processes, providing solutions that are integrated, sustainable and optimised, both technically and economically.

Our Aluminium Businesses

Through our entities and brands REEL Alesa, NKM Noell Special Cranes and our new companies: REEL Möller, and the former aluminium business of OUTOTEC now business unit Anode & Casting, and former GE environment control solution division we cover the complete primary aluminum process.

We provide customised solutions that address aluminium industry challenges and complexities for clients worldwide. Our end-to-end lifting and materials handling equipment and services accelerate process automation, maximise smelter performance and safeguard employee health and safety.

TOGETHER TOWARDS PERFORMANCE

High Performance, Enhanced Competitiveness

Our goal is to optimise your processes and performance, while reducing your plants' environmental footprint. Whether for greenfield or brownfield operations, our broad portfolio of innovative and proven technologies will boost your competitiveness. Continuously investing in new technologies enables us to further sharpen your competitive edge.

With many manufacturing sites on three continents, we are recognised for our responsiveness, flexibility and deep expertise in aluminium production process integration and automation. We understand the demands of your operating environment and tailor our solutions to meet these demands. Our focus is on adding value at every step, from engineering and project management, to procurement and manufacturing, to site works and maintenance.

WHETHER YOU NEED TO UPGRADE, REPLACE
OR INCREASE CAPACITY, OUR EXPERTS HAVE
THE RIGHT SOLUTION FOR YOU.



Customised lifting and materials
handling solutions for optimal
efficiency and productivity
across your aluminium
production process

EXCELLENCE IN GLOBAL SUPPLY



5
MANUFACTURING
SITES WORLDWIDE

2,400
HIGHLY SKILLED
EMPLOYEES

LEADING-EDGE MECHANICAL, ELECTRICAL AND
INSTRUMENTATION AND CONTROL (I&C) KNOW-HOW



From left to right

Ship Unloading; Furnace Tending Assemblies
and Anode Handling; Pot Tending Machines



FROM THE
PORT FACILITY
TO THE OPERATING
SMELTER PLANT...
**TOGETHER
TOWARDS
PERFORMANCE**





Complete Lifting and Materials Handling Solutions

Storage Systems

Ship Loaders/Unloaders

Dense/Solid Phase and other Conveying Systems

Potfeed E.g. Hyperdense Phase Systems (Hdps™)

Dosing Devices

Centrifugal Blowers

Bath and Carbon Recycling Plant Systems

Pot Process Control Systems

Electrolysis Handling Equipment

Carbon: Green Anode Plant, Rodding and Anode Handling Systems

Baking Furnace, Lifting Solutions

Casting Equipment



From left to right

Alumina Handling; Pot Tending Machines;
Pot Alumina Feeding

Green Anode Plant
and Butt Crushing



Carbon Recycling Applications



Two-step screening and crushing circuit for recycled anode scrap enables a high crushing ratio and lower CAPEX

Proprietary anode crusher for primary crushing of recycled anode scrap and full-size anodes

Fe-separation for tramp iron and to separate thimbles remaining on butts after stripping

PLC-based automation system

Liquid Pitch Storage
and Handling Solutions



Anode Rodding Shop

Rodding Shop Applications

Basic and Detailed Engineering for Any Plant Solution

Proprietary and Key equipment Supply

Site Supervision, Commissioning, and Start-up Services

Complete Turnkey Plant Deliveries

Plant Retrofit and Machinery Upgrade Services

Paste Plant Applications

Screening & crushing of calcined coke & recycled anode scrap for fraction classification

Fine milling of undersize coke material using an air-swept ball mill or vertical mill

Proportioning and preheating of dry material fractions, and mixing with binder pitch for production of homogenous anode paste

Vibrocompacting of green anode blocks

Water-cooling of green anode blocks by spraying or submersion

Pitch fume treatment system (thermal oxidation or dry scrubbing)

Heat transfer medium for generation and distribution of process heat

Fully automated plant solution with remote process operation, monitoring, and analysis via intuitive graphical interface



Anode Casting Station
and Pouring Car

An Exhaustive Range of State-of-the-Art, Innovative, Environmental Control Solutions

With more than 230 installations worldwide, our leading environmental control solutions have evolved over the past 60 years to cope with increasing pot amperage, more stringent environmental regulations and maximum return of valuable materials to the process.



Gas Treatment Centres (GTCs), including SOx Wet Scrubbing

Based on our innovative ABART technology, delivering maximum environmental performance.

Fume Treatment Centres (FTCs)

Our novel FTC is designed around our unique integrated gas conditioning and energy recovery heat exchanger (AHEx).

Solutions for SOx Wet Scrubbing

These includes centralized wet scrubbing systems or distributed at each filter, based on seawater or NaOH.

Solutions for Gas Cooling and Energy Recovery

Including water cooling systems and heat exchangers, specifically developed to address the specific challenges arising from pot gases and baking furnace fumes.

Solutions for Minimizing Roof Vent Emissions

Our portfolio of solution covers all sources of emissions and includes boosted suction systems, solutions for spent anode.

Material Handling Equipment

These include the most reliable potfeed systems (HDPS and AlFeed), with limited dust entrainment.



A Team of Highly Experienced Professionals

Whether you are looking for help to develop long-term environmental roadmaps, support a production increase program, address tightening regulations or build a new treatment unit on a turnkey basis, including material handling, REEL is your partner of choice. We offer service agreements and spare parts.

We will support you regardless of your project's size – from small upgrades to major greenfield smelters.

Our team of highly experienced professionals will help you identify the most relevant solutions considering your specific constraints and will support you all in the way to its final implementation, and beyond.



Pneumatic Conveying and Storage Technology – Power Plants

Complete pneumatic fly ash handling and wood pellets transport systems

Pneumatic long distance transport: TURBUFLOW® and Multi-TTS Systems

Large capacity silos: Long term storage (up to 40,000 t)

Dust free dry ash loading systems: Road and rail tankers, ships for wet ash conditioner and open truck loading equipment

Coal fuel injection and ash removal technologies

Lime supply and storage for desulphurization plants

Mechanical silo discharge and dosing systems

Complete system for refuse combustion plants

Primary Alumina, Secondary Alumina, Crushed Bath and Aluminum Fluoride

Silo Technology:

- 85.000 m³ and more
- Silo feeding, anti segregation system
- Silo discharge systems

TURBUFLOW® Dense Phase Conveying System

Direct Pot Feeding Systems:

- Combined dense phase/Möller Fluidflow® system
- 100% Fluidflow® system

Airlift Systems:

- 600t/h and more

Truck/Wagon Loading and Unloading Systems



Committed to Your Success, Every Step of the Way

The moment you partner with us, we become fully engaged in the project, providing you with a highly knowledgeable team committed to ensuring your success. Whatever area of your operations we are optimizing, our goal is always to exceed your expectations.

From the initial concept to project execution and comprehensive after-sales services, every REEL employee assigned to your project is focused on the same thing: delivering excellence, on time and within budget, while fostering a zero-harm culture.

A dedicated project management team draws on industry best practices to minimise your operation and maintenance costs as well as optimise your lifecycle management. Integrating the latest technologies allows us to take your operations to a whole new level of efficiency and productivity. This is our commitment to you.

EXPERT PROJECT
MANAGEMENT AND
AFTER-SALES
SERVICES





From Feasibility Studies to Turnkey
Project Execution (Brownfield, Greenfield
and Creep Projects)

Equipment and Key Components Supply

Spare Parts

Process and Equipment Evaluation

Assistance in Continuous Improvement
Programmes

On-site Training

Maintenance and Site Assistance



Pot Tending Machine;
Anode Jacking Frame

A Trusted Partner

Over the past seven decades, we've built a reputation as the industry's most trusted partner. An unwavering commitment to our values and to your success lies at the heart of this reputation. So does our determination to foster a zero-harm culture that ensures the health and safety of your employees as well as our own.

Safety is both an absolute priority and shared culture at REEL. Optimal performance requires complete safety. At REEL, they go hand in hand. A dedicated safety team oversees every activity on your site. We hold more than 120 safety training sessions annually to embed our zero-harm mindset across our organisation. Our comprehensive safety tools and management system also help keep employees and contractors healthy and safe.

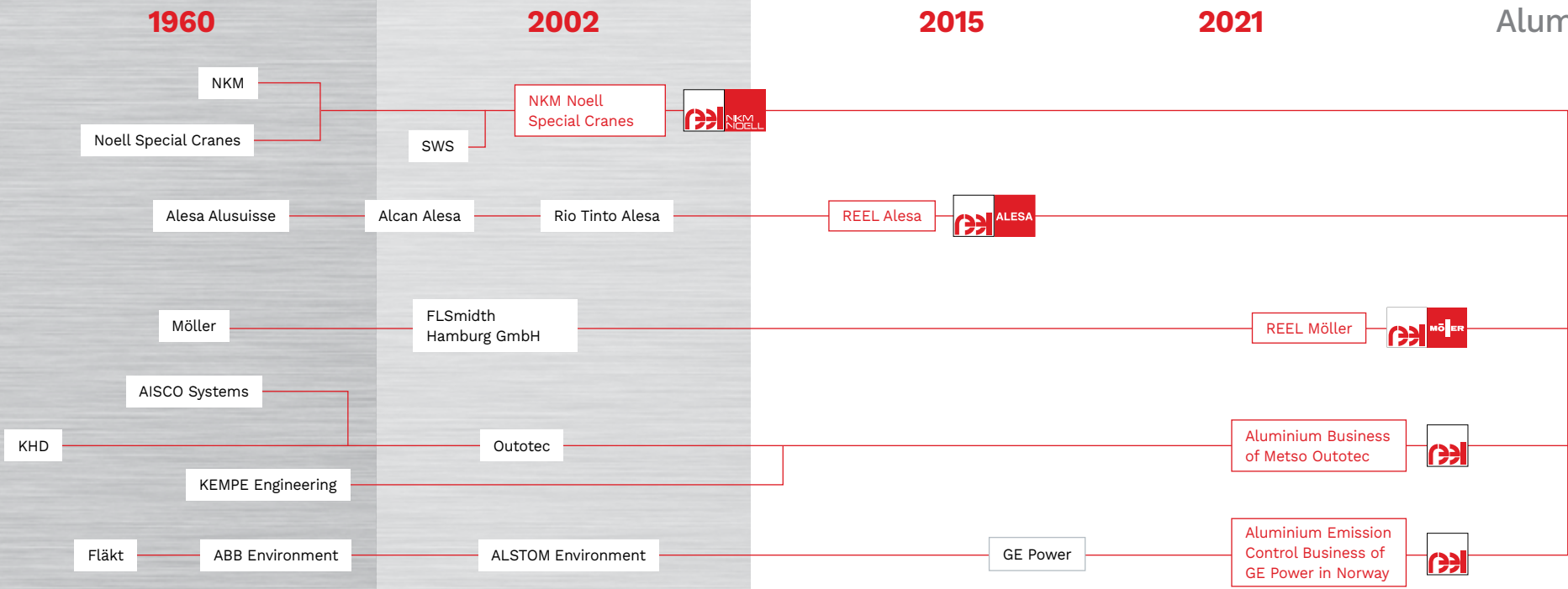
120
SAFETY TRAINING
SESSIONS ANNUALLY

OUR VALUES

Performance
Customer Satisfaction
Respect
Commitment
REEL Spirit
Passion



Aluminium Timeline





REEL ALESA AG
 REEL ALESA Ltd
 REEL ALESA SAS
 REEL Norway AS
 REEL Möller GmbH
 REEL GmbH NKM Noell Special Cranes™
 REEL GmbH
 REEL GmbH NKM Noell Special Cranes™
 REEL ALUMINIUM Inc
 REEL ALUMINIUM Pty Ltd
 REEL India Limited
 REEL Shanghai
 NNX Trading (Xiamen) Co Ltd
 REEL Middle East Dubai
 REEL Middle East Bahrain

Switzerland
 Canada
 France
 Norway
 Germany
 Germany
 Germany
 The Netherlands
 Canada
 Australia
 India
 China
 China
 United Arab Emirates
 Bahrain



Max Hoegger-Strasse 6, 8048 Zurich
 248 Ave Dunbar Town of Mount Royal, H3P 2H5, Quebec
 Bâtiment B 140 avenue du 12 juillet 1998 Les Milles, 13290 Aix en Provence
 Hovfaret 17, 2nd floor, 0275, Oslo
 Haderslebener Strasse 7 25421 Pinneberg
 Rudolf-Diesel-Straße 1, 97209 Veitshoechheim
 Albin-Köbis-Straße 8, 51147 Cologne
 Kruisweg 643, 2132 NC Hoofddorp
 1400 Corporate Drive, Burlington, L7L 7L6, Ontario
 50 Gheringhap Street, Geelong, 3220, Victoria
 PS Srijan Corporate Park Tower 1, Block GP-2, Sector-V, Salt Lake, Kolkata- 700091, West Bengal
 Room 702-03B, Building A, BeiMei Plaza, No. 518, Kunming Road, Yangpu District, Shanghai
 Part II of Unit 405, 4/F, Building No. 5, Aviation Business Plaza, 228 South Fifth Road, Gaoqi, Xiamen
 Office No. 1301, Al Shafar Tower 1 Barsha Heights (TECOM), Dubai
 Office No. 34, Building Y98, Road 3901, Block 939, Riffa, Kingdom of Bahrain



reelinternational.com