

# WE UNDERSTAND YOUR CHALLENGE

(AND WE HAVE THE SOLUTION)





# WHO WE ARE

We are  
Stamicarbon.  
We pioneer with a  
higher purpose to  
enable the world  
to feed itself and  
improve quality of  
life.



# A PIONEER IN THE GLOBAL FERTILIZER MARKET

Stamicarbon is a part of NEXTCHEM,  
MAIRE's company dedicated to  
Sustainable Technology Solutions.

At the forefront of innovation, our company  
is committed to shaping a low-carbon future.

We provide integrated, sustainable solutions  
to fertilizer producers across the world.

## STAMICARBON

### NX STAMI **UREA**

Technology design  
Equipment supply  
UAN & UAS technology  
Services & Solutions

### NX STAMI **AMMONIA**

Technology design  
Equipment supply  
Services & Solutions

### NX STAMI **NITRATES**

Mono & Dual pressure Nitric Acid Technology  
NO<sub>x</sub> & N<sub>2</sub>O abatement  
Equipment supply  
Services & Solutions

### NX STAMI **SPECIALTIES**

NO<sub>x</sub> reduction (DEF)  
Controlled-release-fertilizer  
Coatings & additives

### NX STAMI **DIGITAL**

Monitor Simulator



**+75 years**

of experience

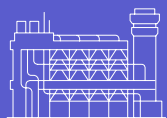
**+260**

urea plants worldwide



**34%**

urea granulation market share



**+60%**

world market share  
in urea licensing



**+110**

revamping and  
optimization projects

**+90**

patent families  
registered worldwide



**52%**

urea melt market share



**+2000**

individual patents





Stamicarbon designs and licenses fertilizer plant technologies, specializing in urea, ammonia and nitrates. Leveraging almost 80 years of knowledge and expertise, we offer our customers tailored solutions to maintain, improve and optimize their plants at every stage. At the same time, we invest in R&D and incremental innovation to ensure our customers stay ahead of the competition.





Full lifecycle  
support

**LAUNCH<sup>TM</sup>**  
**ADVANCE<sup>TM</sup>**  
**EVOLVE<sup>TM</sup>**

# STAMI<sup>TM</sup> UREA

From creating a new plant to optimizing and upgrading existing facilities, we are there for you every step of the way in your quest for sustainable, future-proof production.

There's a reason why we are the global market leader in urea technology. Take advantage of our knowledge and expertise...

# CREATING YOUR PLANT

Our LAUNCH series of technologies, products and services help ensure your new urea plant is **designed and built** to optimal specs.

You need to make important economic and technical decisions right from the start.

We provide support in this vital exploratory

phase, and guide you throughout the journey from **process design and project management to plant start-up**.

Our Ultra-Low Energy design boasts the lowest steam consumption in the market and our reliable finishing technologies are best in class.

## Melt technologies

Our CO<sub>2</sub> stripping process simplifies the plant's overall design

## Finishing technologies

Granulation, prilling and pastillation

## LAUNCH™

Project development

Feasibility studies

Technical & commercial services

Process design proposal

Basic design

Proprietary equipment

Detailed engineering

Procurement

Construction

Pre-commissioning

Operator training



# OPTIMIZING YOUR PLANT

By fully optimizing your urea plant, you extend its life, boost output and improve energy-efficiency. Your urea plant will meet the highest safety standards and exceed all environmental regulations.

Our ADVANCE series provides a range of **product and service options that take your plant performance to the next level.** We help you advance your plant operations in five areas:

1. Inspections and plant maintenance
2. Improving product quality
3. Improving safety and reducing environmental impact
4. Optimizing plant output and operational control
5. Support and plant staff training

## ADVANCE™

High pressure equipment replacement  
Relining/repair  
Emission reductions  
Mechanical services  
Lifetime assessment  
Plant staff training  
Troubleshooting  
Process optimization tools  
Additives/coatings  
Plant inspections  
High-pressure piping/fittings/valves  
Process control equipment  
Welding training & supervision  
Spare parts



In case of an emergency, our Agile Response Team is on call 24/7 to get you back to production. One of our experienced engineers will assess your emergency and form an emergency team to arrive at the plant site as soon as it can be arranged.

# UPGRADING YOUR EXISTING PLANT

Our EVOLVE series provides technology and solutions to upgrade your plant. Whether your aim is to expand capacity, improve sustainability or adapt to new legislation or

market conditions. Our EVOLVE series offers three main revamp solutions, each of which can be tailored to your specific needs.

## EVOLVE CAPACITY™

Boost output at your plant by anything from 10% to 100%

## EVOLVE EMISSION™

Reduce your emissions in step with international standards

## EVOLVE ENERGY™

Lower your steam use and optimize your feedstock consumption

## EVOLVE™

Pre-feasibility study

Feasibility study

Process design package

Basic engineering package

Proprietary equipment design & delivery

Contractor guidance & control

Commission assistance

Plant assessment



Learn more  
about NX Stami Urea.  
Visit our website

[www.stamicarbon.com](http://www.stamicarbon.com)



NX Stami™ Ammonia technology is a comprehensive solution for future-proof, carbon-free ammonia production.

- < Most competitive technology in terms of CAPEX
- < Strongest reference base
- < Full modularization
- < Improved reliability
- < Proven design



# STAMI™ AMMONIA

## A NEW PERSPECTIVE IN THE INDUSTRY

### Technologies that make a difference:

Our ammonia technologies portfolio includes two distinct designs, each tailored to specific project scales, feedstock types, and sustainability goals:

Whether your priority is small-to-medium scale production from renewable electricity or large-scale ammonia from fossil sources with carbon capture integration, we have the solution to match your needs.

	NX STAMI™ Ammonia High-Pressure Design	NX STAMI™ Ammonia Medium-Pressure Design
Production Scale	50–500 MTPD of ammonia	50–3,500 MTPD of ammonia
Feedstock to Produce Hydrogen	Renewable electricity (solar/wind/hydro/geothermal)	Renewables or fossil fuels with Carbon Capture Utilization and Storage
Advantages	Modular design, small footprint, fully renewable process	Efficient ammonia production at low cost
Use Case	Decentralized production of green ammonia in renewable-rich regions	Large-scale production, e.g. integrated into major fertilizer complexes



### Enabling the transition to sustainable energy

Ammonia is emerging as a key enabler of the energy transition, and its role as a hydrogen carrier is expanding rapidly in decarbonizing hard-to-abate sectors.

As world market leader in fertilizer plant design, licensing and construction, we believe Green Ammonia can play a key role in helping address the carbon challenge.

# STAMI™ NITRATES

When setting up a nitric acid plant, it's essential to maximize energy recovery while minimizing cost of investment and greenhouse gas emissions.

Since the 1930s we have licensed a range of **safe, reliable and sustainable nitrate technologies** and built over 40 nitric acid plants worldwide. Depending on your preferences, we offer best-in-class, **mono- and dual-pressure nitric acid technologies**.

## Smart Nitric Acid Production. Sustainable by Design.

Stamicarbon's mono and dual pressure nitric

acid technologies are engineered to deliver maximum energy recovery, minimal emissions, and reliable operation, no matter your production scale.

Our designs are tailored for both new and existing plants, ensuring optimized performance, cost efficiency, and compliance with the world's most stringent emission standards.

Both technologies ensure maximum energy recovery through high tail gas temperatures (up to 480°C) and corrosion-resistant layouts, minimizing material costs and extending plant life.



## Key benefits

- < High tail gas temperature boosts  $N_2O$  decomposition without adding external agents like natural gas.
- < Maximum energy recovery:
  - Extra power generation in the expansion turbine
  - Additional heat recovery minimizes energy loss through tail gas emissions
- < Corrosion prevention by design



Read more about our nitric acid technology at

[www.stamicarbon.com](http://www.stamicarbon.com)

Features	Mono Pressure	Dual Pressure
Plant Capacity	up to 600 MTPD	up to 2000 MTPD
Operating Pressure	8 bar(a)	5–11 bar(a)
Steam Export	> 600 kg/t $HNO_3$	> 800 kg/t $HNO_3$
NO <sub>x</sub> & N <sub>2</sub> O Emissions	< 20 ppm	< 20 ppm
Cooling Water Consumption	110 t/t $HNO_3$	100 t/t $HNO_3$

## Revamping & Debottlenecking Solutions

We help you extend your nitric acid plant's life, increase capacity, and reduce emissions, with minimal downtime.

Three core upgrade goals:

1. Increase Capacity – modernize key equipment, optimize airflow and heat recovery, and boost on-stream time.
2. Reduce Emissions – retrofit with our tertiary abatement system for total NO<sub>x</sub>/N<sub>2</sub>O reduction.
3. Improve Energy Efficiency – upgrade process design to cut fuel and utilities while increasing steam export.

We offer complete revamp assessments, process design, debottlenecking, feasibility studies, and operator training simulators.

## Equipment Replacement & Support

Stamicarbon's optimized process conditions minimize corrosion and extend equipment life. However, when aging units require replacement, we provide mechanical support, troubleshooting, inspections, and upgrades to keep your plant compliant and profitable.

Whether you're building a new nitric acid plant or upgrading an existing one, we're ready to help you achieve sustainable, future-proof production.







**SMART,  
INNOVATIVE,  
FUTURE-  
PROOF  
SOLUTIONS.**

# STAMI™ SPECIALTIES

## Next-level fertilizer technology

Stami Specialties are smart solutions for producers who want to capture value-added niche markets.

## Controlled-release fertilizer

Capitalize on the latest cutting-edge technology to offer farmers a range of smart fertilizer products fine-tuned to their customer and crop needs. Our controlled-release fertilizer design with PurActive™ technology, developed in association with Pursell Agri-Tech, is a complete package to kick-start your new product line.

## DEF/NOx reduction

Our premium AdBlue® technology concepts produce 32.5% aqueous urea solution (AUS32), also known as diesel exhaust fluid (DEF), to reduce NOx in diesel engines.

As a licensor of urea technology, we are ideally placed to develop a state-of-the-art solution that complies with today's regulations while also anticipating future requirements.



Like to know more? See our website at

[www.stamicarbon.com](http://www.stamicarbon.com)



**WE BUILD  
OUTSTANDING  
HIGH-FIDELITY  
OPERATOR  
TRAINING  
SIMULATORS.**

# **STAMI™ DIGITAL**

## **Optimizing the future of plant operations**

Digitalization **increases production efficiency**, while reducing energy consumption, emissions and downtime.

All you need is the right kind of data - plus

the know-how and technology to interpret and benefit from it. Our digital solutions turn real-time process data into meaningful insights that empower plant staff to take operational performance to the next level.





## PROCESS MONITOR

Even the most skilled operator cannot keep track of every parameter. Our custom-made dashboard displays continuous real-time equipment and instrument performance data, as well as soft-sensor output based on real-time data. Insights based on historical plant operations and Stamicarbon's state-of-the-art heat and material balance, thermodynamic and kinetic models help stabilize and optimize plant performance. Our Process Monitor can also help operators to improve their skills.

## TRAINING FOR UREA



We have more than 25 years' experience in building outstanding high-fidelity technology training simulators. Tailored to your model, process and DCS interface, simulator training gives plant staff the knowledge and know-how needed to respond to unforeseen circumstances, avoid unnecessary downtime and ensure safe plant operations at all times.



More insights at

[www.stamicarbon.com](http://www.stamicarbon.com)

# WHAT'S NEXT?

For nearly 80 years, we have built our knowledge and expertise, pioneering innovations that have shaped the industry. In return, we have been entrusted with the honor and responsibility of leading the market - a position that inspires and drives us to keep innovating for a better, more sustainable future.

Pejman Djavdan,  
Technology President MAIRE Group and  
CEO Stamicarbon



## Towards sustainable fertilizer production

Agriculture is facing many challenges. Climate change, the decline of arable land, growing population (projected to reach 9.7bn by 2050) all point to the need for a huge increase in food production. How can we feed everyone while taking better care of our planet? Stamicarbon helps you make a difference, by continuously developing innovative solutions to create a sustainable future. We draw on the experience accumulated over the past 75 years to develop solutions to your challenges - now and in the future.

## THE CHALLENGE OUR SOLUTION

- |  |   |
|--|---|
| < Comply with ever more stringent emission regulations | < MicroMist™ Venturi                                    |
| < Reduce energy consumption                            | < Jet Venturi scrubbing systems                         |
| < Increase fertilizer plant efficiency                 | < Ultra low energy design                               |
| < Reduce planned and unplanned downtime                | < Stami Digital™ Process Monitor                        |
| < Ensure business continuity                           | < Minimizing air passivation                            |
| < Ensure high product quality                          | < Inspection services                                   |
| < Ensure properly trained staff                        | < Reducing corrosion                                    |
|  | < Radar level management                                |
|  | < Leak detection system                                 |
|  | < Urea, nitric acid and ammonia product differentiation |
|  | < Revamp studies  |
|  | < Advance Coat™ for urea and UAS                        |
|  | < Advance Instruct training                             |
|  | < Webinars and conferences                              |
|  | < Consulting services                                   |

# WE ARE STAMICARBON

# WHAT CAN WE DO FOR YOU?

Stamicarbon, the nitrogen technology licensor of NEXTCHEM (MAIRE Group), designs and licenses fertilizer plant technologies, specializing in urea, green ammonia, and nitric acid. As part of NEXTCHEM, Stamicarbon leverages the capabilities and expertise of a world-leading engineering group. In total, Stamicarbon has licensed more than 260 urea plants and realized more than 100 revamping and optimization projects. Applying more almost 80 years of

knowledge and experience, Stamicarbon offers you tailored solutions and services to maintain, improve and optimize plants in every stage of their life cycle, with a focus on sustainable fertilizer production. As pioneers with a higher purpose, Stamicarbon's vision is to help enable the world to feed itself and improve the quality of life. Stamicarbon is headquartered in Sittard, The Netherlands, and operates worldwide.

## Questions?

Would you like to know more? Talk to us - we're here for you! Contact our experts at [www.stamicarbon.com](http://www.stamicarbon.com).



## Stamicarbon

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# NEXTCHEM

MAIRE Sustainable Technology Solutions