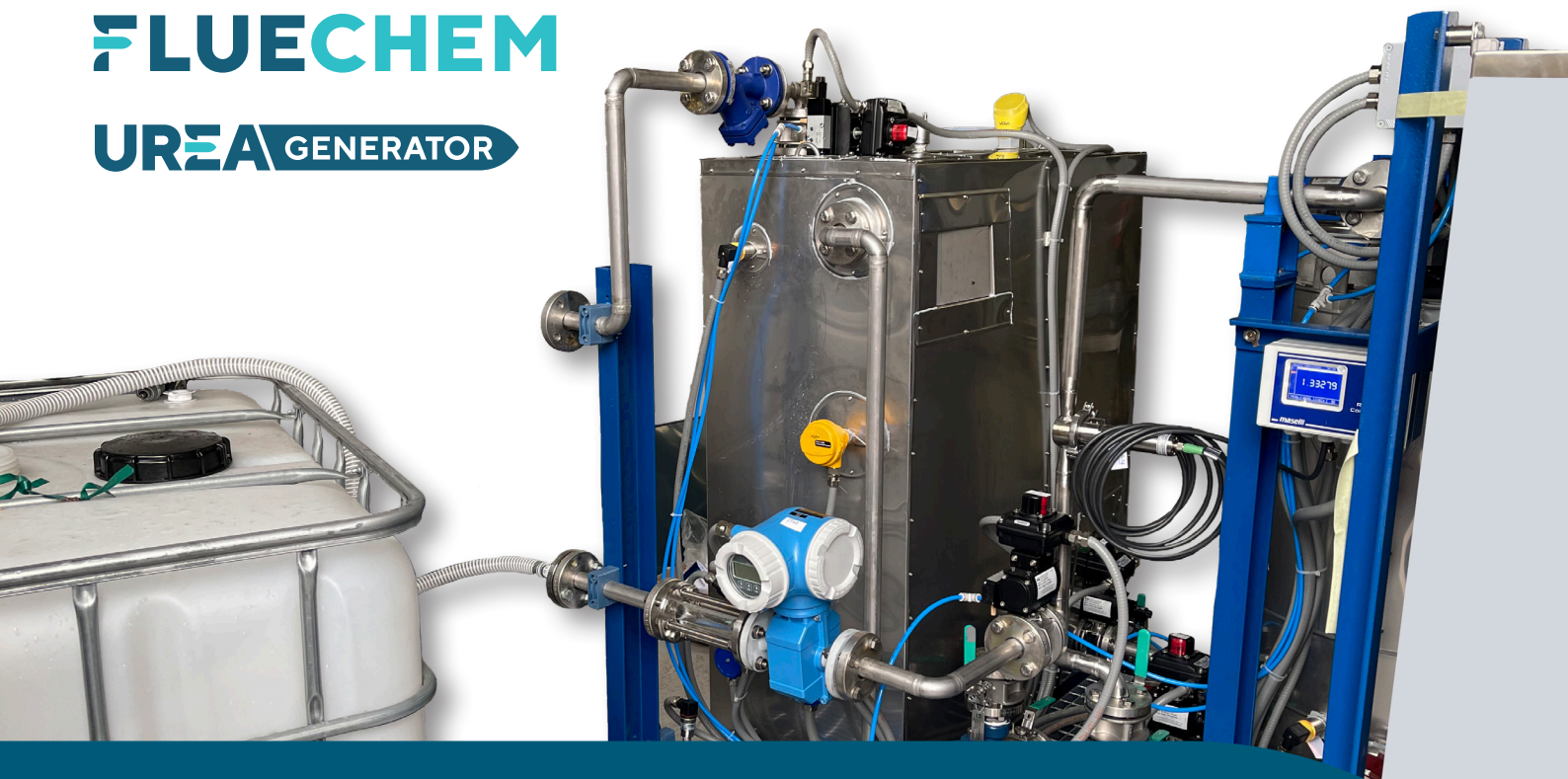


FLUECHEM

UREA GENERATOR



UREAGENERATOR – THE NEXT STEP IN MARINE

SAVE MONEY.
REDUCE EMISSIONS.
STAY COMPLIANT.

The innovative **UreaGenerator** by Fluechem is a cost-effective, market leading solution already installed and in use on vessels. It allows ship owners to blend their own urea solutions (AUS40 & DEF) onboard, providing security of supply with material cost savings while reducing environmental emissions even further.

fluechem.com

SAVE MONEY

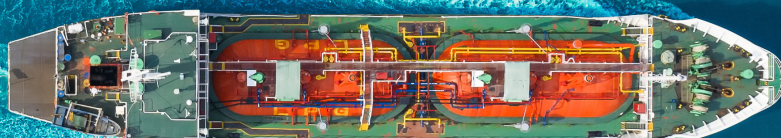
Generating AUS40 & DEF onboard
reduces costs when compared to a
conventional supply chain model

REDUCE EMISSIONS

Reduced logistics creates a more
environmentally friendly solution
lowering CO2 emissions

STAY COMPLIANT

Having ISO standard AUS40 onboard
when you need it, allows compliance
whatever the logistical challenges



UREA GENERATOR

BY FLUECHEM



HOW IT WORKS

The UreaGenerator system blends AUS40 & DEF to the ISO standard whilst reducing costs and adhering to IMO Tier 3 requirements. The proven and patented technology for the marine sector enables users to blend dry urea prills and eliminates the need to dedicate large amounts of space to AUS40 & DEF solution storage tanks. By blending AUS40 & DEF on board as and when you need it, means ship owners can increase revenue whilst reducing NOx emissions to stay compliant and protect the environment and their profits.

RECENT BUSINESS CASE - HAVE WE REALISED THE 'OPPORTUNITY'

Element	Measure	Result
Reduce the weight of the product being transported to the vessel by	AUS40 liquid 10 lorries and launches reduced to 4 urea prills deliveries (saving ~12mt CO2 pa*)	✓
Reduce the weight of the product onboard	Storage volume reduced by 50m3 = 55mt	✓
Allow greater control over availability	Urea prills generally available – AUS40 blended as required	✓
Allow better quality control & shelf life issues	AUS40 only blended when required. Quality measured onboard	✓
Not adversely impact day to day shipboard operations and resources	Big bag loading system needs refilling every 3 ½ days. <2hrs planned maintenance pm. Loading operations reduced	✓
Reduce costs	Business case assessments carried out for all proposals – annual savings ~\$131k/pa	✓

DESIGN FEATURES

- Single design with flexible capacity 500L AUS 40 & DEF /day to 5,000L AUS 40 & DEF /day to optimise CAPEX
- Stand-alone unit with single control panel interface
- Compact modular design to allow vessel retrofits
- Ability to use vessel pot water or option for RO unit
- Manual 25 kg bag feeding unit or semi-automatic 1 000 kg big bag feeding unit

PRODUCTION PROCESS

- Detailed design with functional specification agreed with the customer
- Agreed vessel specific interfaces: base plate and service connections
- Control interface and protocols specified
- Schedule milestones agreed including FAT requirements

INSTALLATION

- Single control point interface with three utility connections
- Units can be supplied EXW delivery or installed under a full turnkey solution
- Our team of engineers can work with you to install the UreaGenerator quickly and efficiently whilst the vessel remains in service without any downtime at any global port or shipyard
- The UreaGenerator system is designed to be fully integrated into your current control system and is internet enabled

QUALITY ASSURANCE

- Own facility fabrication and assembly allows effective QA/QC control and project management
- 24hr hour system FAT to AUS 40 & DEF ISO Standards prior delivery
- Designed and built to EU and Class Society standards

BENEFITS

60%

COST SAVINGS

Procuring urea prills as opposed to the supply of the urea liquid solution reduces expenditure and can save up to 60% on the delivered cost of AUS40 & DEF.

50%

SPACE AND WEIGHT SAVING

An operational UreaGenerator onboard reduces the requirement for having a large AUS40 & DEF stock onboard meaning a reduction of up to 50% of required space and weight.

110%

GREENER

Lower CO2 and other emissions through the procurement of dry urea prills and reduced supply chain emissions.

Our UreaGenerators can be fitted with semi-automated or manual urea prills loading systems to optimise costs and operational requirements

100% – Greater Quality Control: ISO standard AUS40 & DEF only blended when you need it with quality measured onboard rather than onshore.

FIND OUT MORE

If you would like more information or receive a vessel(s) specific proposal for the Fluechem UreaGenerator, speak to our team on **+44 (0) 20 800 35 982 / +1 713 535 3930** or email **info@fluechem.com**. We can design and install an UreaGenerator that will cover your ships IMO Tier III requirements; keeping you compliant whilst saving you money and reducing emissions even further.

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