

EXPLOSIVES

TECHNICAL GRADE AMMONIUM NITRATE

**MAADEN LOCALIZATION
OPPORTUNITY CARD**



EXPLOSIVES - TECHNICAL GRADE AMMONIUM NITRATE

OPPORTUNITY SUMMARY

Case Summary

Established Demand Base

Explosives are essential for mining operations, with ongoing demand supported by mining activity in KSA.

Import-Led Market

TAN and explosives are largely imported, indicating potential localization opportunities.

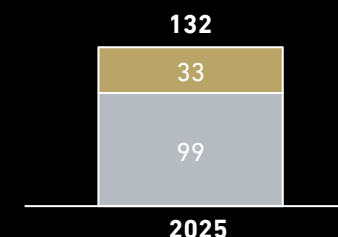
Feedstock-Driven Economics

~70–80% of costs are driven by ammonia and nitric acid, with feedstock availability and partnerships as key factors influencing project feasibility.

Maaden & Market Demand

GCC demand, kmt (2025)

■ Maaden Demand ■ Rest of GCC Demand



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LOCALIZATION OPPORTUNITY OVERVIEW

1

Existing Demand Base

Explosives are a critical input for mining, with limited alternatives. Mining and construction activities in Saudi Arabia support ongoing demand, reflected in approximately 80–120 kt p.a. of TAN-equivalent imports, which may support offtake arrangements subject to commercial terms.

2

Import Substitution

The Saudi market is largely supplied through imports, primarily from Egypt (~70–80%), exposing customers to logistics, geopolitical, and supply continuity considerations. A local plant may reduce reliance on imports, subject to market adoption and competitiveness.

3

Feedstock-Driven Economics

TAN production economics are largely determined by ammonia and nitric acid, which together account for ~70–80% of cash costs. KSA's competitive ammonia availability and the ability to secure nitric acid through partnerships may support competitive production, depending on feedstock access and operating conditions.

4

Delivered Cost & Risk Advantage

Local production may reduce exposure to international freight, port congestion, and inventory holding, potentially improving supply chain efficiency compared to imported TAN (typically ~SAR 2,100–2,300/tonne landed), while also enhancing supply reliability.

5

potential extension into downstream activities

A localized TAN asset may provide optionality to expand into ANFO and emulsion explosives, enabling downstream integration into explosives manufacturing and, potentially, blasting services.

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VALUE CHAIN

Ammonia Production / Supply



Ammonia (NH_3) is produced or sourced from gas-based plants and represents a **core feedstock** for TAN production

Nitric Acid Production / Supply



Ammonia is oxidized to produce nitric acid (HNO_3), a **critical and cost-dominant input**, typically integrated or secured via long-term contracts

Ammonium Nitrate Synthesis



Ammonia reacts with nitric acid in a neutralizer to produce ammonium nitrate solution, releasing heat and forming the base TAN product

Concentration & Solidification



The solution is concentrated and converted into solid form through **prilling or granulation**, producing technical-grade ammonium nitrate

Drying, Cooling & Coating



TAN is dried, cooled, and coated with anti-caking agents to ensure storage stability and handling performance

Explosives Formulation (Downstream)



TAN is blended with fuel oil or additives to produce **ANFO or emulsions**, tailored to mining and construction blasting requirements

Distribution & Blasting Services



Finished explosives are delivered to mine sites or used via **on-site mixing and blasting services**, completing the downstream value capture

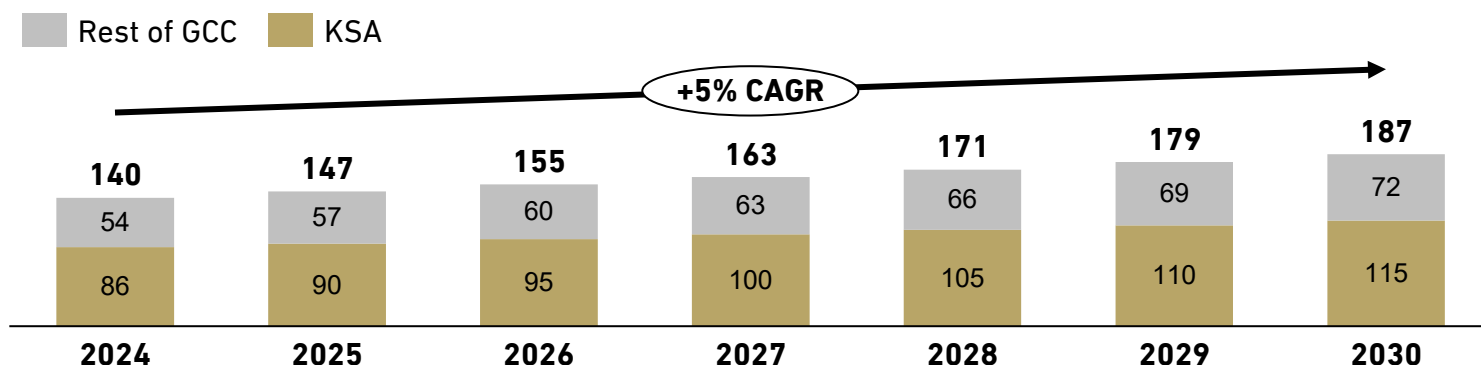
Localization potential



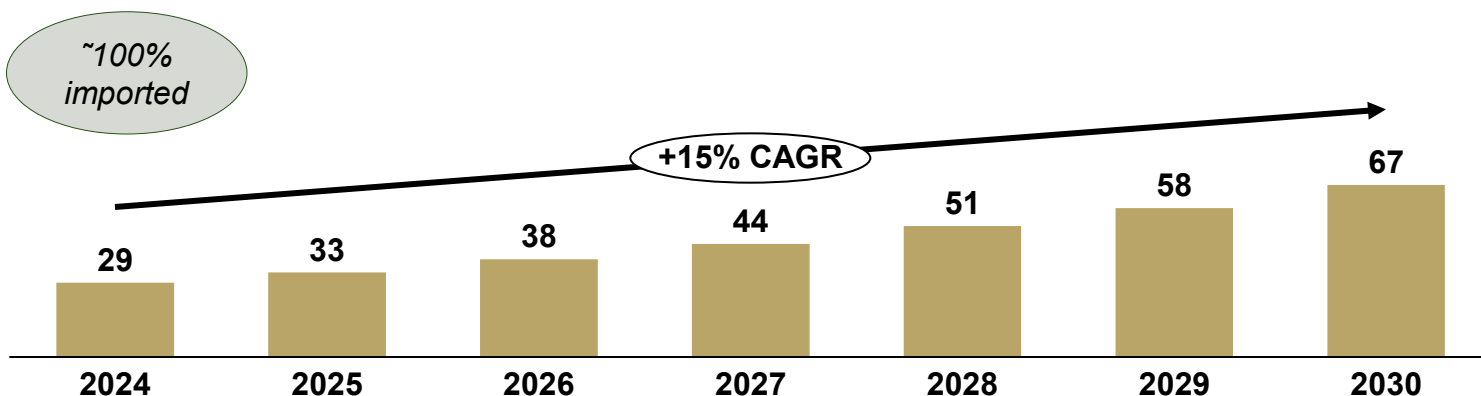
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MARKET DEMAND & SUPPLY

Market Demand, kmt



Maaden Demand, kmt



Market Trends & Demand Drivers

- 1 Expansion of mines, quarries, and major projects increases recurring demand for bulk explosives (ANFO/emulsions) and the TAN feedstock behind them
- 2 KSA TAN supply is still largely import-led, with sourcing concentrated, increasing exposure to logistics disruptions and trade constraints
- 3 Operators are demanding more consistent product quality (PSD, density, moisture control) and stronger HSE compliance
- 4 Customers increasingly value local storage, on-site/mobile mixing, fast replenishment, and blasting services

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The KSA ecosystem comprises six main categories, supported by key enablers

