Nitrogen Supply/Demand Outlook
TFI Fertilizer Outlook and Technology Conference

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10 years as fertilizer analyst
Formerly CRU, Argus FMB
Urea and Nitrates Outlooks
Specialty fertilizers
Near-term urea prices $/t fob

- Yuzhnyy prills
- Egypt gran
- USG metric
- Middle East gran
Near-term urea prices $/t fob
China

Iran

Urea Exports '000 product tonnes (Customs data)
US urea exports

Reported destinations in 2017 include: Canada, Mexico, Chile, Brazil, Nicaragua, Costa Rica
Key Urea importers to 2020

**BRAZIL**

**Key Issues:**
- weakness of Real
- The reconciled 2016 figure from the trade matrix shows a CY total of 4,709,000 t
- Delay in domestic project at Tres Lagoas
- New supply from Bolivia
- Increasing volumes of Middle East urea

**Direct Application Growth**
- 2015-20 1.7% p.a.

**TURKEY**

**Key Issues:**
- The reconciled 2016 figure from the trade matrix shows a CY total of 2,382,000.
- Urea imports have increased since nitrates movement ban in 2016
- Possible contender for new urea capacity – one company is looking at it
- TANAP pipeline being constructed
- Likely that urea imports moving to Syria
- Urea imports for non-fertilizer applications

**Direct Application Growth**
- 2015-20 2.6% p.a.

**INDIA**

**Key Issues:**
- Lack of investment in new urea production (not new!)
- Farmers benefit from current low urea prices, so no incentive to invest
- Indecision over gas pricing
- Nutrient-based subsidy scheme still skewed to urea
- Looking for JV partnerships like Omifco, likely with Iran

**Direct Application Growth**
- 2015-20 1.5% p.a.

**THAILAND**

**Key Issues:**
- The reconciled 2016 figure from the trade matrix shows a CY total of 2,265,000 t, which is higher than the total of 2,044,000 t for the 2015 matrix. Should benefit from regional supply coming on-stream, although has long-term contracts with Middle East supplier
- Flat growth prospect in the longer term

**Direct Application Growth**
- 2015-20 0.8% p.a.

Source: Customs data / Fertecon reconciled data
India urea imports by origin (000 metric t)
Utilisation rates

Capacity additions (Mt left axis, ex-China) vs global utilisation rate (right axis)

Source: Fertecon Urea Outlook
USA - UAN capacity could reach 19.4 million t by 2020; 15.3 million t in current projections

UAN capacity end-2015: ~12.5 million t
Definite additions 2016-2017: 2.9 million t
Possible additions 2018-2020: 4 million t

Source: Fertecon Nitrates Outlook
Additional capacity causes shifts in the US UAN balance ...

Imports are projected to decline, while exports are projected to reach around 1.5 million t by 2020.

US UAN Balance (’000 t product)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2017</th>
<th>2020</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production</td>
<td>8,800</td>
<td>10,650</td>
<td>12,000</td>
<td>13,500</td>
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<tr>
<td>Imports</td>
<td>3,093</td>
<td>2,690</td>
<td>2,050</td>
<td>1,125</td>
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<tr>
<td>Exports</td>
<td>538</td>
<td>1,350</td>
<td>1,470</td>
<td>1,555</td>
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<tr>
<td>App Consumption</td>
<td>11,355</td>
<td>11,990</td>
<td>12,580</td>
<td>13,070</td>
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</tbody>
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US UAN Net Imports & Projection (’000 t product)

Latest projections suggest the US will become a net exporter of UAN between 2020 and 2025, but could be sooner.

Source: Fertecon Nitrates Outlook
... and in global UAN trade

- More from USA to Europe
- More UAN from USA to Brazil, Argentina and LatAm in general
- Less from Lithuania to USA
- Russia to suffer least amid lower US imports
- Stable volumes from China to USWC

Source: Fertecon Nitrates Outlook
Innovations and trends in N fertilizers

Focus is on premium products and new blend compositions

- Growth of NP fertilizers and blending / liquids and fertigation
- Addition of sulphur: NP+S, CAN+S
- Addition of magnesium: CAN+Mg
- Addition of biostimulants
- Satellite imaging and drones
SCRF and SF: Opportunities and Obstacles

- SCRF and SF typically sold at premium to conventional fertilizers
- Environmental drivers – such as Nutrient Use Efficiency, GHG emission
- Policy drivers – China 2020
- EU regulations
- Barriers to entry – big players already involved
- Limited data sources
- Conventional producers already involved in enhanced products (such as adding magnesium or boron)
- Classification of biostimulants
In the future – where’s the historical opportunity from an investor’s perspective?
Water-use efficiency – and area-use efficiency AUE?
• Established markets for SCRFs and growing markets for SFs
• Diverse products into diverse markets
• Expansion into broad acres for controlled release – the battle between coatings and SFs
• New capacity in conventional sector to place limit on price premium – especially if looking towards agricultural end-use
• Large fertilizer companies already in the SCRF/SF space AND looking at enhanced fertilizer products (biostimulants and biofertilizers)
• Controlled and delayed release active area of R&D
Conclusions

- Chinese urea exports – expect lower volumes
- Changes in urea trade now apparent
- UAN – watch out for growing US exports
- Feedstock prices offer support but upside risk
Final thoughts...

- Trends already include adding sulphur and micro-nutrients to conventional products. Longer term – value over volume
- Fertilizer companies recently moved into biostimulant space. Eurochem now an ‘agrochemical’ company
- Shale gas exploration in Europe. Fracking bans in France and Netherlands, but UK and Poland keen to pursue
- LNG – more cargoes to West and East Europe particularly once US started exporting in 2016. Ukraine has plans to build receiving terminal.
- Technology – urea plant revamps rather than new greenfield projects to become more common and bring production efficiencies
- R&D – new fertilizer products. Combination or impregnated products with sulphur and micronutrients.
- Blockchain – could this technology help suppliers particularly with premium products?
And...

Future of DEF?

Source: reneweconomy.com.au
Urea Outlook

Quarterly report on global market

- Forecast prices out to 2030 – seven benchmarks $/t – Yuzhnyy prills / Chinese prills/ Egypt gran/ US NOLA gran/ Middle East gran/ Middle East prills/ Caribbean gran
- Production, Import, Exports, App Consumption – by country, historical (from 1981) and projections to 2030 – available EXCEL. Production by country
- Split fertilizer and non-fertilizer urea (approx. 80/20)
- Trade matrices – split prill/gran
- Project assessments / new capacity in projections
- Feedstock cost projections – oil, natural gas, coal
- Production cost projections (by country)
- Cost curves with projections
- Delivered cost projections (freight estimates)
- Price forecast, PIEC data (Excel), production costs ALL INCLUDED in subscription
Slow and controlled release and stabilised fertilizer report

This report includes:

• Slow and Controlled release fertilizers (SCRF) – an overview with definitions, descriptions and products
• Sulphur-coated urea/ polymer-coated urea
• Stabilised fertilizers (SF) – an overview with definitions, descriptions and productions
• Nitrification and Urease inhibitors / Neem coating
• Market breakdown – by volume and value for SCRF and SF
• Main producers of SCRFs and SFs
• Capacity list for SCRFs
• Market projections – by value and volume for SCRF and SF
• 100-word glossary
• Overview of conventional fertilizers/ water soluble/ foliar application/ micronutrients