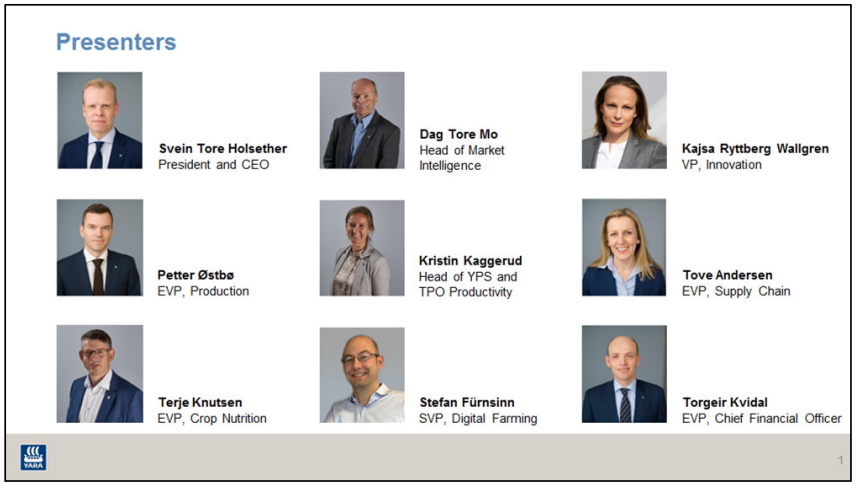
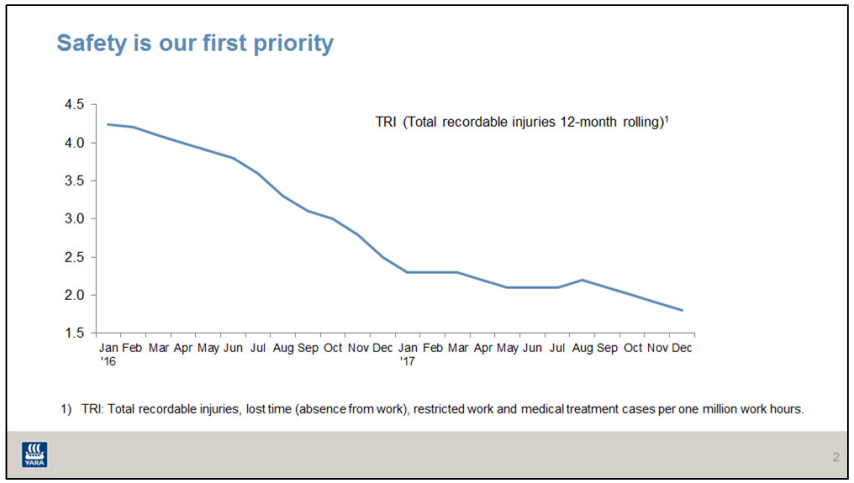
Knowledge grows

Yara International ASA
Capital Markets Day and 4Q 2017 results

Thursday 8 February 2018





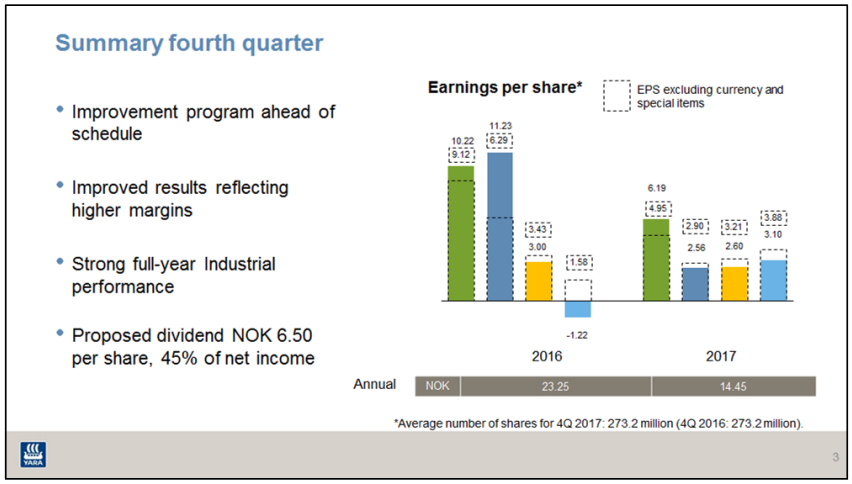
Safety is our first priority

Safety is our license to operate, and our first responsibility as a company, to make sure our employees work safely and return home safely, every day.

Despite significant growth in recent years, acquiring several new businesses and now employing more than 16,000 employees worldwide, we have achieved gradually lower TRI rates.

However, we experienced three fatalities during 2017, all tragic reminders that we must continue to develop and improve the safety processes and culture throughout Yara.

Safety will continue to be our first priority.

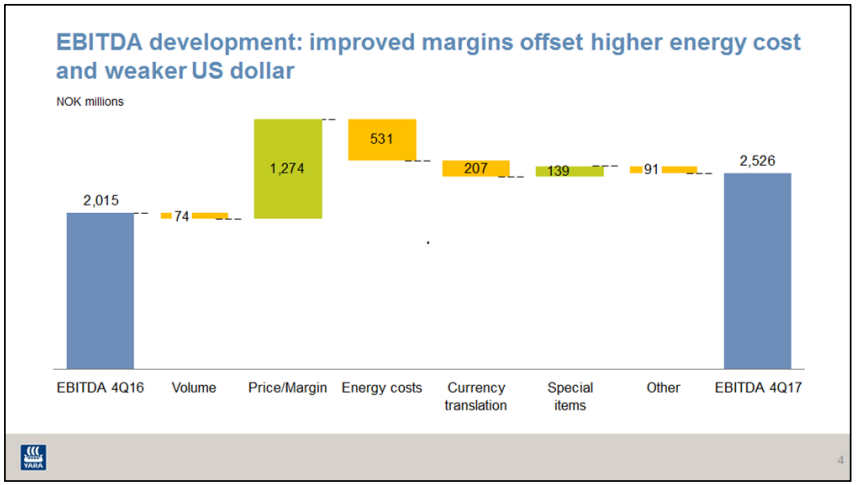


Summary fourth quarter

Yara's underlying earnings per share were 2.3 NOK higher than a year earlier, and the increase mainly reflects higher fertilizer margins.

Reported earnings include a NOK 257 million foreign exchange gain, and NOK 583 million negative special items, mainly closure cost related to discontinuation of a pilot plant for small-scale production of ammonium nitrate in Porsgrunn.

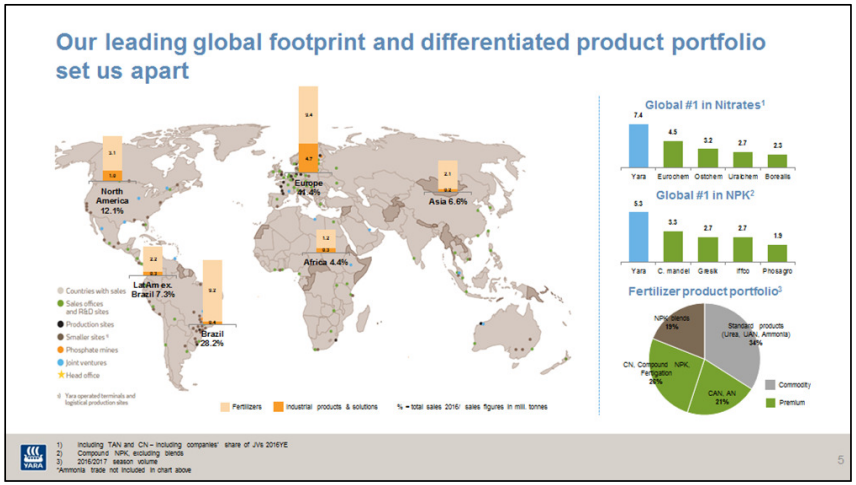
Last year's reported earnings included a NOK 241 million foreign exchange loss, and NOK 623 million of negative special items.



EBITDA development: improved margins offset higher energy cost and weaker US dollar

EBITDA excluding special items was 15% higher compared with fourth quarter 2016, as higher energy cost was more than offset by higher realized prices.

Yara's fertilizer nitrate prices increased approximately 20%, compound NPK prices were 6% higher while fertilizer urea prices increased 13%.

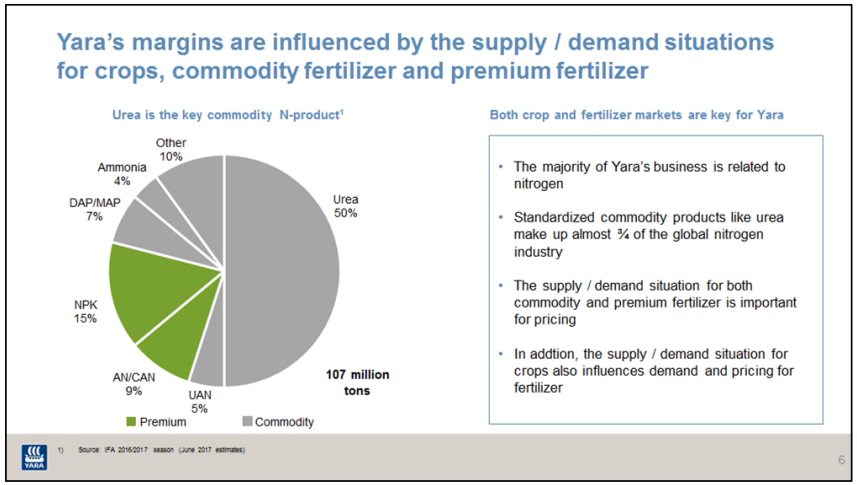


Our leading global footprint and differentiated product portfolio set us apart

Yara is an integrated crop nutrition company with an industrial portfolio. Our global fertilizer marketing and distribution footprint and differentiated product portfolio is unrivalled within our industry.

Two-thirds of Yara's fertilizer portfolio is made up of specialty, differentiated and blended products, while for the nitrogen industry the equivalent share is approximately one quarter.

However, the larger commodity fertilizer market has a strong influence also on Yara's business and product portfolio.

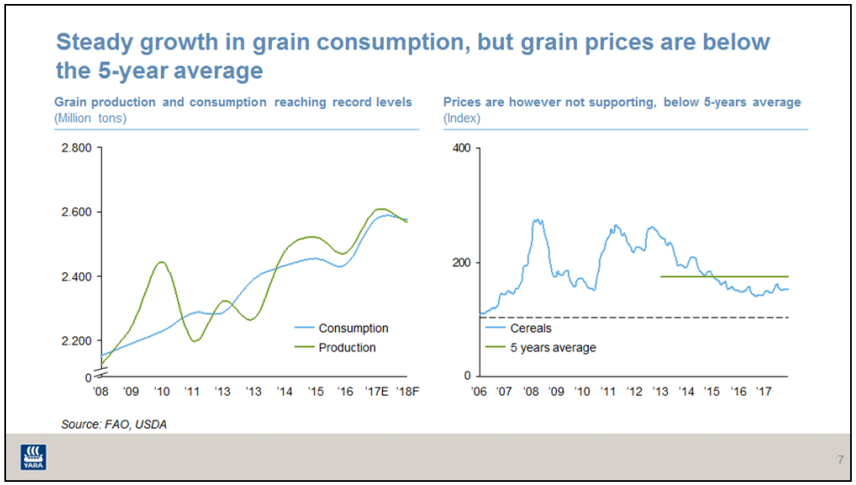


Yara's margins are influenced by the supply / demand situations for crops, commodity fertilizer and premium fertilizer

The majority of our business is related to nitrogen, and global nitrogen pricing is therefore an important value driver for Yara.

Urea is the world's most important nitrogen product, and even if Yara has a more specialized model and product portfolio, the global urea price is an important value driver for Yara.

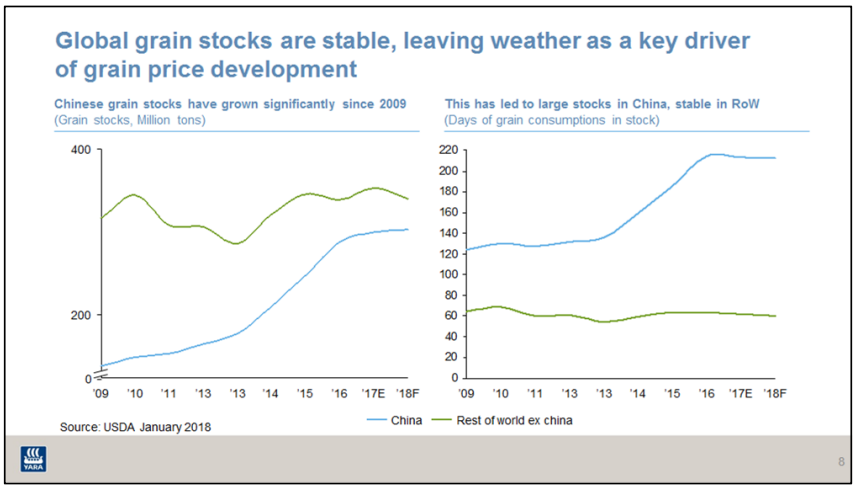
The supply / demand situation for both commodity and premium fertilizer, in addition to the situation for crops all have a key influences on demand and pricing for commodity and premium fertilizer.



Steady growth in grain consumption, but grain prices are below the 5-year average

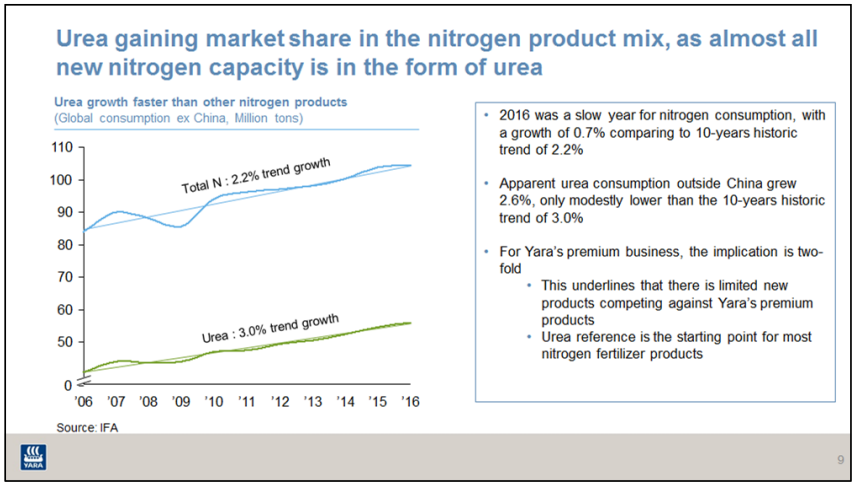
Global grain production is forecasted to be the second strongest on record for the current season, 2017/18. Still, production is not quite matching the increasing consumption, and both stocks and the stocks-to-use ratio are declining modestly.

The Cereal Price index has improved somewhat over the last year, but is still below the 5-year average.



Global grain stocks are stable, leaving weather as a key driver of grain price development

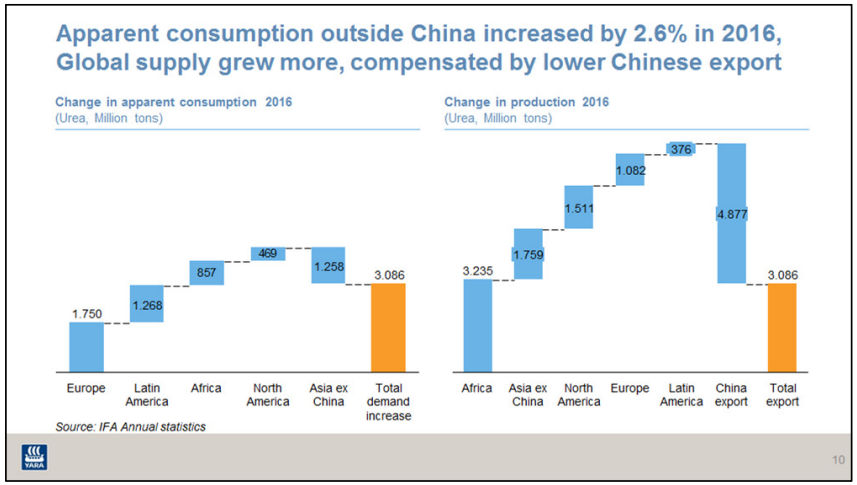
Excluding China, global grain stocks have been quite stable, with a stable stocks-to-use ratio. So weather factors will remain key to grain price developments, even modest yield losses may trigger substantial price increases. There are no signs that China will reduce their grain inventories through substantial grain exports. Grain prices in China exceed global pricing, and quality is an issue. They are now trying to expand ethanol production based on corn.



Urea gaining market share in the nitrogen product mix

2016 was a relatively slow year for global apparent nitrogen consumption (excluding China), growth of 0.7% comparing to a 10-year historic trend growth at 2.2%, with India a major contributor to slow growth. Urea continues to gain market share in the nitrogen mix, as additional nitrogen capacity is dominated by urea. Apparent urea consumption outside China grew by 2.6%, only modestly lower than the 3.0% 10 year historic trend rate. In 2016, 53.4% of all nitrogen was produced as urea.

Based on preliminary numbers by IFA and other sources, 2017 is likely to be another relatively slow year for global nitrogen growth ex. China.

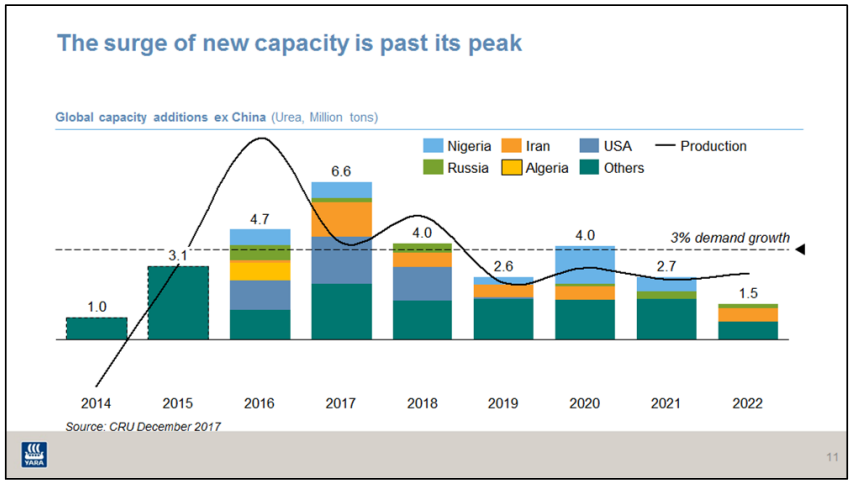


Apparent consumption outside China increased by 2.6% in 2016, Global supply grew more, compensated by lower Chinese export

Outside China, all regions except South Asia increased their apparent consumption of urea in 2016. The decline for Asia is dominated by India.

Global urea supply ex. China increased by a massive 8 million tons in 2016, partly due to new plants (Russia, USA, Algeria, Nigeria and Iran), but also due to increased utilization rates. Egypt was a major factor, increasing urea production by 84% (2.2 million tonnes) as gas supply improved.

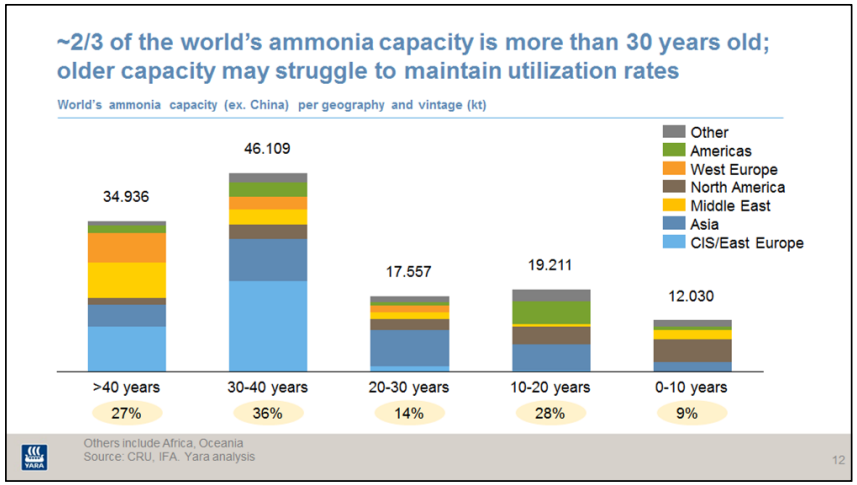
In order to balance the market, Chinese urea exports dropped by 4.9 million tons.



The surge of new capacity is past its peak

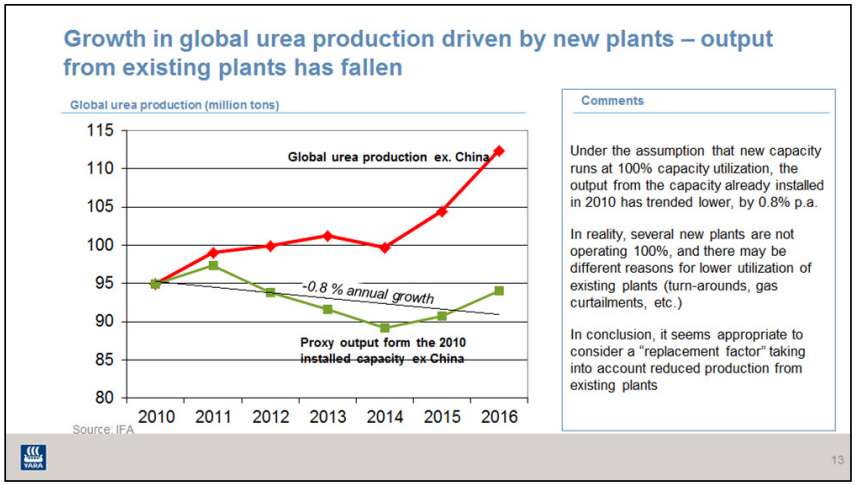
We support the view by CRU that actual supply increase for 2017 was considerably lower than for 2016, and that there is the risk that 2018 may see more supply, due to overhang from projects assumed to start in 2017. On the other hand, it is not unlikely that supply from projects due in 2018 (also partly 2017) will be less than nameplate capacity. In general, many of the projects foreseen for the 2019-2022 period carry a lot of uncertainly.

Based on the around 120 million tons urea consumed in 2016, a 3% historic trend growth would imply the need for around 3.6 million tons additional supply every year. There are arguments for a lower than historic growth rate going forward, with declining relative population growth, focus on nutrient efficiency, less supportive grain pricing, and reduced investments in the biofuels sector. On the other hand, the nitrogen industry is aging, 2/3 of the ammonia capacity was constructed more than 30 years ago. So there will most likely be need for some replacement capacity on top of demand growth.



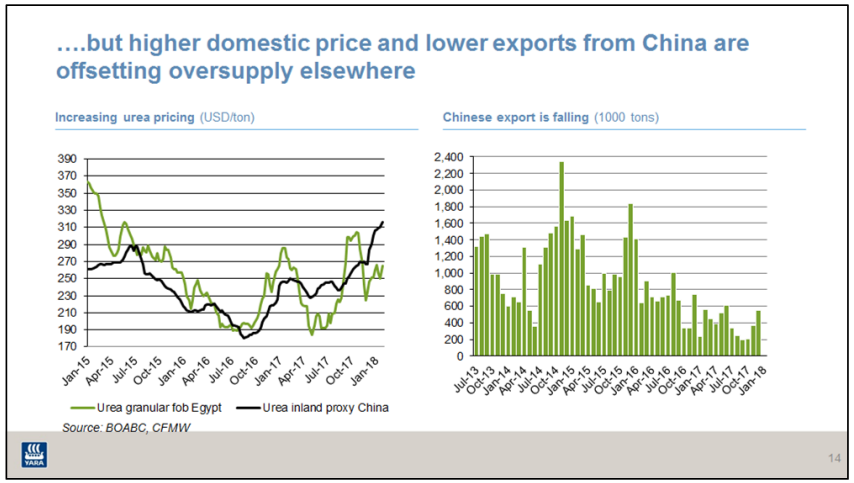
~2/3 of the world's ammonia capacity is more than 30 years old

If well maintained, plants last a long time, some are in addition revamped and upgraded. But overall, production from old plants is likely to be reduced, either due to technical issues, gas supply related problems, urbanization etc. Furthermore, low product prices may also affect maintenance spend.



Growth in global urea production driven by new plants; output from existing plants has fallen

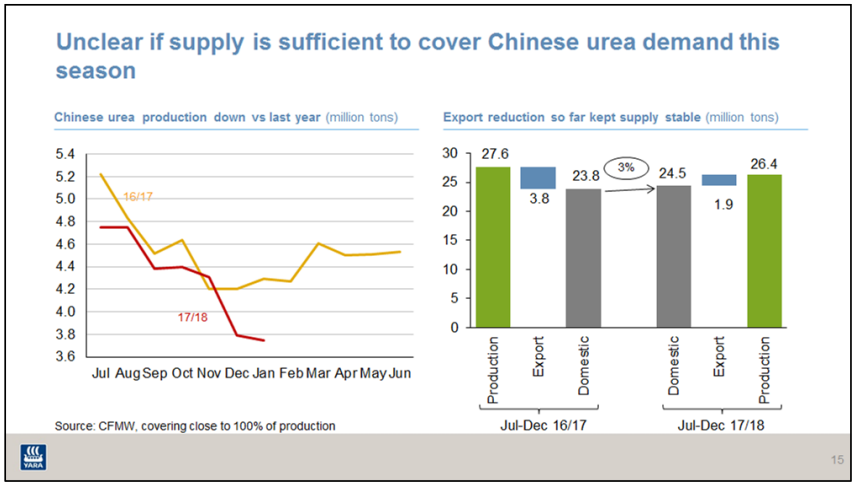
Over the 2010-2016 period, 0.8% annual increase in new production was needed to offset declines elsewhere, but 2015 and particularly 2016 was relatively strong when it comes to global utilization rate.

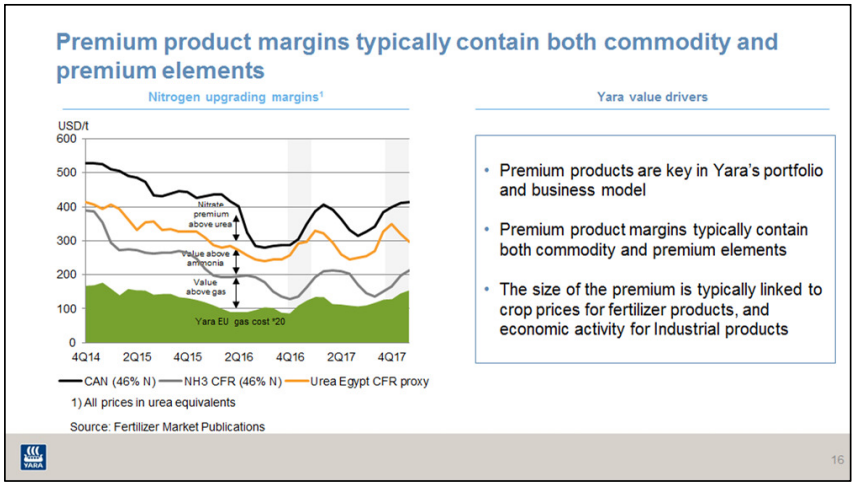


Higher domestic price and lower exports from China are offsetting oversupply elsewhere

From mid 2016, urea prices in China increased primarily due to higher coal prices. Over the last few months, sustained high coal prices, and increased premiums for anthracite coal, the most important grade for ammonia production, have increased costs further. In addition to curtailments due to high coal prices, gas based production is also running at a low utilization rate, due to the natural gas being diverted to heating for winter.

But as capacity additions outside China has reduced the need for Chinese exports, global prices have disconnected from the Chinese price level for part of the year. Recently, there has been interest in importing urea to China, due to the wide price gap.





Unclear if supply is sufficient to cover Chinese urea demand this season

On a season over season comparison, supply may look ok, as domestic supply is still up 3% by end December, despite lower production, due to lower exports. There are two reasons for why the market is still seen considerably tighter this season. Firstly, there were inventories drawn down last season, that is not available this season. Secondly, current production, and the outlook for at least Q1, is well down on last season.

But demand is of course an important factor, and hard to judge, but believed to have been relatively weak last season.

Premium product margins typically contain both commodity and premium elements

Premium products are key in Yara's portfolio and business model, and their margins typically contain both commodity and premium elements.

The size of the premium is typically linked to crop prices for fertilizer products, and economic activity for Industrial products.

Market backdrop: summary

- Supply-driven global grain situation, but inventories outside China are not high
- Urea has gained market share globally, but new-build activity has peaked
- The main new development in the urea market is significantly higher urea prices in China, caused by higher coal prices and increased focus on environmental impact, including limitations to natural gas available to the fertilizer industry
- Higher urea prices in China means larger upside risks also for global pricing, but the reduced demand for Chinese exports also introduce higher volatility
- Yara's integrated business model and differentiation strategy gives Yara robustness and flexibility to manage and potentially take advantage of the more volatile market conditions

Improving agricultural productivity is fundamental to achieve the SDGs: Yara is uniquely positioned to contribute

- Agriculture accounts for ~25% of the world's greenhouse gas emissions
- More than half of this results from land use change
- Improving productivity of land is among the most efficient levers to achieve the SDGs
- Yara is uniquely positioned to deliver solutions to meet this challenge

Improving agricultural productivity is fundamental to achieve the SDGs: Yara is uniquely positioned to contribute

Agriculture accounts for ~25% of the world's greenhouse gas emissions, and more than 50% of this results from land use change.

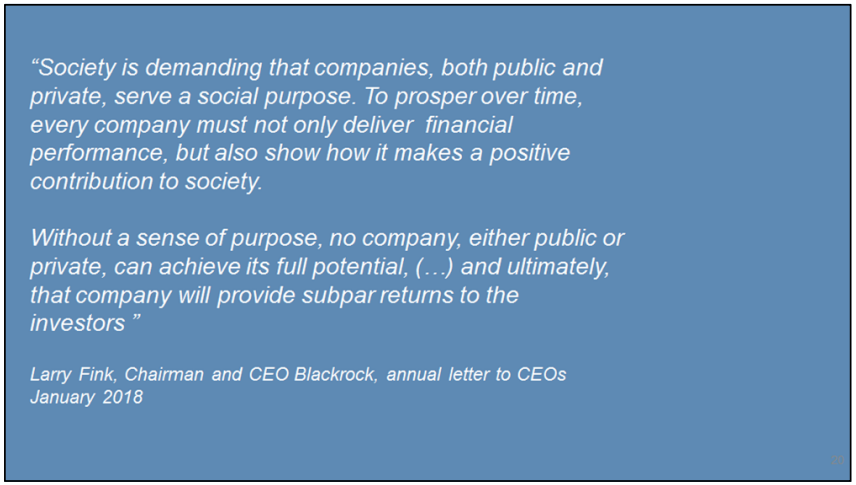
Improving productivity of the land already converted to food production is among the most efficient levers to achieve the Sustainable Development Goals.

Yara is uniquely positioned to deliver solutions to meet this challenge.

Sustainability represents a huge business opportunity

Last year's report from the Business Sustainability Development Commission laid out the potential within responsible business.

The report concluded that there is a market potential of 12 trillion dollars the next decades, by linking business development to the UN sustainable development goals.



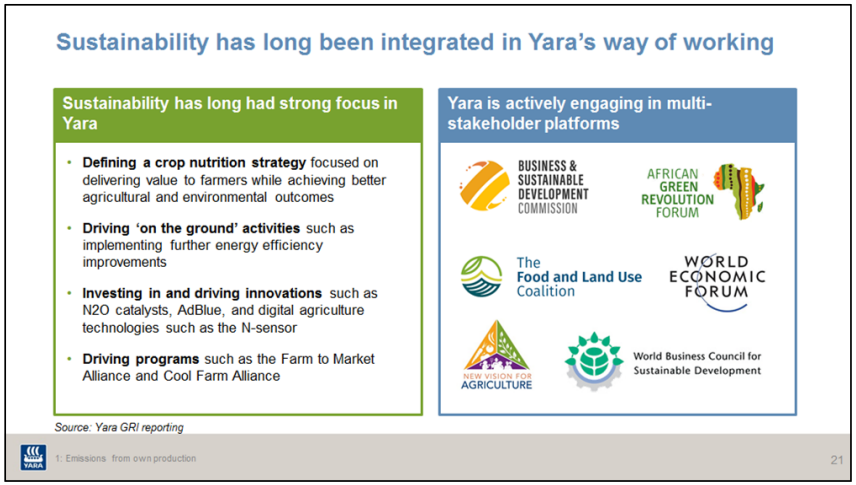
Yara believes that a positive contribution to the society is a pre-requisite to succeed over time

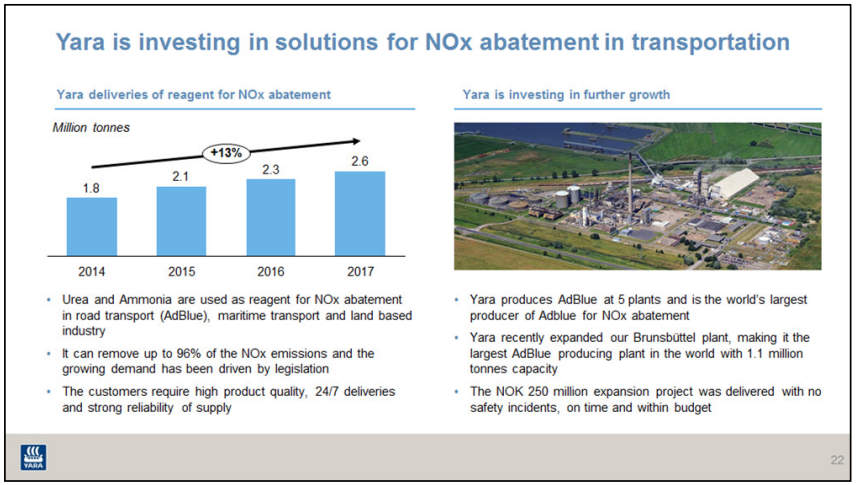
For Yara, there is no trade-off between what's good for the society, and what's profitable in the long run for Yara. Having solutions for some of the most pressing challenges the world is facing gives Yara's business resilience, and secures Yara's long-term relevance

In Yara we take a holistic approach to sustainability. We believesthat being in the forefront of the sustainability development gives us a competitive edge, as sustainable agriculture production will be a requirement from consumers, food producers, regulators – and society as a whole.

Improved sustainability comes from producing fertilizer using less energy, from shipping and distribution the product as efficient as possible, from helping farmers reduce nutrient losses from correct use and applications – everything closely linked to what we strive to achieve as a company. Therefore sustainability is an integrated part of our strategy – and is closely linked to what we are, and what we want to become.

This commitment to sustainability has also been widely recognized, and Yara was awarded top-10 of Fortune "50 companies that change the world"





Sustainability has long been integrated in Yara's way of working

Yara has already done a lot to reduce the emissions both from our production and on the field.

Our strategy to create value for the farmer improves both the environmental and agriculture performance of our products.

Precision technology like N-sensor, and digital tools and systems are directly helping the farmer reducing his input – and also emissions.

Yara is investing in solutions for NOx abatement in transportation

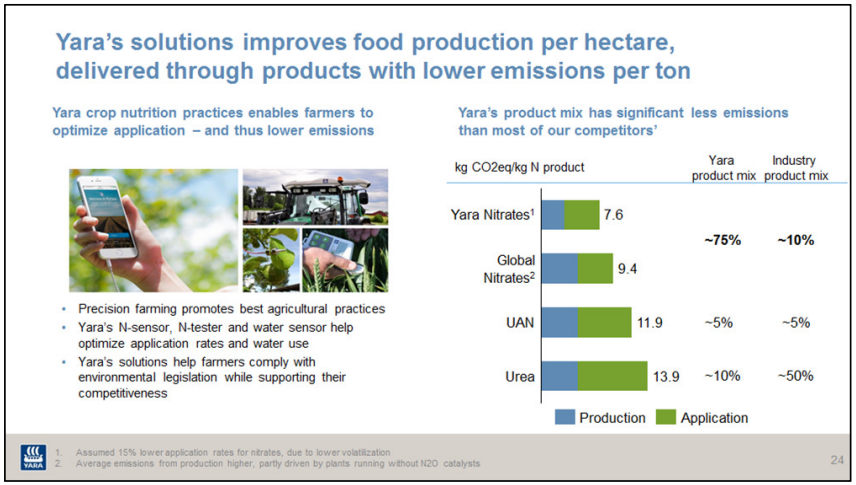
Urea and Ammonia are used as reagent for NOx abatement in road transport (AdBlue), maritime transport and land based industry, which can remove up to 96% of NOx emissions. Customers require high product quality, 24/7 deliveries and strong reliability of supply.

Yara produces AdBlue at 5 plants and is the world's largest producer of Adblue for NOx abatement. Yara recently expanded its Brunsbüttel plant, making it the largest AdBlue producing plant in the world with 1.1 million tonnes capacity. The NOK 250 million expansion project was delivered with no safety incidents, on time and within budget.

Our strategy and targets are guided by our mission and vision

Yara has shaped our mission and vision to underline that sustainability is an integrated in Yara's way of working.

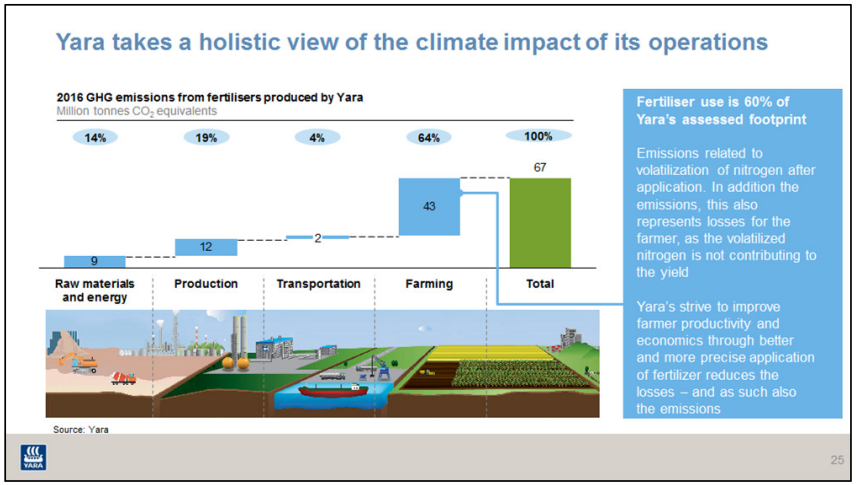
Our mission defines our company's purpose and role in the world. Yara provides solutions to some of the most pressing challenges the world needs to solve, namely feeding a growing population in a way that doesn't harm the planet unnecessary. Yara has the leading products, practices, and solutions to enable the world's farmers to deliver on this.

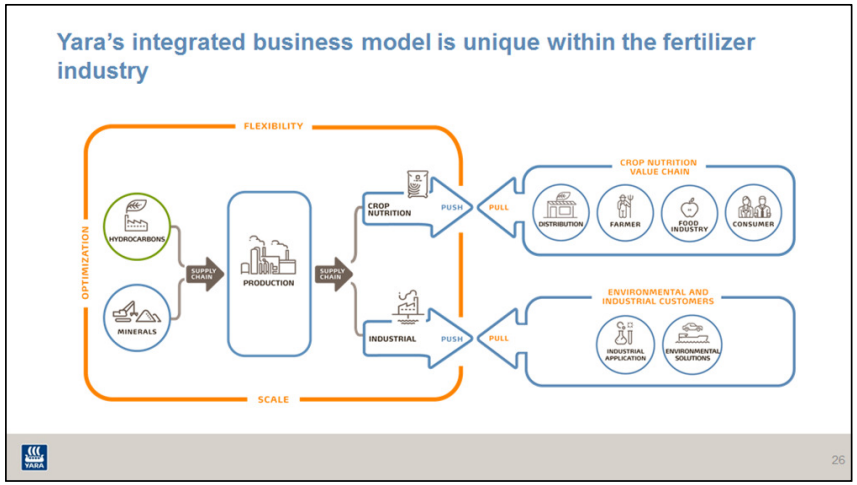


Yara's solutions improve food production per hectare, delivered through products with lower emissions per ton

For Yara, increased environmental focus represent a large opportunity. Yara's products are much more efficient than alternatives, and Yara's solutions aims at fertilizing correctly – which is more profitable, and as a direct consequence also less polluting. Today, only the efficiency improvement is really rewarded, but Yara works e.g. with food industry and carbon footprint labeling to also ensure the farmer is rewarded for environmental performance.

Sustainability is not a separate activity for Yara, but an integrated part of what we do, and that over time we will develop into a source of competitive edge.





Yara takes a holistic view of the climate impact of its operations

Despite relatively high emissions related to application of fertilizer, using fertilizer to intensify agriculture output is by far better for the environment than creating new arable land from e.g. forest.

The carbon stored in the biomass in soils and above the ground is mostly emitted as CO2 if land is converted to farming. These emissions by far outweigh the emissions from production and application of fertilizer. A Stanford study from 2010 showed that making agriculture more productive has saved 590Gt CO2 between 1961 and 2005

Reducing the emissions from our products is a high priority for Yara – and Yara is already ahead of competition.

Yara's integrated business model is unique within the fertilizer industry

Yara's globally integrated model separates it from other fertilizer companies. We work deeper in the markets than any of our competitors, both within fertilizer and industrial applications. This enables us to work with the farmers and industrial customers to really understand their needs, and adjust our offerings and solutions correspondingly.

Being integrated towards production gives security of supply, ability to adjust production to the most value-creating product mix, and the sales/production integration gives robustness and reduces risks both in developing new markets, and in building new capacity.

The integrated business model also provides flexibility through the commodity cycle. In demand driven markets, the margins moves towards the production units, while in supply driven markets, the margins move closer to the user. The integrated model allows Yara to optimize where in the value chain we realize margins, and it also enables Yara to grow counter-cyclically.

Strategy execution is focused on strengthening competitive edge

Competitive raw material costs is a strong advantage for certain plants (e.g. Belle Plain) but to less degree for our European assets, though we are better positioned than Chinese swing producers. Yara also has significant scale in procurement of raw material and third-party products.

Knowledge margin is a very important source of competitive edge for Yara. Through our farmer centric approach and our knowledge, we help farmers increase their profitability, which entitles us to realize a higher margin on our products than we otherwise would. The same applies within Industrial, where we through our knowledge are able to identify and develop very profitable niche applications for our products, e.g. urea for Nox emission cleaning, or new application areas for Calcium Nitrate

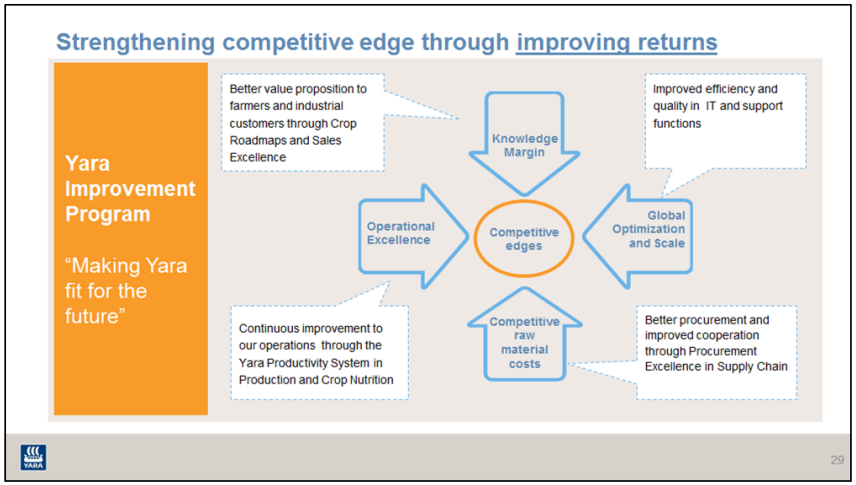
Global optimization and scale: Knowledge margin is not the only lever Yara has to improve margins. Our global downstream presence, and our large production footprint, allows Yara to optimize in which markets we place products through the year, taking in season, droughts, changes in demand, etc. This flexibility enable Yara to have back-up supply, ensuring we can serve our customers even if a plant would have production issues .

Operational excellence is about continuously improving what we do, in order to increase return on the capital we have employed. PRO800, the production transformation within Yara improvement program, is an example of how we work to strengthen this source of competitive edge.

For Yara, strategy is about constantly working to sustain and strengthen our sources of competitive edge.

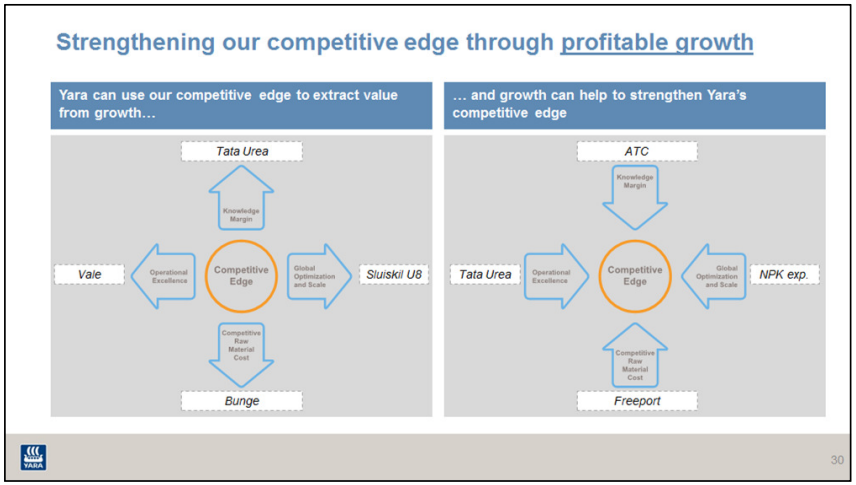
Two main responses to strengthen our competitive edge

Yara strategy execution follows two main levers: Improve our business in order to increase the return on capital, and deliver profitable growth – organic and through new-builds and M&A. The main sections of today's presentation will be focused on how Yara works along the strategic responses, in order to strengthen our sources of competitive edge



Strengthening competitive edge through improving returns

The Yara Improvement Program is all about improving returns, with initiatives that improve all Yara's four sources of competitive edge.



Strengthening our competitive edge through profitable growth

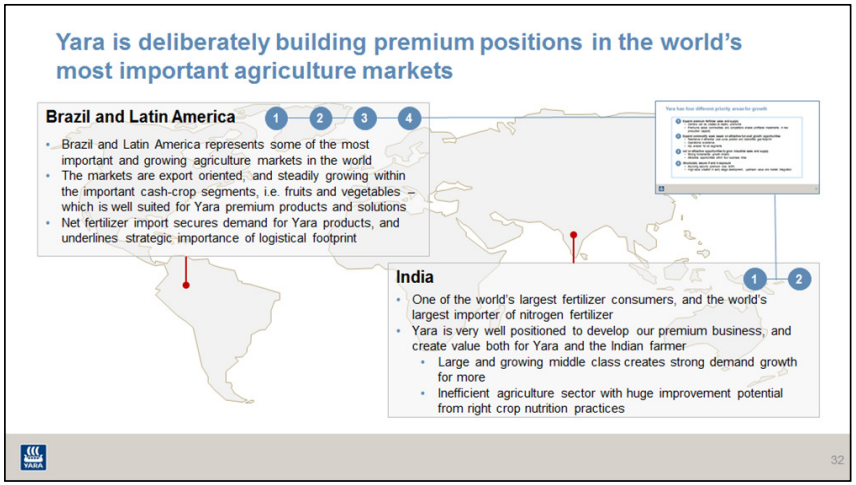
Growth can strengthen Yara's competitive edge in several ways.

A competitive edge can be applied on targets to extract additional value from their business. An example is Yara's acquisition of Tata Chemicals urea business. This is today a commodity business. By applying our farmer centric model Yara can unlock significant value through using the acquired scale to sell premium offerings in one of the words largest fertilizer markets.

Growth can strengthen Yara's competitive edge. When Yara acquired ATC, we are acquiring IP that is strengthening our knowledge margin. Similarly, the Freeport project strengthens our raw material cost position.

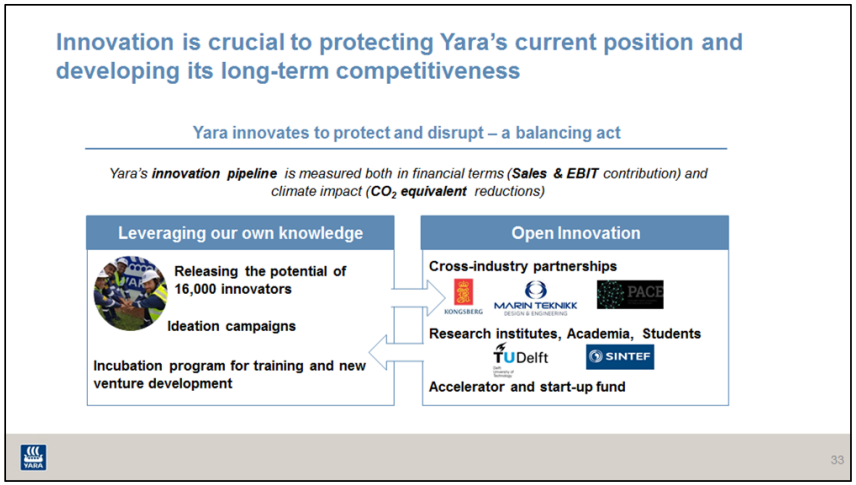
Yara has four different priority areas for growth

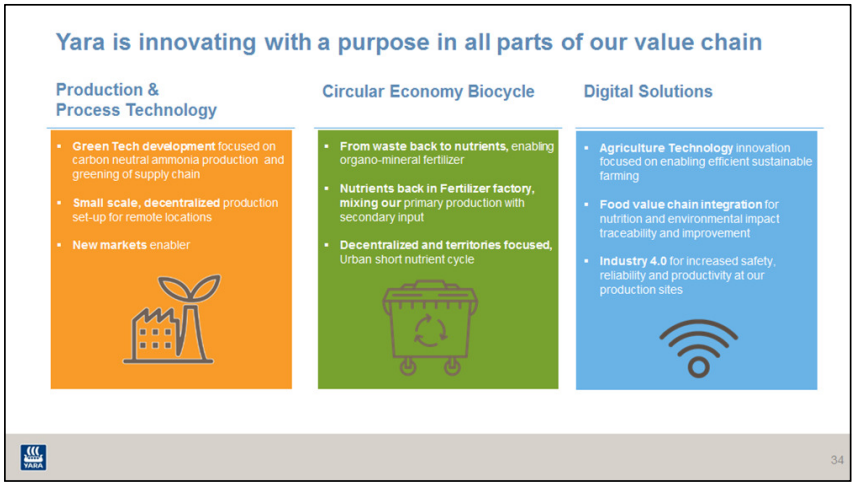
Yara has a relative wide scope for step growth. This implies that we are widely monitoring for potential acquisitions and new-build, and quickly asses the strategic fit, considering e.g. market outlook, Yara synergies, quality of assets, etc.



Yara is deliberately building premium positions in the world's most important agriculture markets

Yara has been successful in our deliberate strategy to build positions in the markets which are growing, and where Yara can realize value from our premium products and crop nutrition solutions. Recent examples are the growth on Brazil and Latin America, as well as the recent acquisition in India





Innovation is crucial in protecting current position and developing Yara's long-term competitiveness

Yara innovates with a purpose, and is an integrated way of what we do. In order to remain relevant for our farmers and customers, we must continuously evolve our offering to protect our current positions and gain market share from competition. In addition, Yara aspires to be the disruptor of the industry, and has during 2017 increased its long term innovation focus with dedicated resources looking beyond the obvious.

We aspire to disrupt our industry by releasing the innovation potential in the company by leveraging the contributions of all our 16,000 employees as well as accelerating our innovation efforts by utilizing know-how available outside of Yara's formal boundaries through investment in open innovation activities.

As we are to solve some of the largest global challenges of our time, we believe in creating ecosystems of change where the system's constituents are considered as partners rather than customer and supplier. We are therefore proactively looking for collaboration with new partners such as research institutes, academia and other corporations to find innovative and sustainable ways to deliver on our ambitious mission and vision.

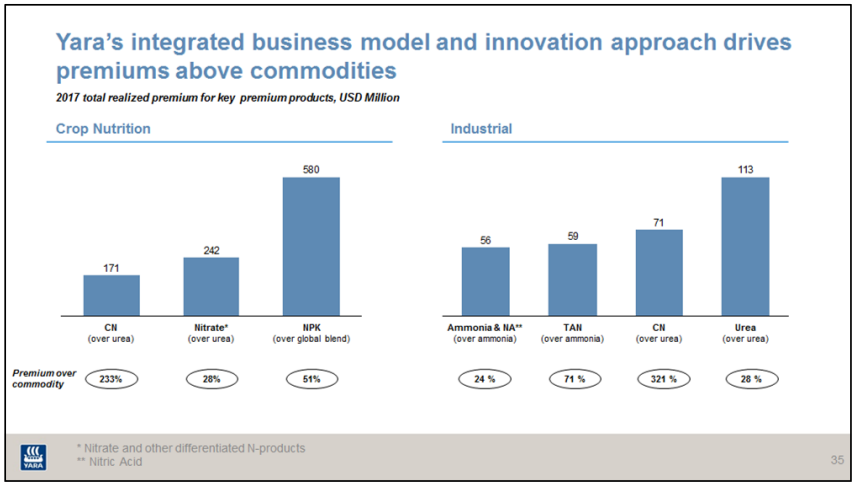
We invest into the world's future innovation talent by supporting students and early ventures through open innovation challenges and through our start-up accelerator and investment fund, YaraGerminate.

Yara has innovation initiatives at all steps of our value chain, and is measuring the innovation pipeline both in financial terms (Sales & EBIT contribution) and climate impact (CO2 equivalent reductions).

Yara is innovating with a purpose at all steps of our value chain

Yara is innovating throughout our value chain, with dedicated focus on:

- Production and process technology with focus on carbon neutral ammonia production and greening of supply chain, small scale and decentralized production set-up, and new markets that are enabled by our green ammonia offering
- Circular Economy Biocycle with focus on how to retrieve nutrients from waste and bring them to market as organo-mineral fertilizer, back to factory to combine secondary sources with primary production and finally on the urban short nutrient cycle
- Digital solutions for efficient and sustainable farming, food value chain integration focused on nutrient and environmental impact traceability and improvement, and Industry 4.0 activities at our production sites focused on improving safety, reliability and productivity



Yara's integrated business model and innovation approach drives premiums above commodity value

The premiums Yara achieves in both fertilizer and industrial product markets are a result of its product portfolio, its market positions, and also the innovation efforts we have put into both our products and our marketing efforts

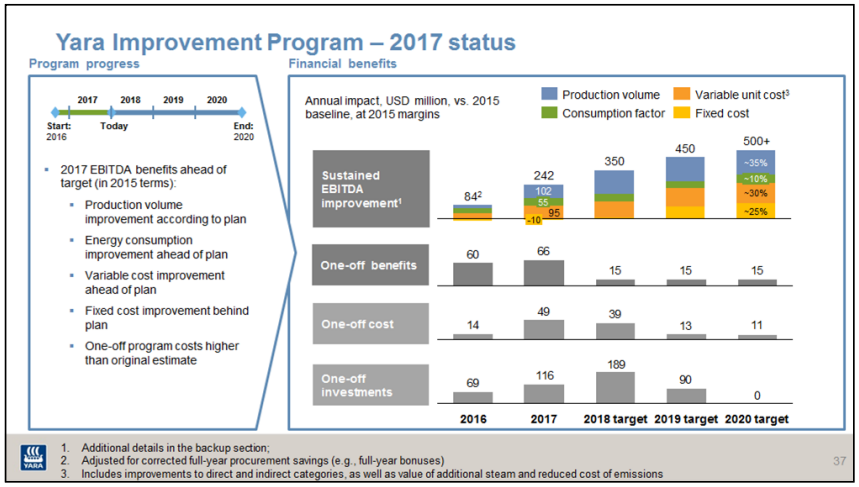
Yara Improvement Program

We launched the Yara Improvement one year ago. The difficult market situation that we saw back then, that we are living now, made it clear to us that we had to do **something**. **How** we chose to respond to the challenge was dictated by out values: We set an *ambitious* target of 500 million dollars by 2020, but more importantly, we made this an **improvement** program, and by that we really mean improvement of our people.

In order to reach our target, and to continue to improve beyond that, we are convinced that we need to invest in our people:

- Increase people's competence so they can have more influence on their workday
- Make it easier to collaborate and share ideas
- Foster a strong sense of curiosity to learn and lower the bar to ask questions

There have been, and will continue to be, difficult decisions that affect the organization. However, it is clear that Yara has a highly engaged workforce who, across the may different initiatives, are working extremely hard to improve day by day. The pictures on this slide represent a small sample of "snapshots" from activities across the company, spanning from the Yara Productivity System training, through a Procurement Excellence workshop and all the way out to the sales and marketing team.



Yara Improvement Program – 2017 status

The Yara Improvement Program has so far delivered **242 million US dollars** of annual sustained benefits, well ahead of our 2017 target of 150 million US dollars. In addition, we have captured a total of 126 million US dollars in one-off benefits in over the span of 2016 and 2017, already surpassing the original target we set for 2020 in terms of total effect.

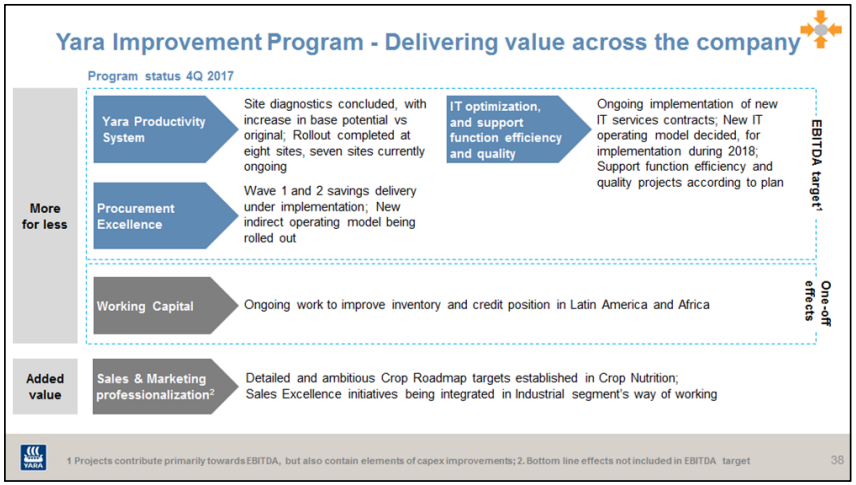
The 242 million US dollars are measured at 2015 margins. The equivalent number using 2017 margins is ***~180*** *million US dollars.*

We are ahead of schedule thanks to strong delivery from all projects in the program, in particular strong reliability improvements within finished fertilizer production towards the end of the year and our procurement excellence project really starting to gain traction.

Our 2020 target remains unchanged at 500 million US dollars. The strong improvement last year does not necessarily imply the same trajectory going forward for two reasons: First, we are investing in long term reliability in our system, which by nature is more about incremental improvement rather than large step changes. Second, while the current production level is strong, individual incidents, such as the fire in Porsgrunn, influences the total picture to such an extent that it is too early to establish new targets.

However, the pace of the program is higher than originally planned and we are therefore increasing the target for 2018 by 50 million US dollars.

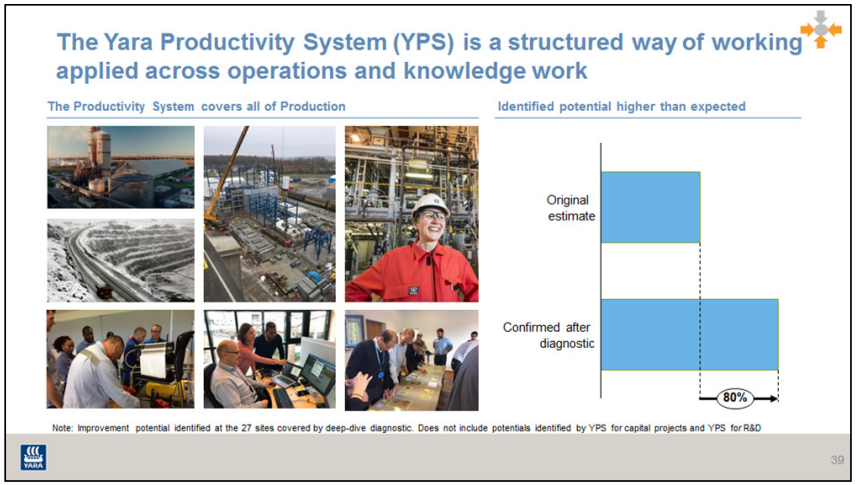
As a result of the increased pace we have seen an increase in the one-off cost of the program and increase our estimate of the total one-off cost from 80 million US dollars to 125 million US dollars. At the same time, we spent about 60 million US dollars less in capex investments related to the program in 2017 compared to the original forecast.



Delivering value across the company

The program consists of a number of activities that span the entire company and contributes to strengthen Yara's competitive edge by creating "More for less" in our operation, or "Adding value" to our customers.

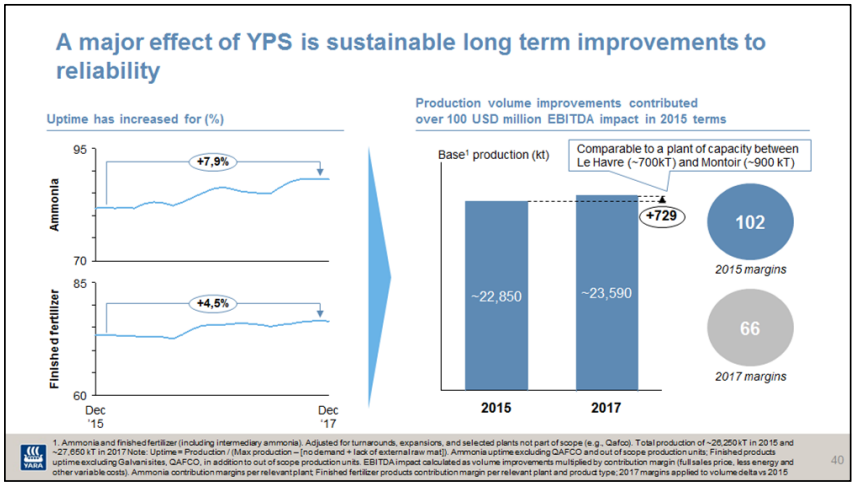
The Yara Productivity System and the Procurement Excellence projects contribute the most to the bottom line – or EBITDA target - that we have established. However, there are a number of activities that have significant financial benefits that are not reflected in this target: For example, we are improving our capital expenditure profile when it comes to maintenance and project delivery, and we are working on professionalizing our sales and marketing organization.



The Yara Productivity System (YPS) is a structured way of working applied across operations and knowledge work

Last year, we told you that the Production segment had initiated a strategy and operational excellence project. This project continues at full pace under the umbrella Yara Productivity System (YPS). YPS has improvement workstreams focusing on all parts of operations – our plants, mines, and small sites, how we plan and execute projects, and our R&D. The program is underpinned by a focus on competence and capability building as well as culture change across the full segment.

The program has identified a significant improvement potential. The thorough deep-dive diagnostics which have been concluded at 27 sites end of last year, identified an improvement potential 80% higher than original estimates for these sites. In addition there is significant improvement potential identified from applying YPS for capital projects and R&D.

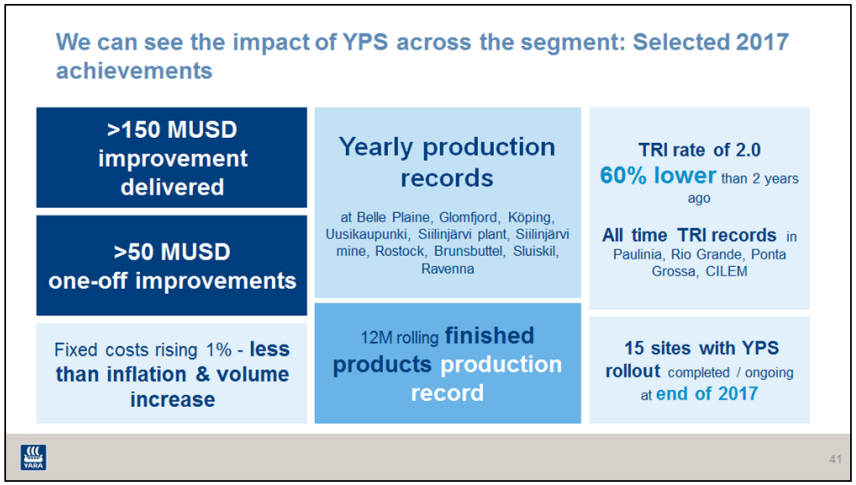


A major effect of YPS is sustainable long term improvements to reliability

YPS drives long term improvements to the reliability of our production. We measure the bottom line impact as the difference between the starting point – the 2015 baseline – and the 12 month rolling production at any given moment.

Looking at our base production – i.e., adjusted for turnarounds, expansions and selected plants not part of scope (such as Qafco) – we delivered an additional 729 kT of ammonia and finished fertilizer in 2017 compared to 2015 (this number includes intermediary ammonia produced). 729 kT additional production volume is comparable to the total production capacity of plants such as Le Havre and Montoir.

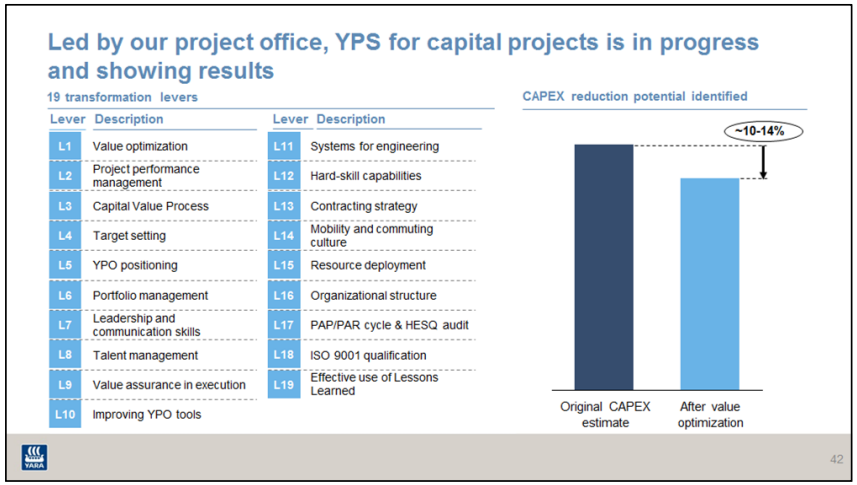
By multiplying these volume improvements with relevant 2015 contribution margins, they have contributed more than 100 USD million EBITDA impact in 2015 terms. Applying 2017 contribution margins to the same volume delta gives an EBITDA impact of 67 USD million



We can see the impact of YPS across the segment

2017 has been a year of great achievements. YPS has delivered sustainable improvements of more than 150 USD million and in addition more than 50 USD million in one-off benefits. Nine sites saw yearly production records – with many sites setting yearly production records for multiple products. One example is Siilinjärvi, setting annual production records for NPK (+3%), sulphuric acid (+ 0.6%), P-acid (+2%), and energy (+0.6%). The segment also delivered an overall 12 month rolling finished products production record. At the same time, Production fixed costs rose less than 1% - less than both inflation and the production volume increase

Operational excellence and safety performance go hand in hand. Yara has made good progress towards achieving a 100% safe working environment, with the 2017 TRI rate being 60% lower than two years ago for the plants and mines, and with several sites setting all time TRI records. Still, serious accidents happen and we rigorously analyze them as well as near misses and hazardous conditions to avoid them in the future.

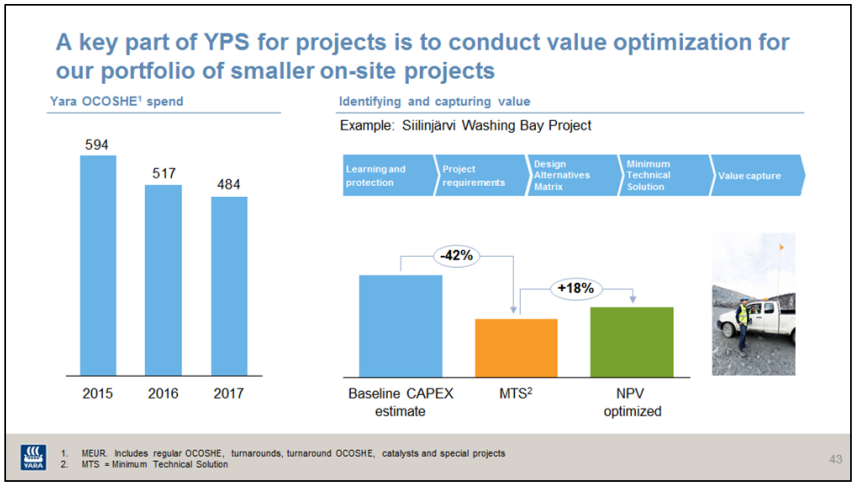


Led by our project office, YPS for capital projects is in progress and showing results

YPS is about how we operate our daily business. This includes our plants and mines, but also how we run our capital projects and how we utilize R&D.

The Yara Project Office has for the last year been going through its own transformation. This takes the form of working on 19 transformation levers, covering a wide range of both hard and soft topics.

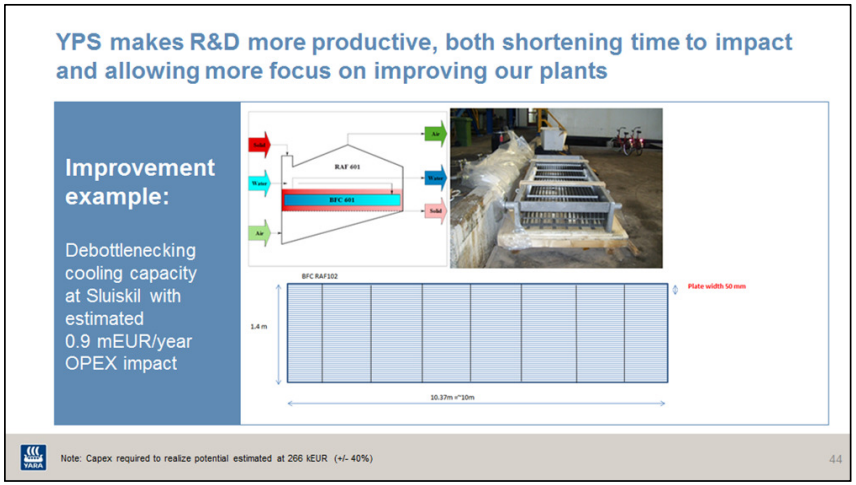
A particular focus is on embedding value optimization. This means rigorous value engineering review of capital projects, aiming at finding the highest net present value for each project. So far eleven projects have been through this process, with a total aggregated capex reduction potential identified in the range of 10-14% of aggregated original estimates.



A key part of YPS for projects is to conduct value optimization for our portfolio of smaller on-site projects

YPS for capital projects brings the concept of value engineering to our sites. The target is to optimize each sites' local current and future project portfolio – a significant capital spend category for Yara.

The Siilinjärvi Washing Bay Project was taken through a value optimization process. Design requirements were challenged by defining the Minimum Technical Solution (MTS) for the target functionality. The MTS was shown to have a CAPEX requirement 42% lower than the original estimate. However, focus of YPS for projects is not to reduce capital spend, but to optimize the net present value. For this specific project, the team found that some heating, ventilation and air conditioning (HVAC) features that did require additional CAPEX also increased NPV, making the optimal solution 18% more expensive than the minimum that satisfied the requirements.

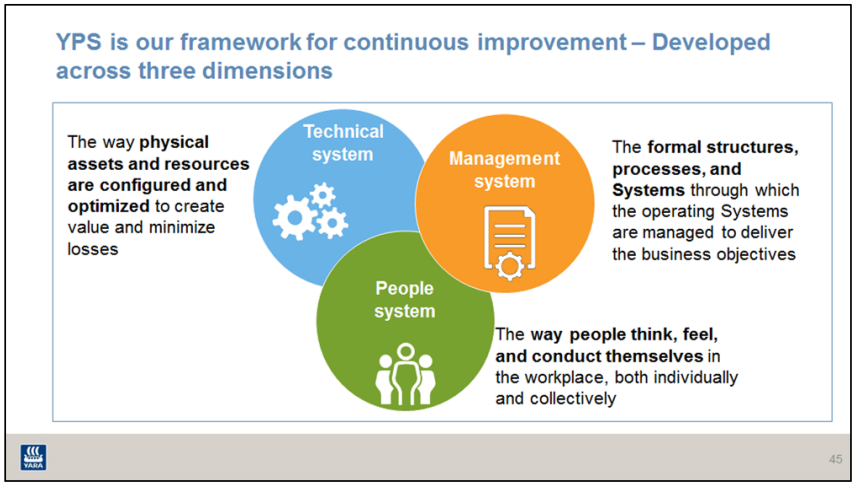


YPS makes R&D more productive, both shortening time to impact and allowing more focus on improving our plants

YPS for R&D aims at making our R&D projects more effective and efficient, able to achieve better results in (shorter time than earlier. (
We leverage this towards our "Plant of the future" strategy which ultimately aims at a zero emission fertilizer (plant with low operating and construction costs. (

On the way there we focus on bringing the best available technologies from our own and other industries to (our plants. We assess improvement opportunities to reduce energy and water use, and emissions. (

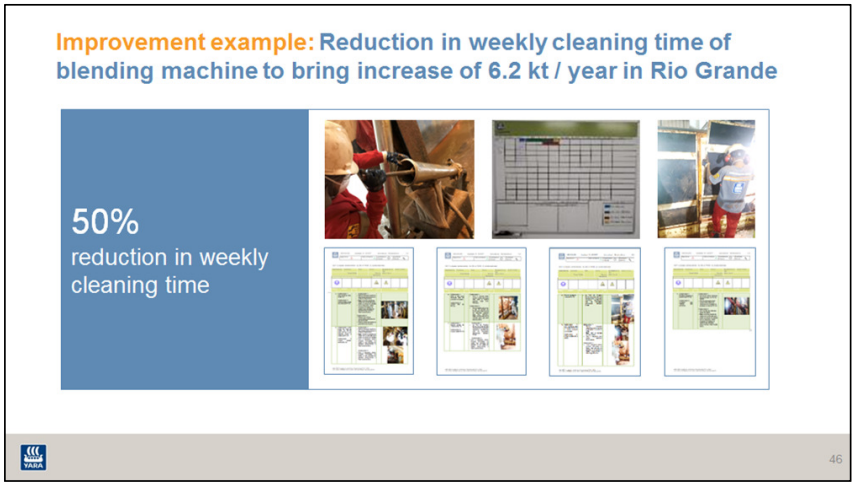
Included here is one specific example of such an improvement. In the urea plant the granules, for quality (reasons, should not exceed 62°C when leaving the cooling belt. The observed exit temperature of the (granules has been as high as 68°C. To maintain 62°C, production has been slowed down, making this the (bottleneck of the plant. By bringing together a cross-functional team with colleagues from our research (center, the project office and the plant in question, practical and profitable solutions were brought to the (table. In this case, a bulk flow cooler was designed. Testing conducted in the Semi industrial Pilot Plant (SiPP) (showed it was capable of reducing the temperature by 6 to 8°C. At an estimated CAPEX of EUR 266 thousand, (this allows extra production worth EUR 900 thousand per year in Sluiskil. (



YPS is our framework for continuous improvement – Developed across three dimensions

It is a change in the way we work and a change in mindset. It is a way of working that is empowering employees and teams to solve problems where they happen and implement improvement ideas. Our goal is to have the most engaged and capable workforce in the world.

Changing the mindset and the way of working takes time, and we have just started the journey. By now we have completed the first phase of the transformation at 11 sites , and by end of this year we have covered all 27 plants and mines in 14 countries. Engaging the employees is critical for success, and to do drive the change we are developing more than 350 change leaders. By the end of the year we will have 1000 managers directly involved in the change and introduced more than 7000 employees to the new way of working.



Improvement example:
Reduction in weekly cleaning time of blending machine to bring increase of 6.2 kt / year in Rio Grande

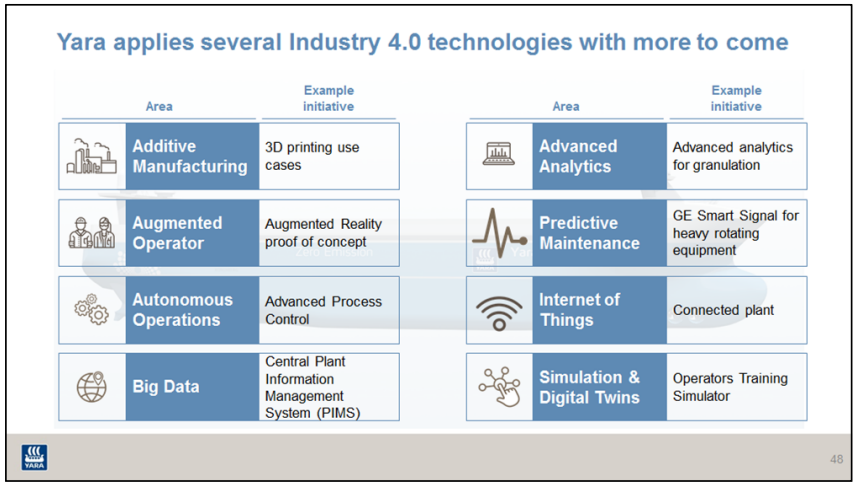
The diagnostics we have completed have identified a potential that exceeded our initial estimates, and the biggest potentials are related to volume increases from existing assets. Improved reliability is key to unlock the potential. YPS is addressing reliability through several measures, including standardization and improving how we operate (e.g. Standard Operating Procedures and SMED), permanently solving issues that occur (e.g. Root Cause Problem Solving) and preventing issues from occurring (e.g. FMEA).

This example from our Rio Grande plant shows how the weekly cleaning time of the blending unit was reduced and brought an increase in production volume of 6,2 kt per year. The team of operators where able to reduce the cleaning time by 50% through standardizing the way to execute the task. They developed 6 Standard Operating Procedures and set up a sequence for the cleaning that made sure both production and maintenance where available at the right time.

Improvement example:
Root Cause Problem Solving to improve reliability for plant start-up in Belle Plaine

In Belle Plaine a dedicated team has been established to improve plant reliability starting with the worst performing, critical and most important equipment. The cross functional team including maintenance, reliability and production is addressing both recurring issues through root cause problem solving and preventing issues from occurring through structured FMEA.

By end of year a total of 33 workshops have been conducted for the recurring issues. A total of 102 actions have been initiated from the RCPS session of which 67 have been completed. In addition to the dedicated team, also the operators are using RCPS in day to day problem solving to address less complex issues. A recent example is the use of 5xWhy where the operators identified the root cause of increased ammonia content in the cooling tower, tracing it back to a leaking hose that was set up as a temporary arrangement to recover condensate from the CO2 knockout drum to the CO2 removal system.

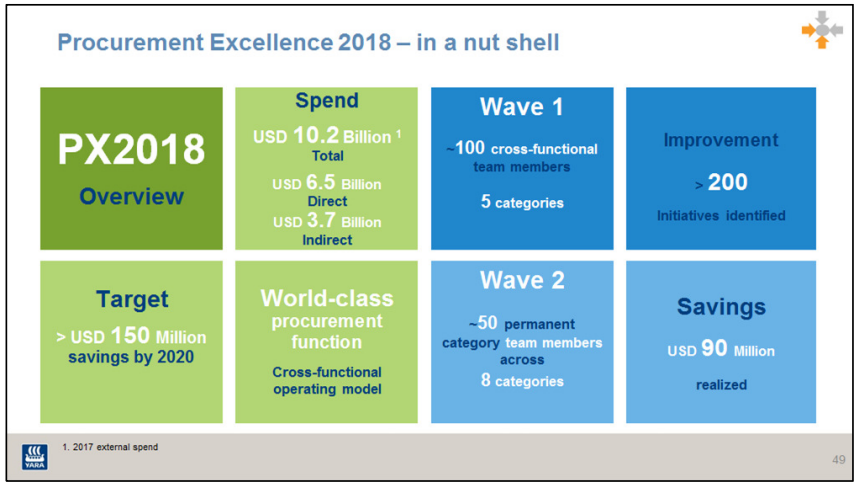


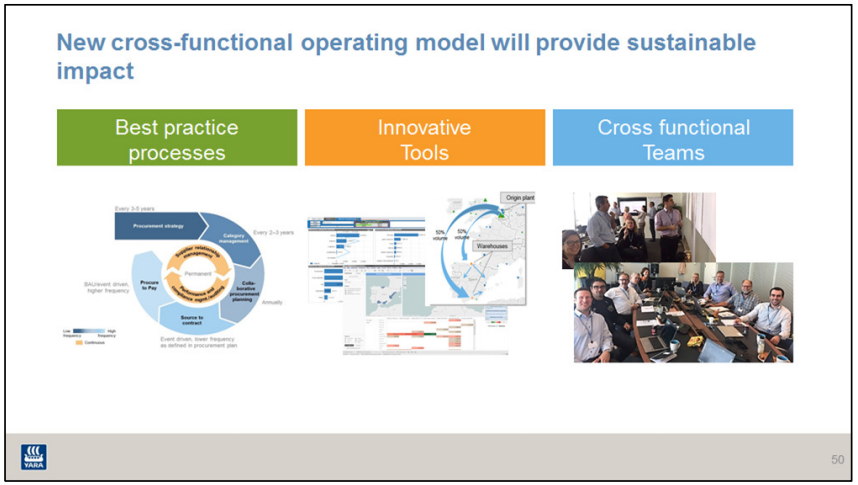
Yara applies several Industry 4.0 technologies with more to come

Yara Birkeland – the first ever zero emissions, autonomous ship – is one well known example of Yara leveraging Industry 4.0 technologies also in our operations.

This is a very visible project, but Yara is working on a number of other initiatives, including additive manufacturing, augmented reality, predictive maintenance and simulation – to name a few.

After a period of initiating multiple pilots to learn what approaches create value, 2018, following the complete rollout of YPS, will see a more forceful introduction of these technologies in our plants.





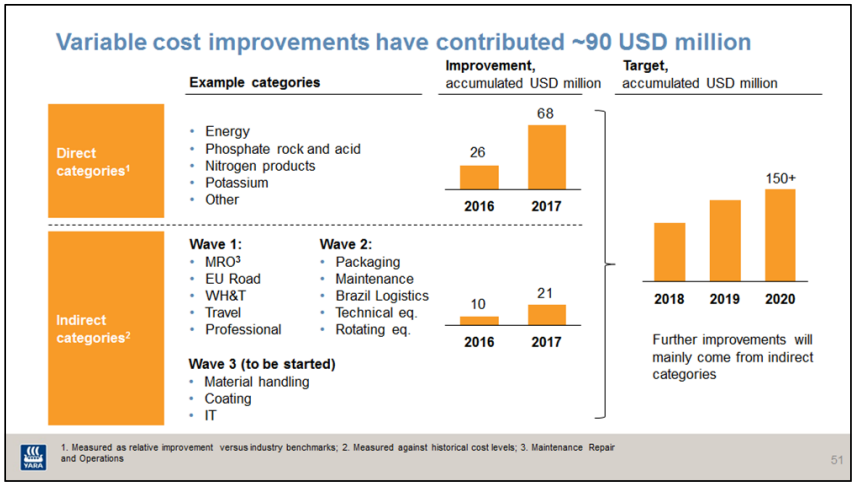
New cross-functional operating model will provide sustainable impact

Procurement excellence is much more than a one off initiative to improve. It's about introducing new ways of working to enable continuous improvements going forward. In order to sustain the change we are working along three dimensions: processes, tools and people.

Within processes we have introduced a new procurement processes built upon world class best practices. Examples of these are how to make a category strategy and how to execute an efficient sourcing process. We have also developed a common methodology to track and report improvements and savings. These are being implemented globally.

Several new tools have been developed to enable the process and/or to support specific categories. We have introduced a new contract management system to ensure efficient and compliant sourcing processes. A spend tool has been rolled out to give the category managers full transparency of their spend. This will also be used for KPI tracking. And we have different category specific tools e.g. logistical optimization tool.

On the people dimension the focus is on the cross functional category teams. These are the teams which systematically work with the idea generation, category strategies and sourcing initiatives. In each category team there are representatives from the key stakeholders in Yara. These teams are permanent and will continue on an on-going basis to drive further improvements.



Variable cost improvements have contributed ~90 USD million

So far, our procurement initiative has improved the variable unit costs with roughly 90 million US dollars compared to 2015. Of this, 67 million is from direct categories and 22 million is from indirect categories.

Direct categories have contributed to much of the improvement so far. However, it is from the indirect categories we expect majority of the contribution going forward.

We work systematically through waves of categories, in cross-functional teams and in collaboration with our suppliers, to do better procurement.

Procurement Excellence 2018 – Tangible results around the globe - Packaging

In Brazil we purchase bags annually at a total cost of approximate 60 million USD.

We have worked on several levers to address the spend in Brazil:

1) New technology: We have scouted new technologies and cooperated with suppliers to adjust our bags. We used bags made in PP (polypropylene) fabric with a liner inside. The bag was closed by manual stitching. We changed this to a new technology where the inner liner is «glued» to the PP fabric (instead of stitched manually). This technology enables the suppliers to automate the production process which reduces cost and part of the benefit is transferred to Yara

2) Consolidating demand: We have leveraged Yara's buying power in Brazil by bundling volume and consolidating demand to fewer suppliers to achieve higher discounts on bags. In the process we also eliminated non-vertical suppliers creating more reliability in product deliveries

3) Introduce competition: For one-loop big bags we had mainly one large supplier. We introduced new suppliers into the bidding process to create competition

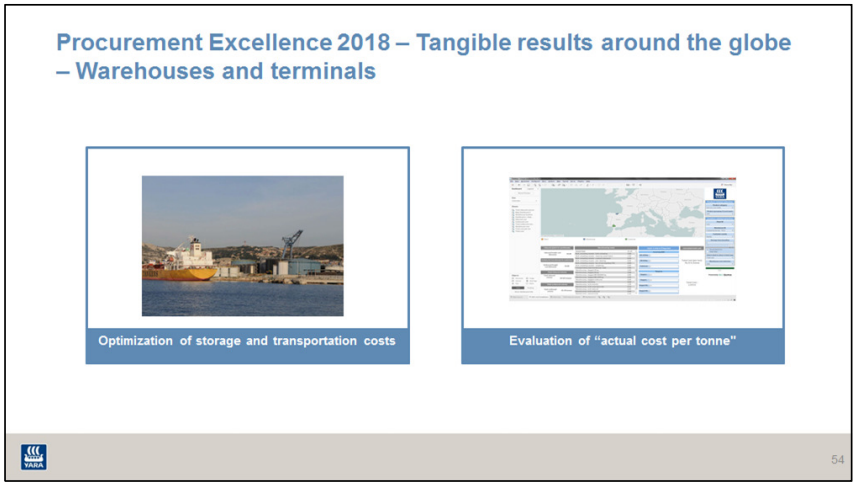
So far we have realized more than 10 mill USD in savings on bags in Brazil. However, this is only the start, we have many additional initiatives on packaging on-going which will yield further savings, in Brazil and the rest of the world.

Procurement Excellence 2018 – Tangible results around the globe - MRO

In Yara Safety is the highest priority. This is also embedded in the Procurement organization where we strive to find better safety products for our employees besides managing the spend and searching for savings.

On an annual basis Yara spend around 10 MUSD on PPE and Safety equipment. One major equipment within this category is the Self Retracting Lifeline (SRL's). The SRL is designed to be mounted to an overhead anchorage point. It is rigged to prevent the worker from reaching a potential fall hazard.

We have previously used a SRL which has a duration time of approximately 2 months. Through category work, analyzing the spend and searching for improvement areas, we identified savings potential by procuring high quality SRL equipment with a longer duration/lifetime. This new equipment is more expensive (20% higher on unit costs), however the total cost of ownership (TCO) of the product is much lower. On TCO perspective we estimate a savings potential of up to 50%.

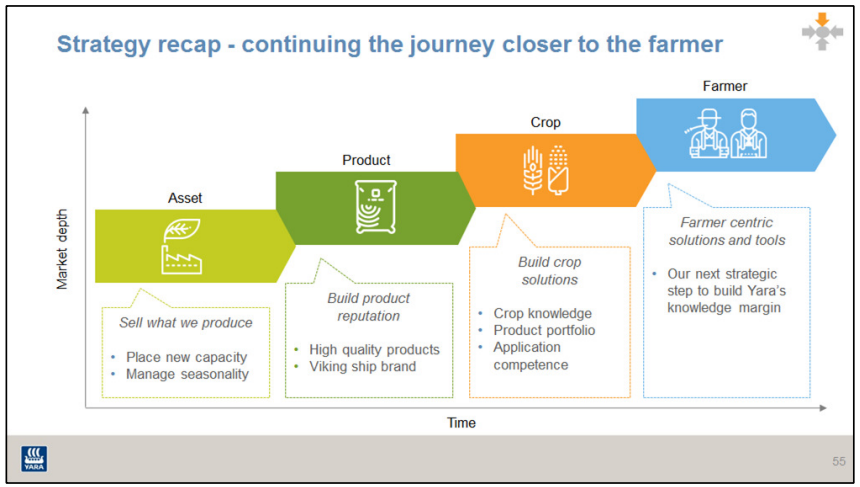


Procurement Excellence 2018 – Tangible results around the globe – Warehouses and terminals

We have approximately 180 third party owned warehouses and terminals in Europe with an annual spend of 120 MEUR. In managing the spend within this category, procurement goes beyond price negotiations. We are adapting new developed digital tools (end-to-end optimization tool) and methodologies (e.g. should cost model) to assess the total logistic costs related to each warehouse to optimize the supply chain. Examples of what we do:

1) Optimizing storage and transportation costs
Some of our Industrial products sold in central Europe are sourced from our biggest plant in Sluiskil, Netherlands. Previously , these products were diluted in the plant before shipment and transportation to our warehouse in the market. Through the category strategy work and use of new optimization tools we identified savings potential in transportation by diluting the products at a later stage of the distribution chain. The benefit from an optimized transportation more than offset a slight increase in warehouse cost. Evaluating the total value chain of these products we reduced the spend by ~30%.
NB! the example above is exceptionally . Even though we believe we will find many improvement areas by assessing the full value chain, we do not expect to reduce spend with this magnitude in all areas.

2) Evaluating "actual cost pr tonne" on warehouse rentals
Some of the our rental agreements are based on take-or-pay commitment for an estimated annual throughput. Deviation from the committed volume leads to a higher cost per tonne product. One of the initiatives in the project is to run evaluations on all these terminals to identify the real cost per tonne product, and take actions to improve these contract. In some cases it means negotiating on more accurate estimates on volumes, in collaboration with Production and the commercial segments. In other cases, it makes sense to close down the terminals. We have also developed a should cost model for warehouse and terminal cost to be used when negotiating.



Strategy recap – continuing the journey closer to the farmer

At the last Capital markets day we presented our farmer centric strategy.

Our aspiration is to be the leading provider of sustainable crop nutrition solutions, supporting farmer profitability through knowledge, quality and productivity.

To achieve this we need to move beyond products and crops, and address farmer needs in a more holistic but also more granular way. Different farmers have different challenges and needs. Our growth success requires in-depth understanding of how to add sustainable value for farmers.

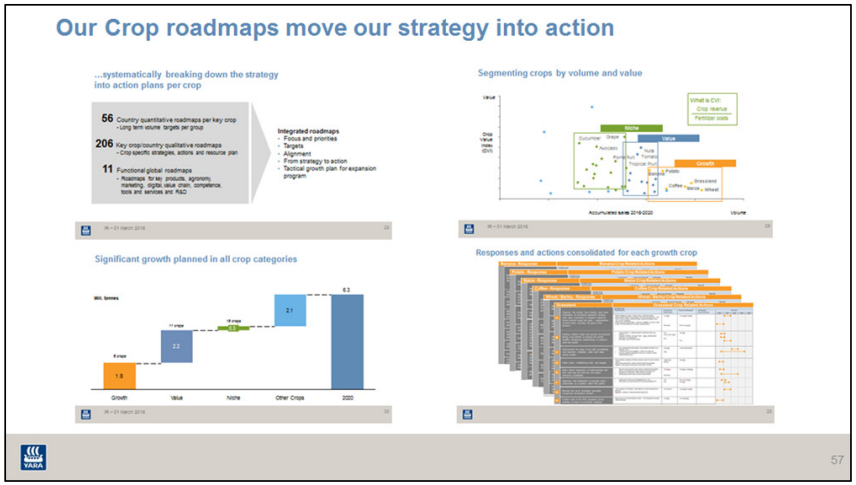
Deciding where to focus and how to win is key to profitable growth

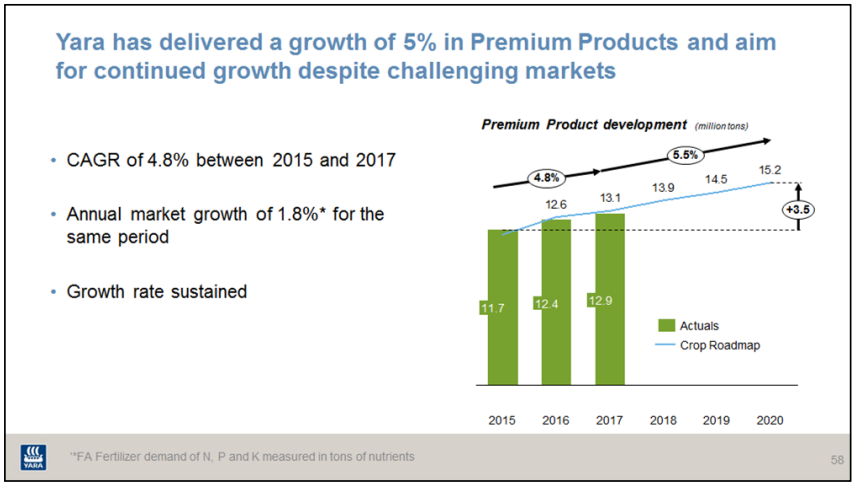
Farmer needs are not static. The agriculture industry is impacted by global and local trends that shape the needs and requirements of both farmers and other players in the value chain, such as distributors and supermarkets. To drive long-term growth we need to see these trends, and build capabilities to respond to them. By being deep in the market we understand how this translates into local farmer needs.

Through market segmentation we channel our resources to those crop and farmer segments where we can create the highest benefit with Yara's crop solutions. This helps us focus and prioritize our investment in people, competence, marketing, digital tools, products and assets.

By working with players in all of the value chain, we can create and deliver farmer centric crop solutions that create the most value, not only for the farmers but also for distributors, other stakeholders and ultimately Yara.

Deciding where to focus and how to win is the key to profitable growth.





Our Crop roadmaps move our strategy into action

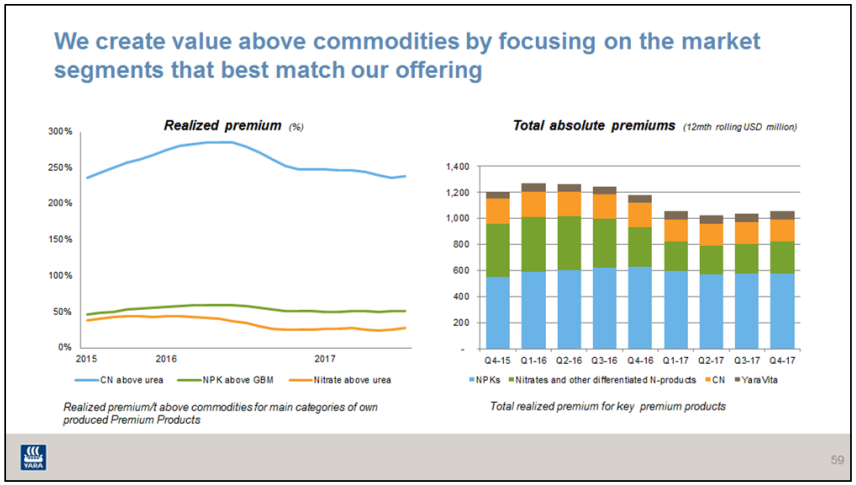
The crop roadmap is our main vehicle to engage the whole Crop Nutrition organization and move our farmer centric growth strategy into action. As explained at the last Capital Markets Day, the crop roadmap operationalizes the strategy into more than 200 crop / country roadmaps, based on our segmentation. Crop-specific growth targets and actions are followed up regularly to keep our growth momentum. We believe that this systematic approach is key to deliver both growth in both volumes and premiums.

Yara has delivered a growth of 5% in Premium Products and aim for continued growth despite challenging markets

Yara has delivered a annual growth of close to 5% in Premium Products over the last years. For the same period the overall annual market growth was around 1.8%, which means that Yara's growth has been significantly stronger than the rest of the market.

The largest absolute growth is in Brazil with a CAGR of 29% (compared with a roadmap CAGR of 10%) followed closely by the rest of Latin America with 13% CAGR (roadmap CAGR 16%). Our markets in Asia and Europe are moderately behind roadmap.

This growth plan is backed by already announced capacity expansion projects and third party sourcing contracts.



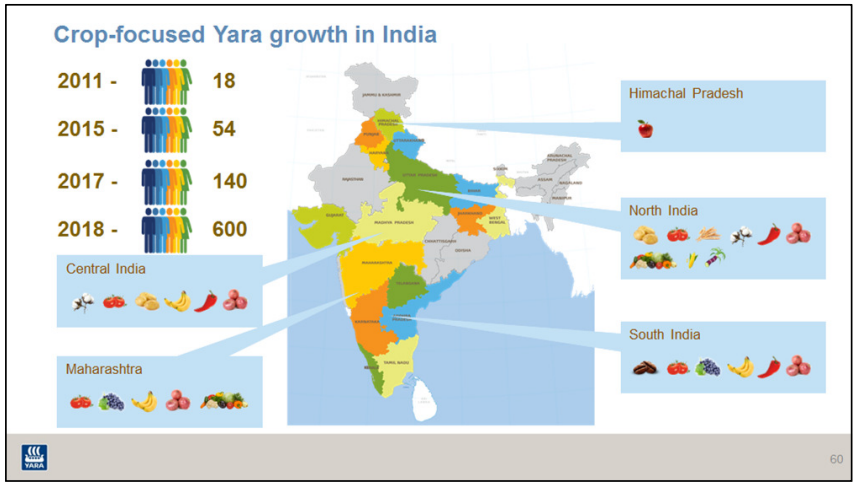
We create value above commodities by focusing on the market segments that best match our offering

The crop roadmaps deliver volume growth, but even more importantly value growth.

The left chart shows average premiums per ton for our key premium products, compared with commodity alternatives. These premiums would not have been achieved without being deep in the market and working systematically with segmentation and knowledge transfer. The premiums are also relatively stable overall; by being diversified into different geographies and higher-value crops we reduce our exposure to crop price volatility.

Premiums are at a healthy level. The lower levels in 2017 are mainly driven by lower crop prices which led to reduced nitrate premiums. The nature of the European business where we build an order-book, in combination with volatile urea prices, resulted in temporarily lower price premiums.

Despite a supply-driven market and low crop prices, we have been able to generate premiums equivalent to more than $1bn annually in the last 3 years, giving us confidence to invest in future profitable growth. This is why we both expand and reposition our assets towards premium products. As an example, our premium NPK from Rio Grande to the soya segment has delivered 379kt, or more than 400% growth.

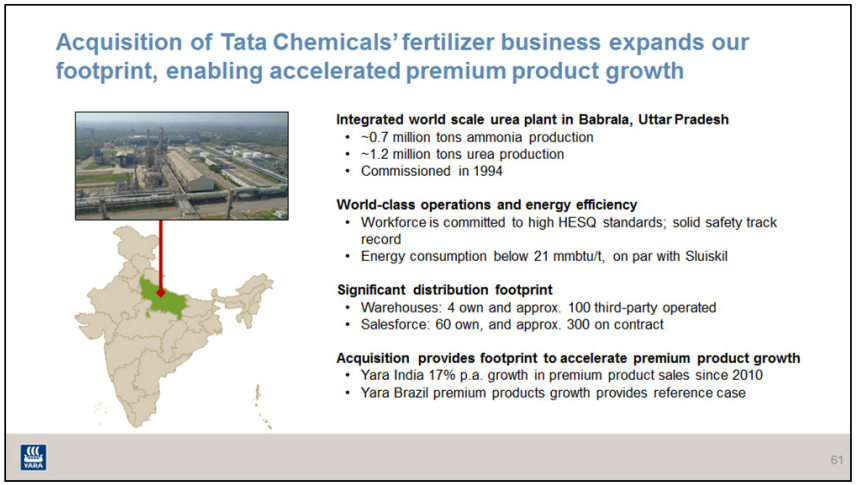


More than 20 years experience in India, enabling a crop focused growth agenda

Yara started operations in India more than 20 years ago, initially selling some of our key products through other fertilizer manufacturers.

In 2010 we decided to test our global business model of going deep in the market also in India, and established operations in Maharashtra, a state rich in cash crops. The model proved successful and we expanded further South and also in the very North, adding crops like coffee, apples and chili to the portfolio.
,
In 2016 the opportunity came to acquire Tata Chemicals' urea and distribution business, and we are now 600 employees in India of which approx. 200 are commercial staff on the ground creating demand for premium products.

This is an example of market expansion which makes us believe that we can deliver on the higher growth rate of annually 5.5% going forward.



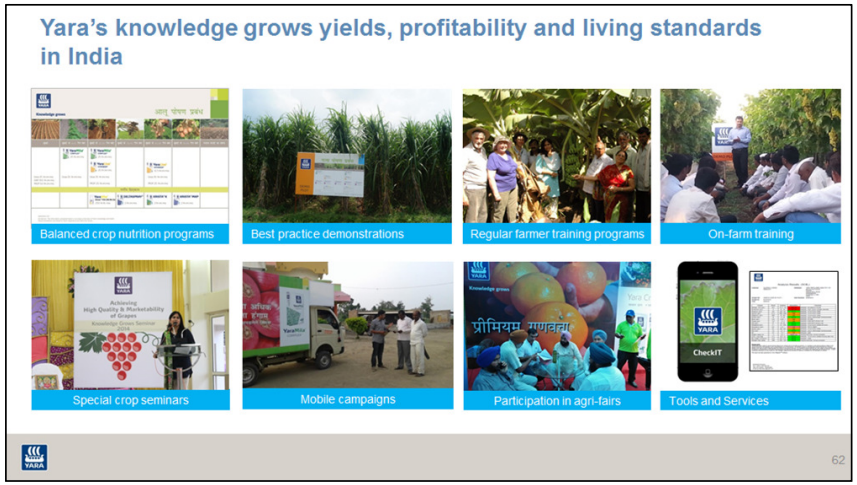
Acquisition of Tata Chemicals' fertilizer business expands our footprint, enabling accelerated premium product growth

The recent completion of the acquisition of Tata Chemicals' urea and distribution business gives Yara access to a very well operated plant and to a market which opens up for further growth in premium products alongside the urea produced at Babrala.

The plant has delivered top performance and had record production in 2017. Its workforce is dedicated to high HESQ standards, and the acquisition will provide Yara with scale, which so far has been missing from its operations in India.

Combining scale, knowledge and a crop-specific, farmer centric approach gives Yara a unique opportunity to extend the consistent growth we have seen in India, but at even higher speed.

India is a market which will take time to develop, but which has significant potential can become a new growth platform similar to what we have demonstrated in Brazil: profitable growth in premium products on the back of a large-scale commodity position.

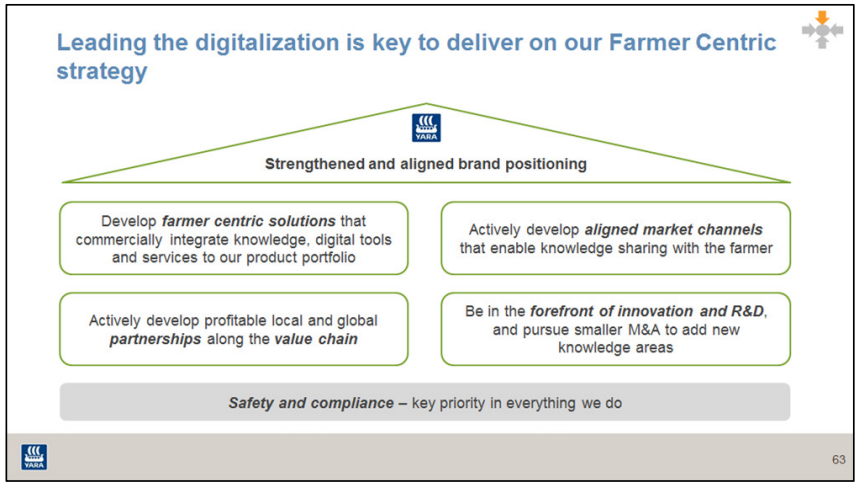


Yara's knowledge grows yields, profitability and living standards in India

This slide illustrates how we typically approach a market:
- We segment the crops to understand where we create the most value
- We engage with the farmers to develop the best crop nutrition plans
- We share our knowledge, tools and services to create the most value for farmers, the dealers and Yara

In India it is particularly important to offer a strong crop program based on balanced nutrition, to close the productivity and quality gap. Yara can do this better than others, with its strong product portfolio covering all nutrients, and its unique crop knowledge.

Also, digital tools that enable reach and relevance to farmers are becoming increasingly important. This leads into the next topic of this presentation - digital farming.



Taking a leading position in digitalization is key to delivering our farmer centric strategy

The core of our Crop Nutrition strategy is to go even deeper in the market with crop specific, farmer centric solutions.

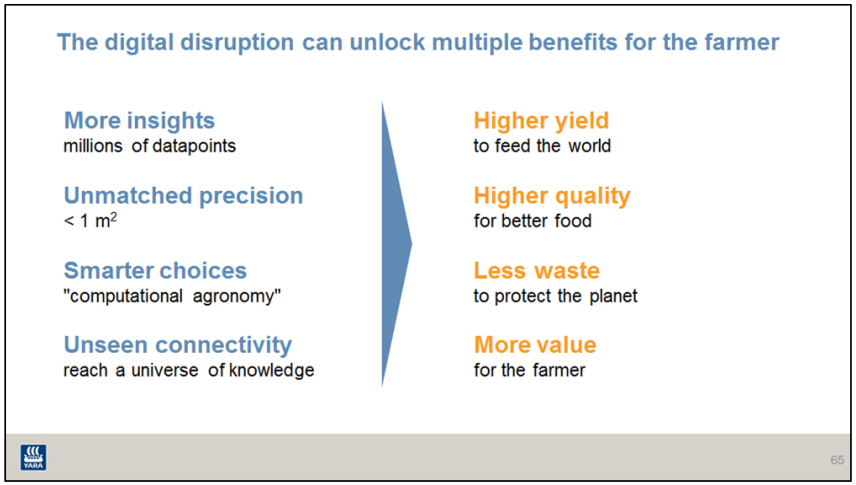
To achieve this we pursue four strategic responses:
1. Developing farmer centric solutions that integrate knowledge, tools and services in our product portfolio
2. Developing aligned market channels that enable knowledge sharing with the farmer
3. Developing local and global partnerships along the value chain
4. Being in the forefront of innovation and R&D

In the next section we present progress related to our digital tools and services.

The digital strategy is not separate, but is a key enabler to reach our overall goal, with new means. It adds new offerings for farmers, and allows us to reach more farmers in a more deep interaction. Furthermore, it provides another route to innovating within our core products and services.

Digitization, big data, and precision sensors are disrupting agriculture

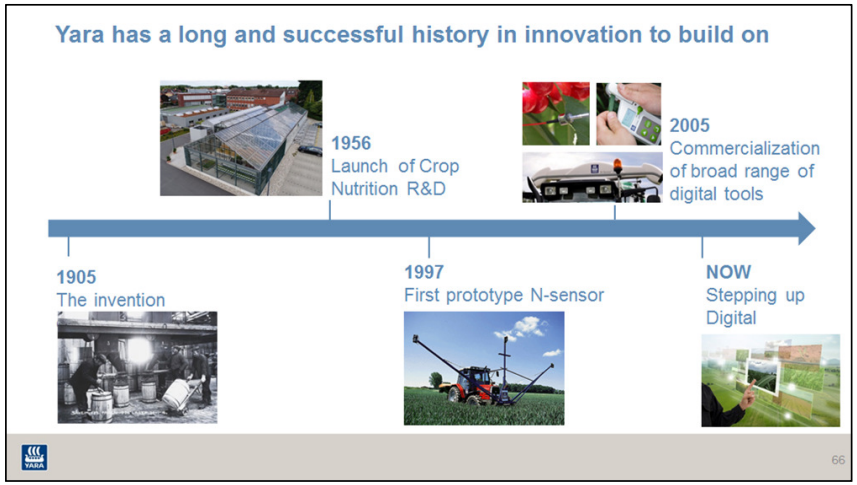
The future of farming is being disrupted substantially, as different drivers come together
- Real-time precision sensors enable unprecedented information on the status of the field, the crop, the soil, and the farming practices
- Data science break-throughs are allowing the processing of large amounts of information on the farm, historical and current, which can be translated into highly accurate recommendations
- Automation enables the granular and precise application of inputs and execution of recommendations
- Digital communication enables a frequent exchange and interaction, with and between large numbers of people around the farm



Digital disruption can unlock multiple benefits for the farmer

As a consequence, the farmer has many more opportunities to optimize:
- More insights and information to inform decision making
- Granular optimization down to sub-square meter level
- Computer-driven decision support, basing complex decisions on facts and simulation
- Ability to access information

This gives us the opportunity to realize a step-change in food production
- Higher yield, e.g. as inputs are used to their full potential
- Higher quality, as we understand more deeply the complex drivers of quality e.g. from optimized crop nutrition application
- Less waste, as precisely the right amount of fertilizer is applied, tailored to weather, soil, etc.
- Higher value, as a result of optimized operations, opening a value pool, of which we can capture a fair share



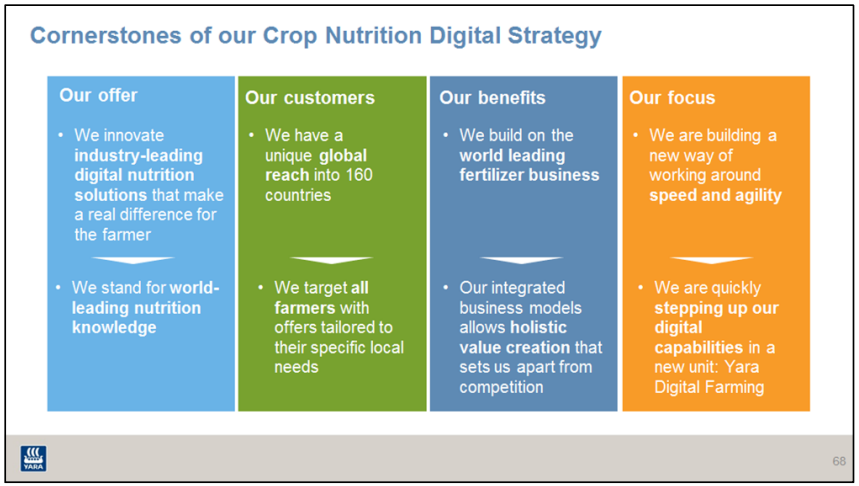
Yara has a long and successful innovation history to build on

Yara has been an innovation-driven company for more than 100 years, and an early mover in the field of precision agriculture, with the launch of game-changing technology such as Yara N-sensor more than 10 years ago. The N-sensor allows a tailored application of fertilizer based on real-time information on the field status. This and other earlier digital products (Yara ImageIT picture-driven crop optimization) are a strong foundation to build on in our future efforts

We are significantly stepping up our digital activities.

Yara sees substantial value in digital farming and therefore took a strategic decision to step up its activities, with the goal to become the global digital leader in crop nutrition

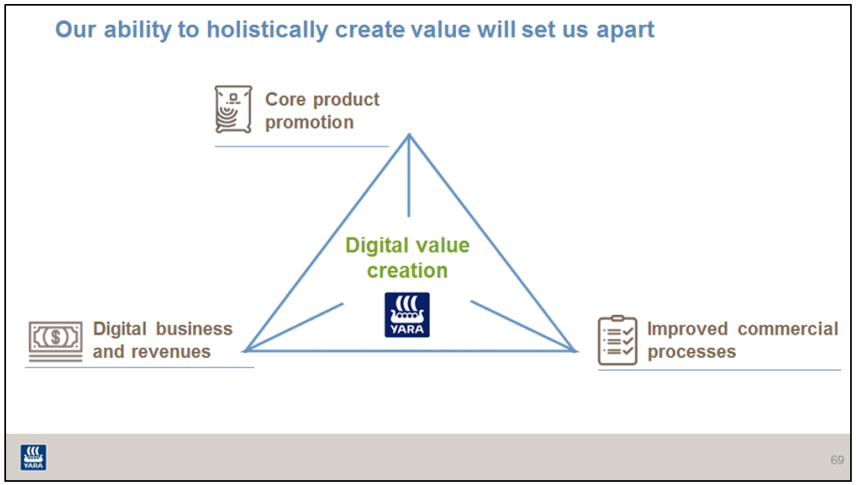
This means delivering:
- Scale and reach to farmers globally with our digital solutions
- Impact; making a real difference in the field through digital solutions
- Experience; an exciting interaction for the farmer to conveniently obtain highly relevant knowledge and information
- Value; digital business models that allow lasting differentiation



Cornerstones of our Crop Nutrition Digital Strategy

Our Digital Strategy is built upon the strengths of Yara, along four dimensions:
- We focus on digital crop nutrition solutions that have a high value for the farmer, building on our world-leading knowledge
- We benefit from our global reach and target both Yara fertilizer customers and all other farmers that can benefit from our digital services
- We have a unique opportunity to create value by combining the digital business models with our world leading fertilizer business
- We prioritize speed and agility, and invest to build the required new capabilities to succeed

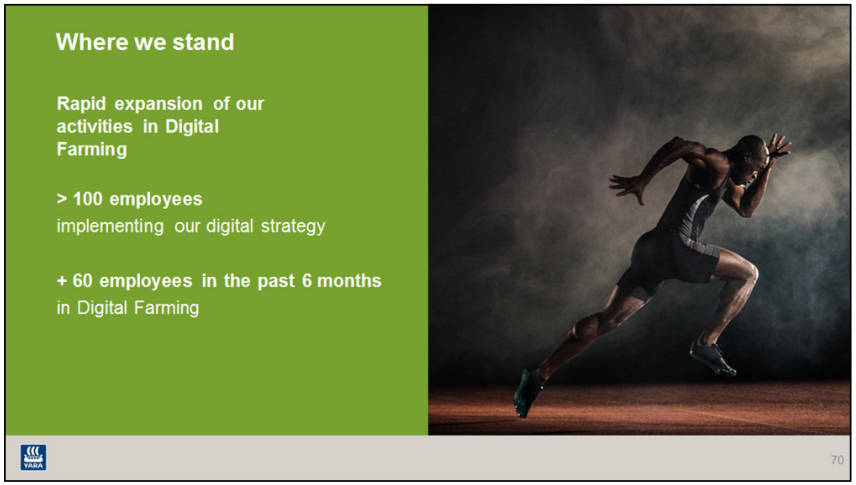
In order to ensure focus and a close link to our knowledge across the company, a new unit, Digital Farming, was introduced 6 months ago to take a leading role to implement our digital strategy.



Our ability to holistically create value will set us apart

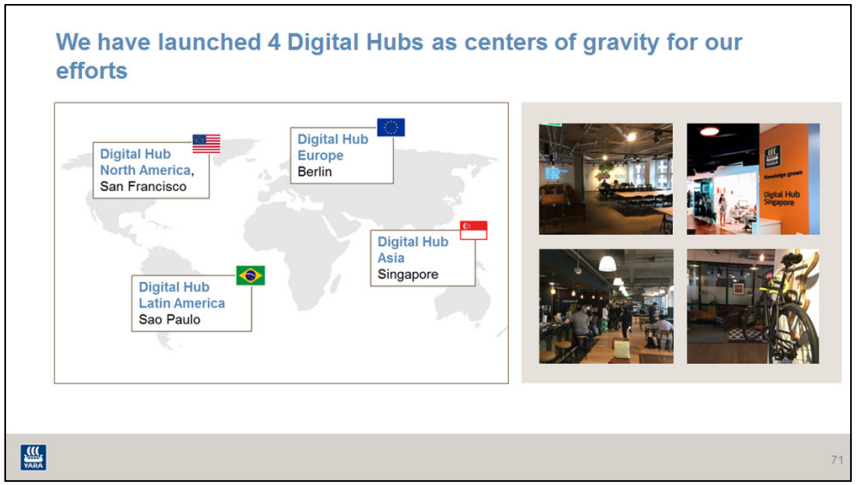
To maximize the value from our investments, we will capture value in three areas

1. (Support our fertilizer business, with demand creation and enhanced value propositions
2. (Develop a digital services business, that reaches beyond fertilizer sales and opens the door to commercialize our knowledge
3. (Support commercial processes, through learning from and interacting more closely with our customers



Where we stand: rapid expansion of our activities in Digital Farming

We started the implementation of our ambitious strategy 6 months ago, and have been significantly increasing our capabilities in Digital Farming



We have launched 4 Digital Hubs as centers of gravity for our efforts

Our Digital Farming team is centered around 4 Digital Hubs – i.e., competence centers that host our new digital solution teams.

We chose the locations combining proximity to our core markets and to the digital talent, and allowing a global yet tailored innovation.

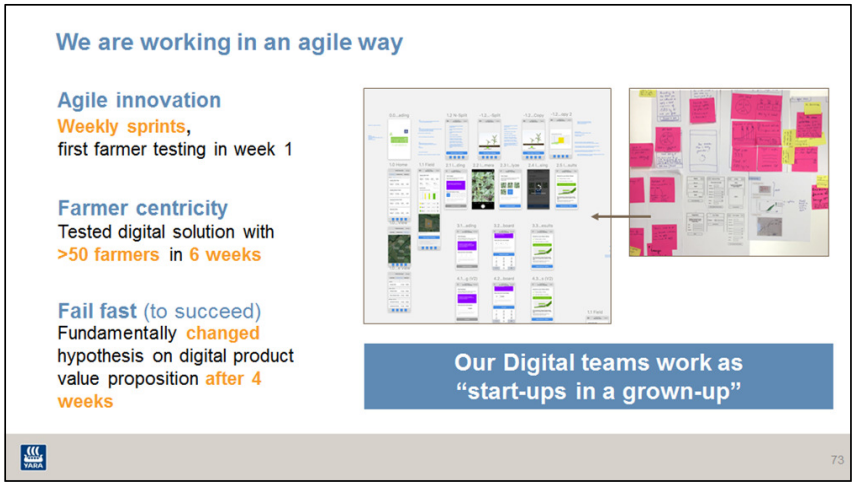
Our digital hubs are designed as creative spaces fostering innovation and entrepreneurship.

We are building new capabilities in Yara

We are adding new capabilities, that enable the build-up of an at-scale digital business and to install a new culture of agile innovation.

New capabilities include attracting entrepreneurs, putting user experience design at the center, in line with our farmer-centric strategy.

Yara's new capabilities also include the ability to design digital commercial models.

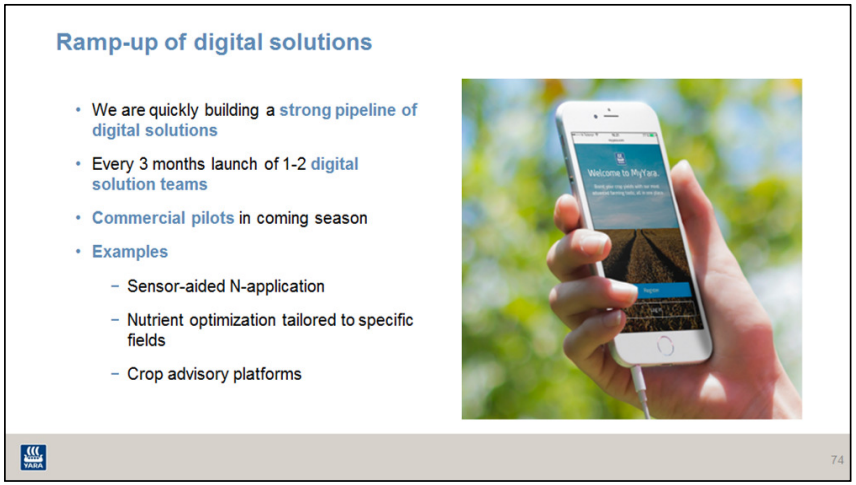


We are working in an agile way

We have implemented a new way of working within these solution teams, that is based on the dynamics of successful digital start-ups, operating within the knowledge pool of our global Yara organization.

The agile way of working is centred around fast turnaround of ideas into concepts and frequent user testing, bringing an immediate farmer-centric approach.

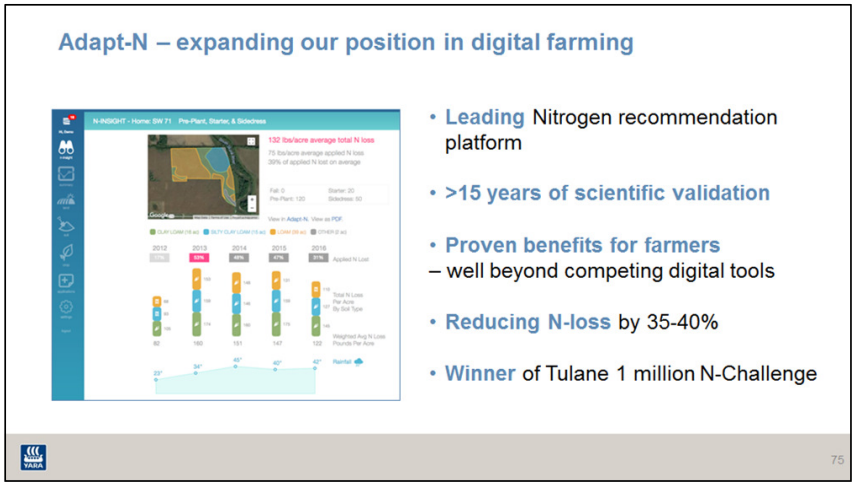
Fast learning is a key element of the culture we are implementing.



Ramp-up of digital solutions

In line with the build up of our capabilities, we are step-by-step broadening the work on digital solutions and offers. Consequently, every 1-3 months we are launching a “digital solution team”, i.e., cross functional agile teams to develop digital products for our markets. We are progressing fast and to the plan, with first pilots running in the coming season in different geographies across the globe.

Our digital solutions are built around our strengths, advancing and digitizing agronomic knowledge, tailoring it to the specific farmers’ fields. Solutions include optimization services for the application of N fertilizer based on sensors, digital solutions to optimize broader nutrient planning and application across the season, and platforms that allow a platform to access crop specific knowledge for farmers in our key crops.



Adapt-N – expanding our position in digital farming

In November 2017 Yara completed the acquisition of Agronomic Technology Corp (ATC), which operates Adapt-N, a leading nitrogen recommendation platform in the US that improves farmer profitability and agricultural sustainability.

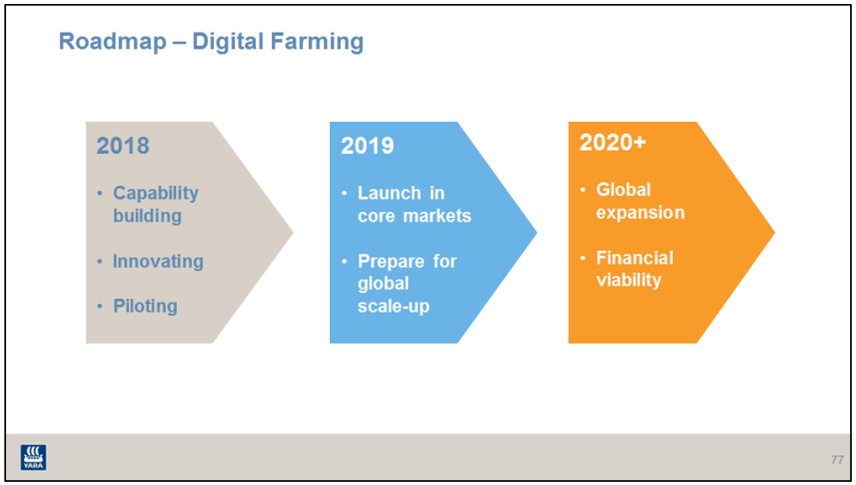
This leading digital solution is rooted in deep agronomic and scientific validation. Further, it is a highly valuable tool for Yara towards its mission of responsibly feeding the world and protecting the planet, as it allows proven and substantial N-loss reduction.

For this, Yara's Adapt-N solution received the winning prize in the Tulane N-Challenge, a prestigious competition of innovative solutions to address the problems from inefficient nitrogen use.

Benefits for Yara

The benefits from Yara's digital Strategy span far:

Within our core knowledge-driven business models, it allows a deepening of our insights and learnings. Further, our commercial operations and innovation will be fueled from the interaction with the farmers. This allows us to open new commercial models, from combining our physical products, services, and digital products in compelling and tailored offers for growers
Ultimately, the digital revolution in agriculture will allow a step-change in the optimum use of crop nutrition products, which help to feed the world and protect the planet.

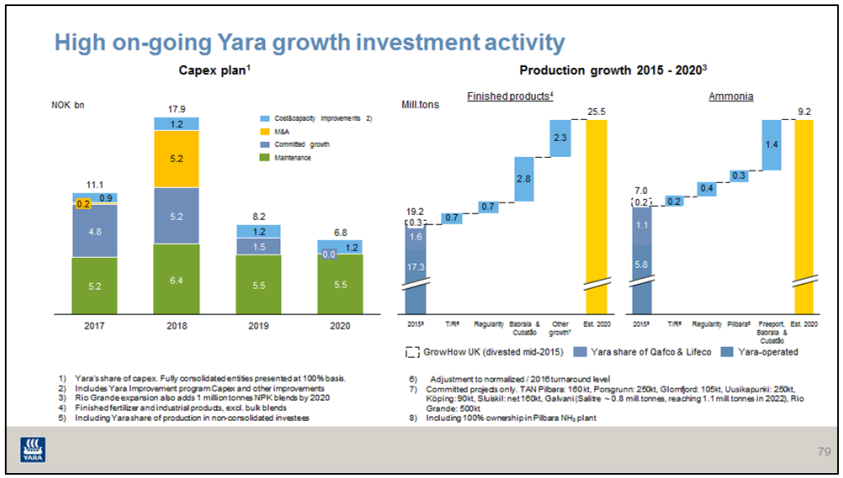


Roadmap – Digital Farming

As we are at the start of implementing our strategy, 2018 is focused on innovating the new digital business models and developing our capabilities further. In 2019 we will be able to conduct commercial launches in our core markets, before we in 2020+ reach the ability to globally expand and reach full scale, which will also allow us to build a viable business for Yara.

Our Digital Aspiration

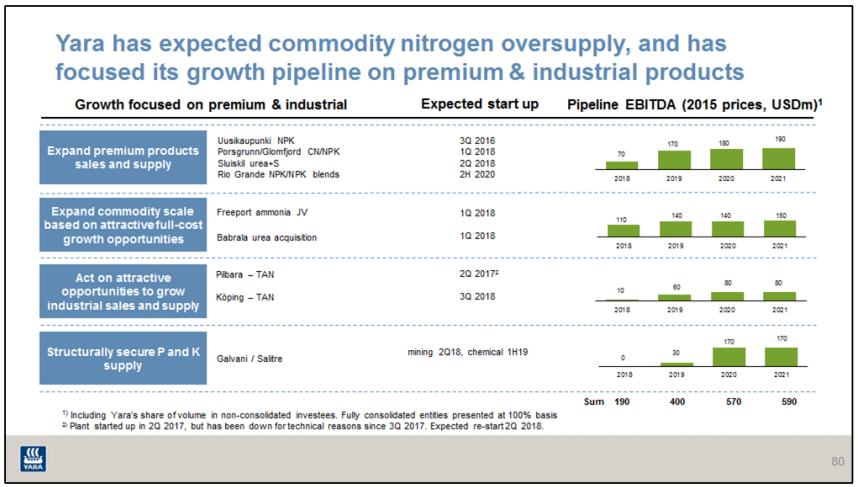
We are convinced about the opportunities from digitization in farming and are committed to our journey towards becoming the digital leader in crop nutrition.



High on-going Yara growth investment activity

Yara's 2017 capex ended lower than previously guided (16.5 BNOK), mainly reflecting the closing of the Tata Chemical urea business in January 2018 and some delays in the committed growth projects. Yara's 2018 capex includes the acquisition of Vale Cubatão Fertilizantes complex and higher than normal maintenance investments due to several major turnarounds.

The investments are estimated to increase Yara's production of finished products and ammonia by 6.5 mill. tonnes and 2.3 mill. tonnes, respectively, by 2020.



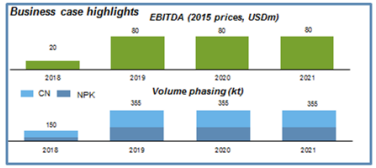
Yara has expected commodity nitrogen oversupply, and has focused its growth pipeline on premium & industrial products

Yara has focused its growth pipeline on premium and industrial products, within the four priority areas for growth.

Most of the growth projects will start up during 2018 with a ramp-up of volumes and EBITDA over the next years.

350 kt NPK and Calcium Nitrate expansion in Porsgrunn and Glomfjord, Norway

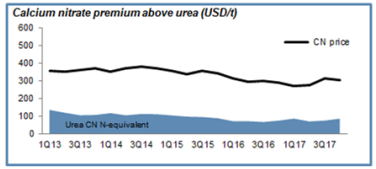
Business case highlights



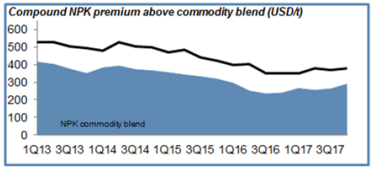
Investment highlights

- Project adds 200 kt calcium nitrate and 50 kt compound NPK annual capacity in Porsgrunn.
- Enables further 70 kt NPK and 35 kt calcium nitrate annual capacity in Glomfjord through optimization
- Expected start up in 1Q 2018
- 16% IRR at 2015 prices
- Est. capex USD 330 million
- First full earnings effect 2Q 2018

Calcium nitrate premium above urea (USD/t)

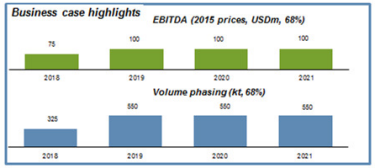


Compound NPK premium above commodity blend (USD/t)



Joint investment with BASF in world-scale ammonia plant in Freeport, USA

Business case highlights

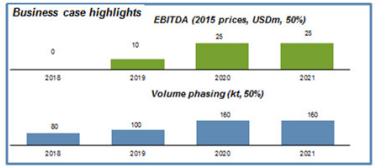


Investment highlights

- Attractive long-term partnership:
  - BASF has strong existing presence in the United States and ammonia sourcing requirement for US downstream activities
  - Yara has a strong global ammonia production and trade network, investment would further strengthen this position, and increase its North American upstream presence
- US Gulf location advantageous due to existing industry infrastructure, construction resources and natural gas
- Expected start up 1Q 2018. First full earnings effect 2Q 2018
- 17 % IRR at 2015 prices
- Est. capex (68%) USD 434 million

330 kt technical ammonium nitrate (TAN) plant in Pilbara, Australia

Business case highlights

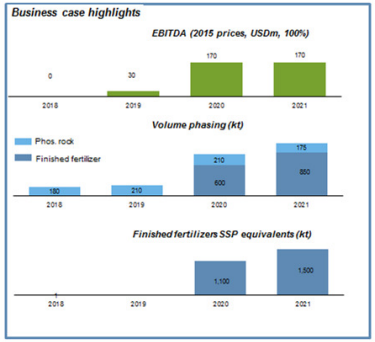


Investment highlights

- JV with Orica (50%/50%)
- Plant ideally located in the world's biggest iron ore mining region
- A distribution and marketing joint venture is established to distribute all ammonium nitrate and associated products and services to mining customers in the Pilbara region
- Start up 2Q 2017. First full earnings effect 1Q 2020
- 6% IRR
- The project return has been negatively impacted by delayed construction and downturn in the mining sector. However a gradual recovery in the sector is anticipated.
- Est. capex (50%) USD 360 million

Phosphate project in Salitre, Brazil

Business case highlights



Investment highlights

- The Salitre project, located in the state of Minas Gerais, a traditional mining region, will include a chemical plant in addition to the mining operation.
- Start up mining 2Q 2018, chemical production 1H 2019. First full earnings effect 1Q 2022
- Chemical production of MAP, NP, TSP, DAP, SSP
- 24% IRR at 2015 prices
- Est. capex USD 575 million

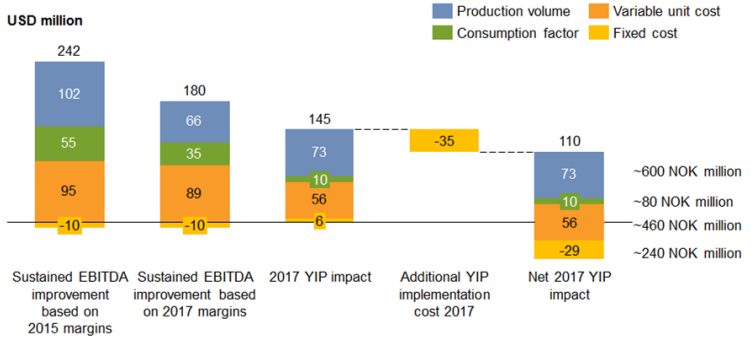
Yara to acquire Vale Cubatão Fertilizantes complex in Brazil – and establish Yara as a nitrogen producer in Brazil

Vale Cubatão Fertilizantes:

- Strong competitive position as only nitrate assets in Brazil
- Annual production capacity of 200 kt ammonia, 600 kt nitrates and 980 kt of phosphate fertilizers
- Approx. 970 permanent and 930 contracted employees
- Agreed enterprise value: USD 255 million
- Upgrading investments of USD 80 million up to 2020 to realize annual synergies of USD 25 million
- Closing expected by mid 2018
- Acquisition will strengthen Yara's production footprint, complement existing distribution position and add significant scale for the IND segment in Brazil

85

Yara Improvement Program effects



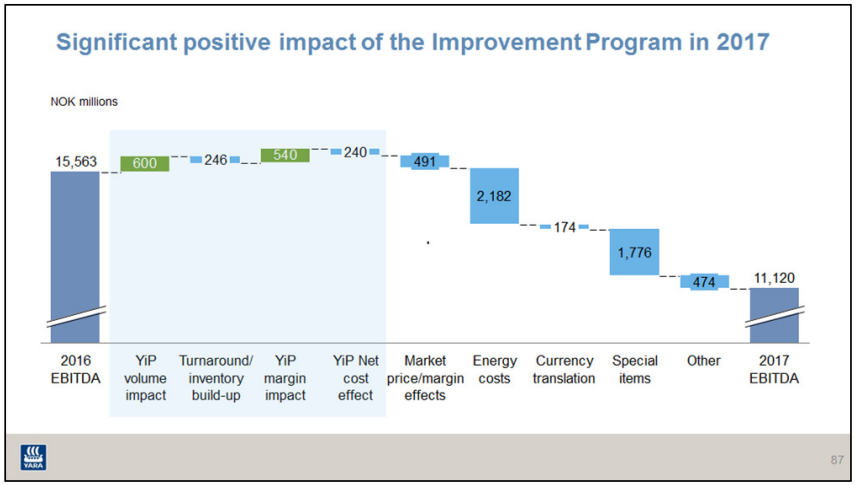
86

Yara Improvement Program effects

The Yara Improvement Program is defined as annual improvements to the company compared to the baseline year of 2015. To that end, the 2020 target of 500 million US dollars, and quarterly and annual status reports, are based on 2015 values applied to the improved production volumes. In 2017 the sustained EBITDA improvements based on 2015 margins amount to 242 million US dollars.

However, the market conditions change over time, and with compressed margins, the value of each additional ton of production is reduced. With 2017 margins, and adjusting for improvements to the consumption factor (energy) and variable unit costs (procurement) that is already embedded in the changed margin, the full effect of the program amounts to 180 million US dollars.

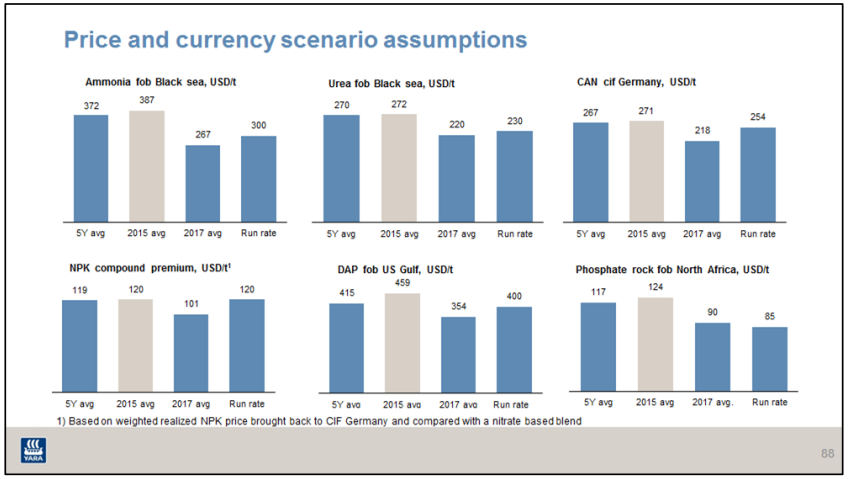
The impact of the program in 2017 compared to 2016 amounts to 145 million US dollars. This number is calculated based on volume improvements realized in 2017, plus additional improvements impacting margins through improved energy efficiency and procurement savings. When netting out the additional cost related to implementing the program, the net effect in 2017 alone is 110 million US dollars.



Significant positive impact from the improvement program in 2017

Yara delivered weaker 2017 compared with a year earlier. EBITDA excluding special items decreased 18% mainly due to lower margins. The Yara Improvement Program (YiP) had a positive impact of NOK 880 million in 2017.

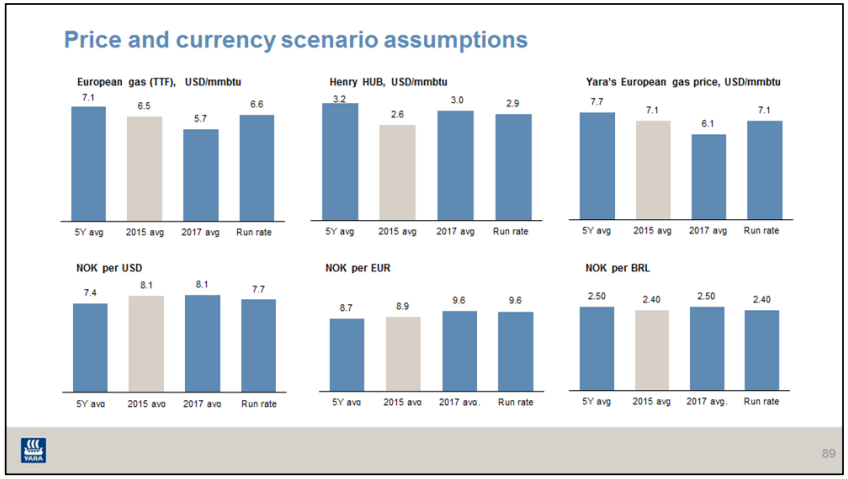
Yara Improvement Program volume impact related primarily to improved finished fertilizers production (adjusted for expansions and turnarounds). Margin impact related to improved variable costs (procurement) and improved energy efficiency. Net cost effect is primarily additional costs of implementing the program, offset partially be improvements to fixed costs in IT. Other volume effects, including turnarounds and changes in stock net out some of the improved volume production.

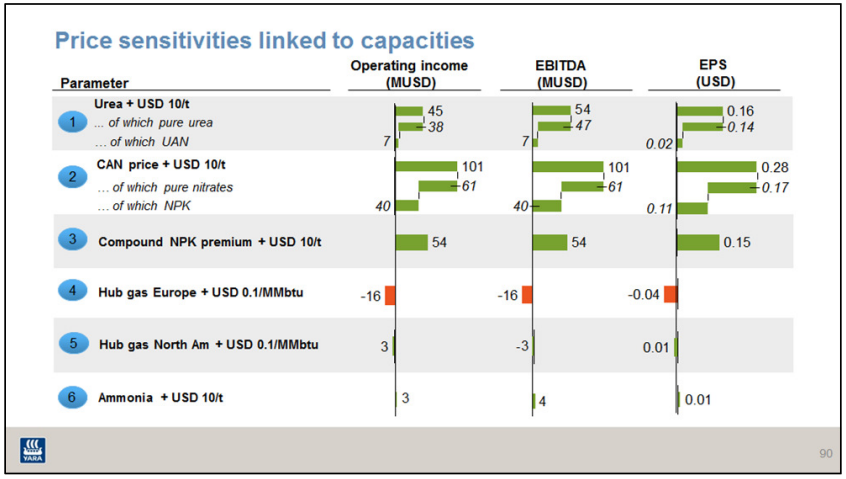


Price and currency scenario assumptions

The “5-year average” assumes fertilizer prices, energy prices and currency rates equal to the average over the last five years. The “2015 average” and the “2017 average” assumes fertilizer prices, energy prices and currency rates equal to the average over the calendar year. The run rate scenario assumptions reflect current market prices.

The cash flow and earnings in the various scenarios exclude special items and foreign exchange effects.



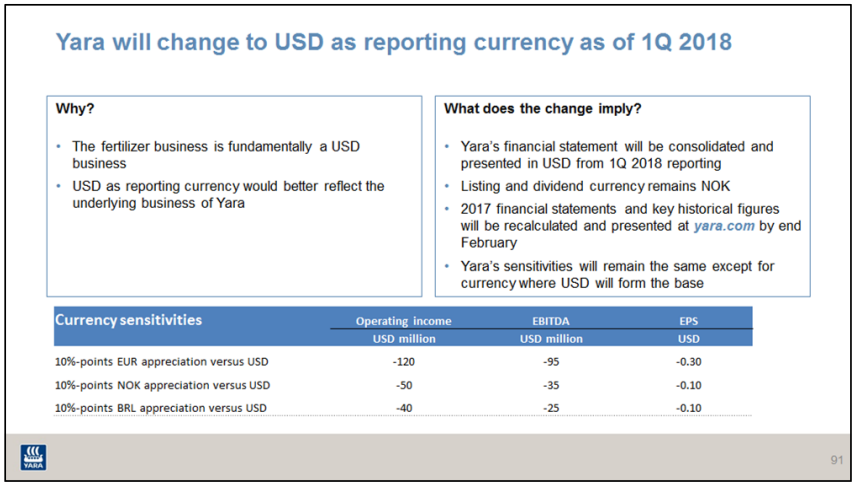


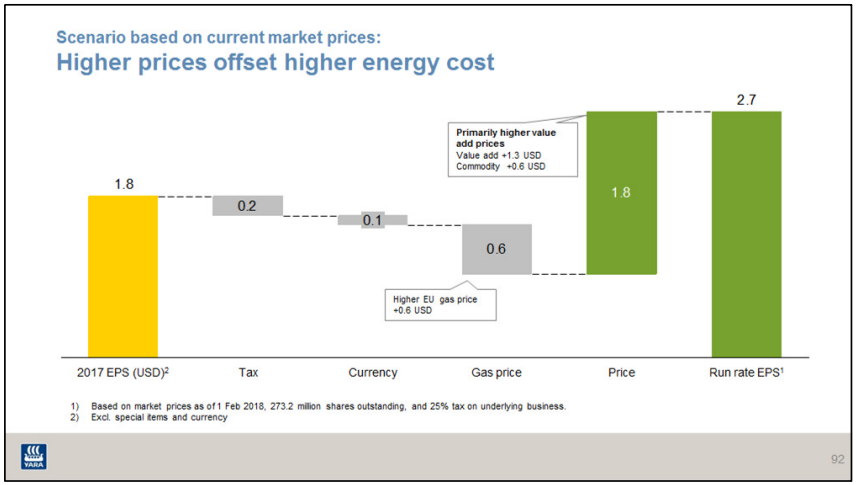
Price sensitivities linked to capacities

The basis for the sensitivities is Yara's capacity for the different product groups. The nitrogen component in NPKs are included in the CAN price sensitivity.

The sensitivities are long-term (>1 year) and ignore any correlation between the different parameters. For example, even though commodity prices in the past have often increased when the US dollar has weakened, this is not taken into account in the USD sensitivity.

Further explanation on how to use the sensitivities can be found at www.yara.com





Yara will change to USD as reporting currency as of first quarter 2018

Historical figures will be presented at yara.com.

The currency sensitivity will change as USD will form the base. Yara revenues are estimated to be 90% USD exposed, while fixed costs base is in EUR (~35%), NOK (~20%), BRL (~20%) and USD/other (~25%).

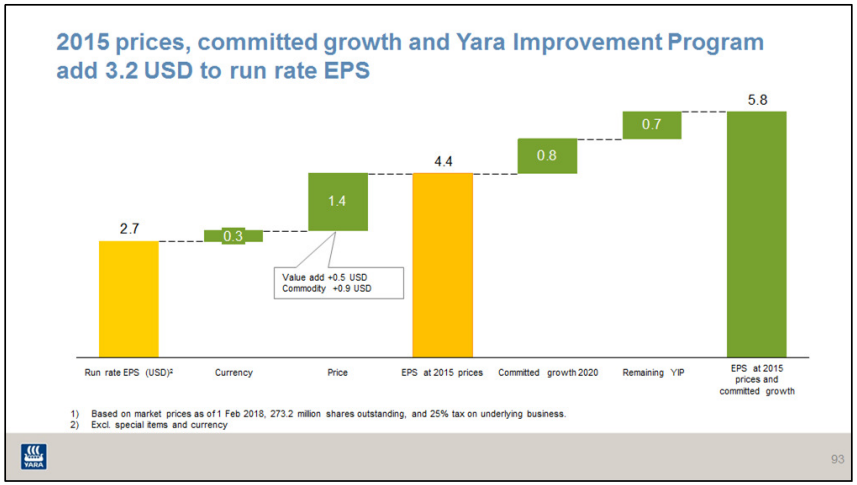
Local prices are generally affected by changes in the USD rate, but with a time lag (prices usually adjust within 1-9 months).

The sensitivity is based on the financial year 2017 at 2017 average FX-rates and shows assumed long-term effects (> 1 year).

Higher prices offset higher energy cost

Yara's 2017 EPS excluding special items and currency ended at USD 1.8 in 2017. The updated run rate scenario gives an EPS of USD 2.7.

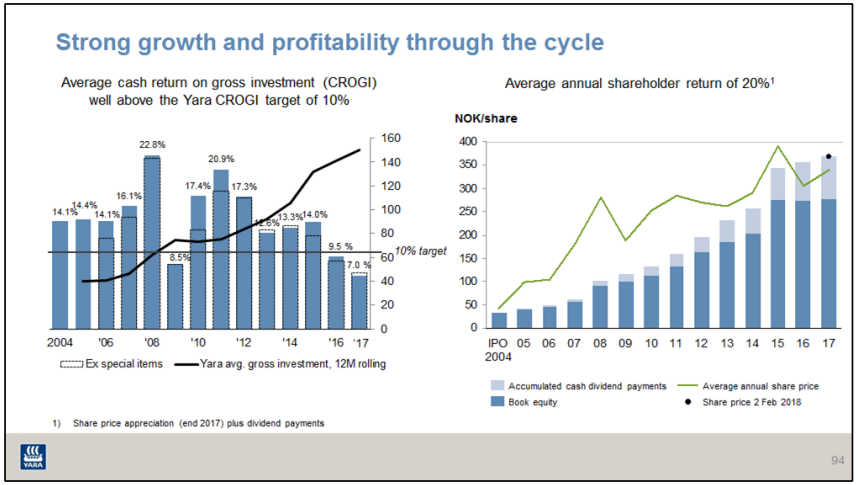
The main difference from 2017 is higher nitrogen prices, partly offset by a higher gas price in Europe.



2015 prices, committed growth and Yara Improvement Program add 3.2 USD to run rate EPS

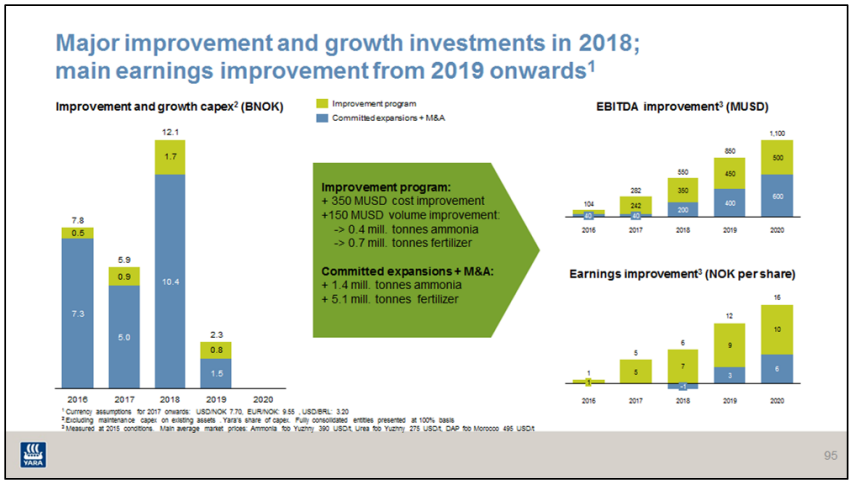
Yara's 2017 EPS excluding special items and currency ended at USD 1.8 in 2017, while the updated run rate scenario added additional USD 0.9 to the EPS. A scenario at 2015 prices which are closer to the last 5 years average prices and also used as an anchor for the Yara Improvement Program (YIP) and Growth Portfolio, will give an EPS of USD 4.4. The main difference from run rate is higher nitrogen prices and a stronger USD.

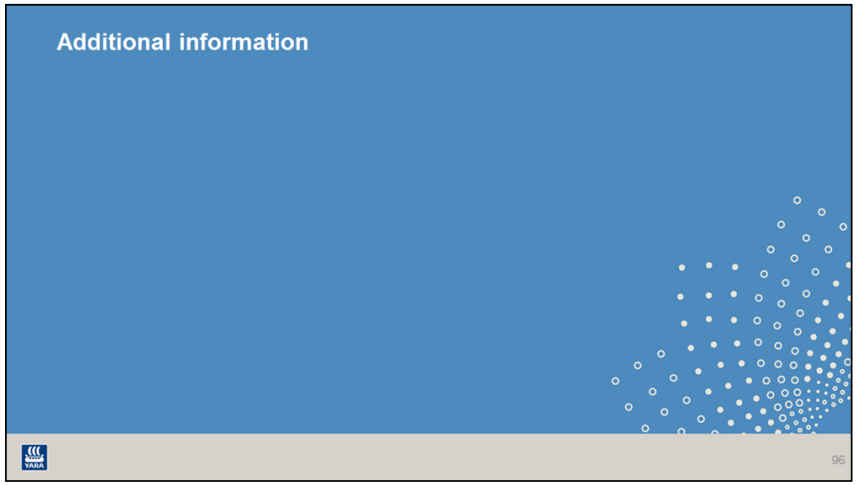
Adding the EPS from the committed growth projects and the EPS from the remaining improvements to reach the USD 500 million improvement target gives a total EPS of USD 5.8.



Strong growth and profitability through the cycle

Yara's growth strategy has over time generated good return for its shareholders. The current profitability is negatively impacted by the supply driven commodity fertilizer markets and Yara's high ongoing investment activity in growth projects where most will start to generate earnings during 2018.

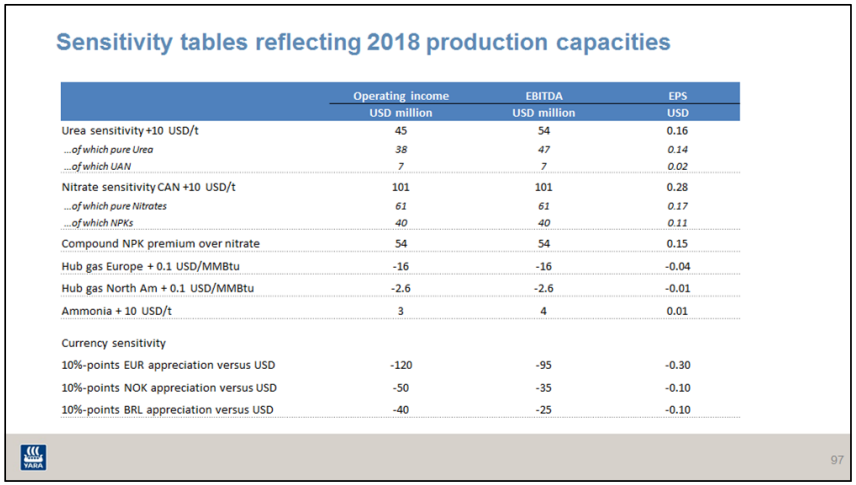




Major improvement and growth investments in 2018; main earnings improvement from 2019 onwards

On the left hand side we have added together the investments we are making both in the Yara Improvement Program and for our committed expansion and growth projects.

On the right hand side we show the combined projected earnings improvement resulting from these investment – on a 2015 baseline – totalling 1.1 billion dollars EBITDA within 2020, equivalent to 16 Norwegian kroner net income per share.



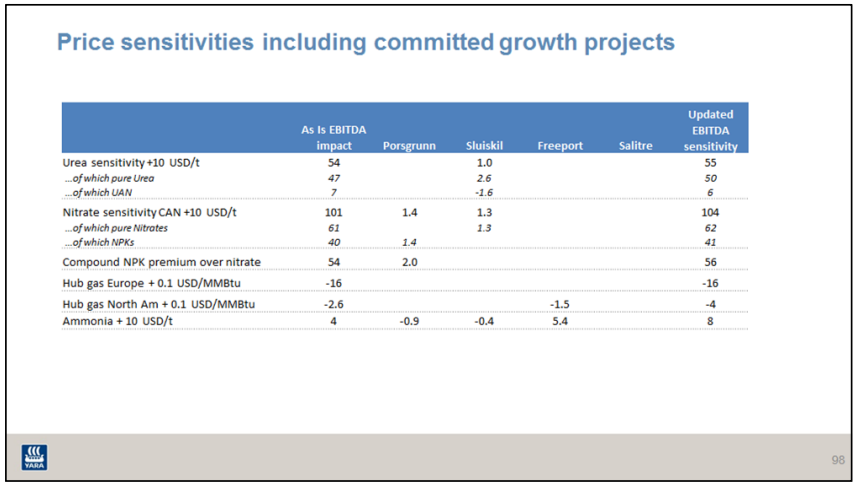
Sensitivity tables reflecting 2018 production capacities

The basis for the sensitivities is Yara's capacity for the different product groups. The nitrogen component in NPKs are included in the CAN price sensitivity.

The sensitivities are long-term (>1 year) and ignore any correlation between the different parameters. For example, even though commodity prices in the past have often increased when the US dollar has weakened, this is not taken into account in the USD sensitivity.

The currency sensitivities assume that revenues and raw material costs are USD-driven while fixed costs are exposed to local currencies at the locations where Yara operates. The currency sensitivities are based on the financial year 2017.

Further explanation on how to use the sensitivities can be found at www.yara.com

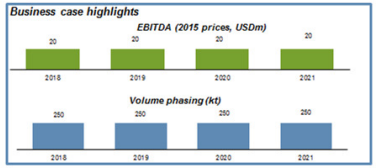


Price sensitivities including committed growth projects

The committed growth projects will impact the sensitivities as shown in this sensitivity table. The project sensitivity is representative for each project after a year in operation.

250 kt NPK expansion in Uusikaupunki, Finland

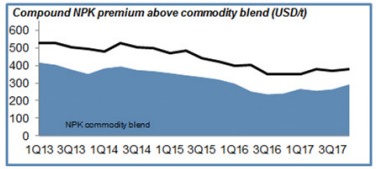
Business case highlights



Investment highlights

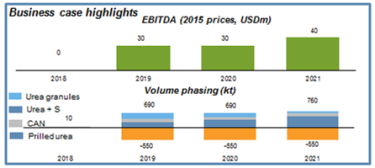
- Strong NPK demand growth outside Europe presents solid business case
- Project to install new granulator adds ~250 kt annual capacity
- Completed 2H 2016, UKI NPK production producing at full capacity 1H 2017
- 23% IRR at 2015 prices
- Capex USD 60 million
- First full earnings effect 1Q 2017

Compound NPK premium above commodity blend (USD/t)



Value-add expansion in Sluiskil, Netherlands

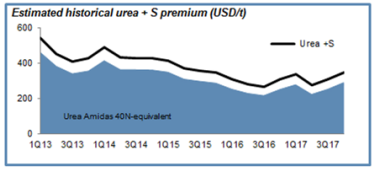
Business case highlights



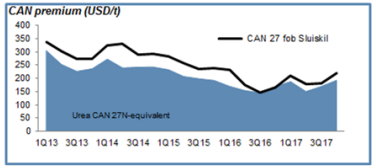
Investment highlights

- New urea granulator with capacity of 660 kt per year, replacing old prilling unit with capacity of 400 kt per year
- Granulator will produce urea with sulphur, a product sold with a premium to regular urea
- Investment frees up nitric acid enabling 130 kt of additional CAN production
- 13% IRR at 2015 prices
- Est. capex USD 263 million
- Expected start up 2Q 2018. Full volume effect from 1Q 2019. First full earnings effect 1Q 2022

Estimated historical urea + S premium (USD/t)



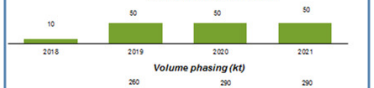
CAN premium (USD/t)



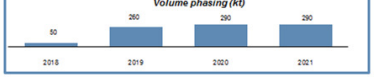
Nitric acid expansion in Køping, Sweden

Business case highlights

EBITDA (2015 prices, USDm)



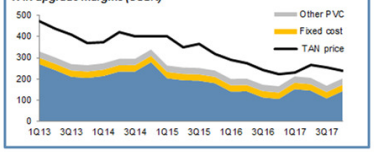
Volume phasing (kt)



Investment highlights

- Nitric acid upgrade and expansion in Køping
- The investment includes the construction of a new nitric acid plant replacing an existing plant which is approaching the end of its operating life. Net volume addition is 90 kt TAN
- Strong long-term fundamentals for mining and civil explosives industries
- 20% IRR at 2015 prices
- Est. capex USD 200 million
- Expected start up 3Q 2018. First full earnings effect 1Q 2019

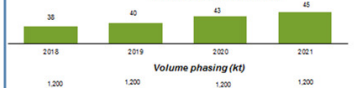
TAN upgrade margins (USD/t)



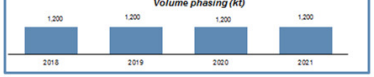
Acquisition of Tata Chemicals' urea business in India

Business case highlights

EBITDA (2015 prices, USDm)[1]



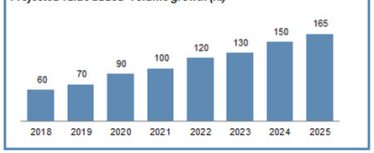
Volume phasing (kt)



Investment highlights

- Integrated world scale urea plant in Babrala, Uttar Pradesh:
  - Commissioned in 1994
  - World-class operations and energy efficiency
- Significant distribution footprint:
  - Warehouses: 4 own and approx. 100 third-party operated
  - Salesforce: 60 own, and approx. 300 on contract
- Acquisition provides footprint to accelerate premium product growth
- Take over January 2018. First full earnings effect 2Q 2018
- IRR 10% in business case
- Est. capex USD 421 million

Projected value added volume growth (kt)[2]

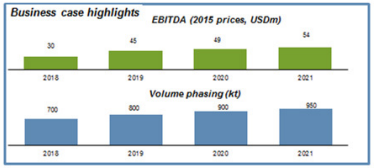


[1] *Assuming present regulatory framework*
[2] *Non-subsidized fertilizer*

Rio Grande expansion and operational improvement

Business case highlights

EBITDA (2015 prices, USDm)

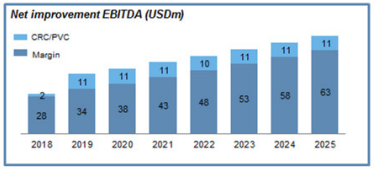


Volume phasing (kt)

Investment highlights

- Consolidation of 3 sites reduces fixed cost and maintenance investments
- Increased fertilizer production and blending capacity
- Improved safety and lower unit cost
- Increased product quality through improved handling and storage conditions
- Start up 2Q 2020. First full earnings effect 2Q 2020
- IRR 19% at 2015 prices
- Est. capex USD 475 million

Net improvement EBITDA (USDm)



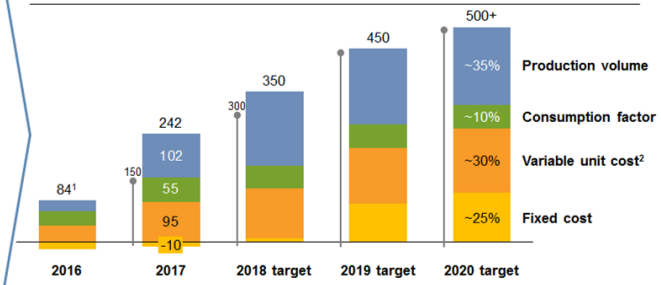
Improvements 90m USD over target for 2017 - target increased by 50m USD for 2018

- 2017 impact over target driven to energy and variable cost
- Volume improvements on track despite ammonia challenges
- 2018 expected 50 USD million over original target driven by volumes
- Volumes and variable unit cost expected to increase as share of total in 2020

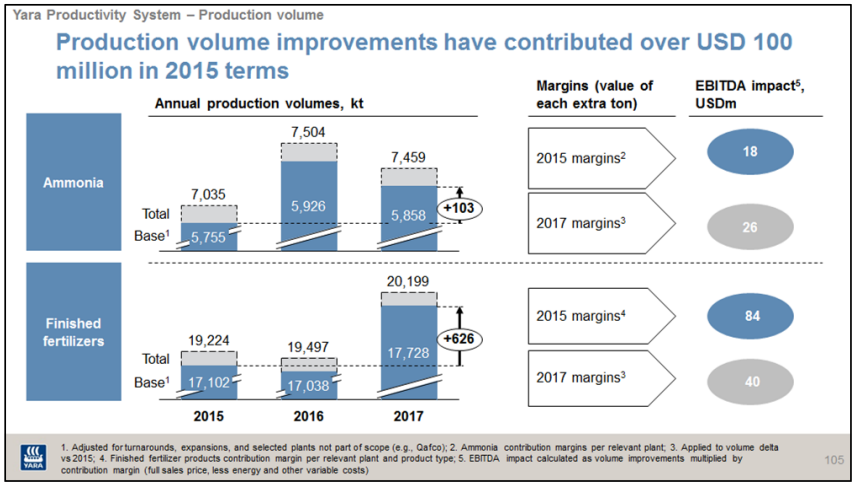
Sustained EBITDA improvement

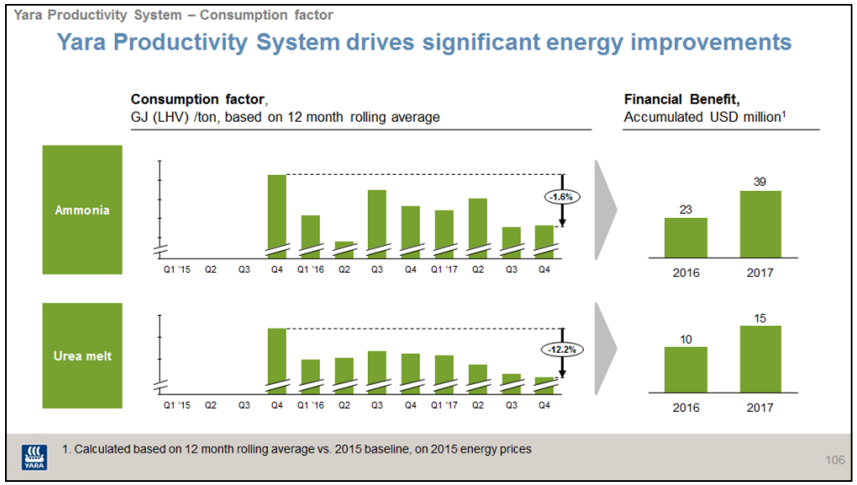
Annual impact, USD million, vs. 2015 baseline, at 2015 margins

Original target set 4Q '16



1. Adjusted for corrected full-year procurement savings (e.g., full-year bonuses), updated portfolio and 2015 margins; 2. Includes improvements to direct and indirect categories, as well as value of additional steam and reduced cost of emissions





Production volume improvements have contributed over 100 million in 2015 terms

Increased production has contributed more than 100 million US dollars in 2015 terms, and about 65 million US dollars when 2017 margins are applied to the same volumes.

The volume improvements are measured against the production level of 2015. We adjust for planned turnarounds and expansions (purchased capacity), but all other effects to our production portfolio affects the numbers. Finished fertilizer production delivered strong improvements in 2017, which is why about 85% of the volume production improvement contribution comes from this group of products.

Procurement Excellence – Variable unit cost

Procurement benefits calculation methodology

Calculation methodology

Direct categories

- Improvements measured against the most relevant **industry benchmarks**
- Benchmark publications and product **details specified to ensure relevant comparisons** over time

Indirect categories

- Improvements measured against **historical cost levels**
- **Where relevant**, the improvements are **adjusted for volume** (e.g., packaging materials costs measured on a 'per bag' basis)
- Guidelines established to tackle **potential cost avoidance issues** (i.e., for new or incomparable products or services)[1]

Improvements are included that are evaluated to be the result of specific and concrete improvement initiatives, (i.e., all improvements are related to concrete changes in specifications, contract terms or similar)

1. Cost avoidance is tracked internally to stimulate good choices for the company, but these are generally not reported against the improvement target

107