



KUALA LUMPUR
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Prospects for potassium chloride supply: Is too much capacity being built?

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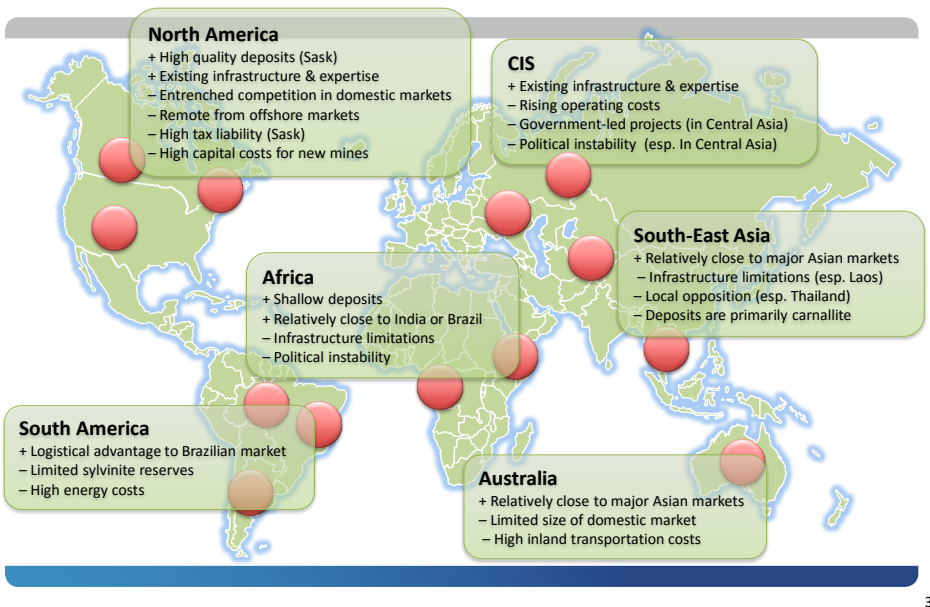
Agenda



- Global capacity overview: Exploration, capacity outlook & market fragmentation
- Supply dynamics into Asia: SE Asia, India, China
- Global market balance: Base case and scenarios
- Conclusion

Overview of key areas for exploration

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New entrants face big challenges

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Quality issues

- MOP is a simple product but it must meet widely accepted specifications.
- Uzbekistan, Laos have had problems..

Controlling costs

- Advanced projects have reported CAPEX over-runs
e.g. Legacy, Vanscoy, Volgakaliy

Marketing & logistics

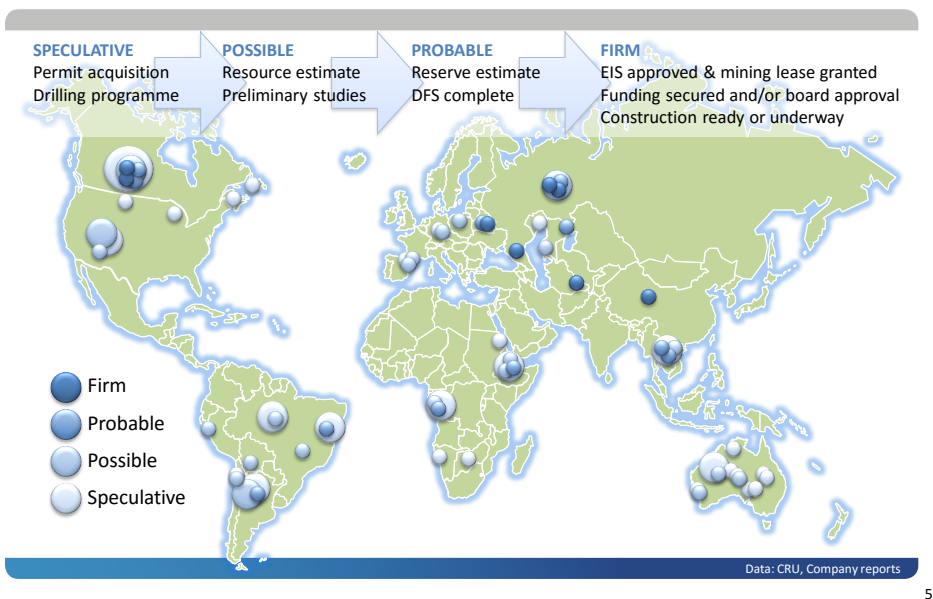
- Can existing infrastructure cope with new volume?
- How do you maintain sufficient netbacks after freight?
- Why should buyers switch supplier?

Example: K+S Legacy

- Capex has escalated by 25%
- Unlikely to join Canpotex because of EU regulation
Won't be able to access Canpotex freight setup.
Will have to challenge PCS & Mosaic in N America.

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Project status by location



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Capacity due on-stream by 2020



Global nameplate capacity from 81.8Mt/y in 2015 to 101.2Mt/y in 2020

Company	Site	Cap. (Mt/y)	CAPEX (\$bn)		
Projects under construction					
Eurochem	Greymachaya, Russia	4.6	4.0	●	Construction started 2009
EuroChem	Usolsky, Russia	3.7	2.9	●	Construction started 2011
K+S	Legacy, Canada	2.9	3.4	●	Construction started 2012
Turkmenhimiya	Garlyk, Turkmenistan	1.4	1-2	●	Construction started 2012
Belaruskali	Petrikov	1.5	?	●	Construction started 2014; wholly funded by Belaruskali
China Minmetals	Yiliping	0.3	?	●	Due in 2016; stage 1 of a potentially larger Qinghai project
Projects awaiting approval/funding					
Slavkali	Starobin, Belarus	2.0	1.7	●	\$1.4bn financing agreed with China Development Bank.
Highfield	Mugo, Spain	1.1	0.3	●	DFS completed in march 2015.
Viachem	Nong Bok	0.3	0.5	●	\$143mn financing agreed with Vietnam Development Bank.
MagMinerals	Mengo, Congo	1.2	1.3	●	Pre-construction work underway. Financing delayed.
Allana Potash	Danakhil, Ethiopia	1.0	0.6	●	Bought by ICL in late 2014 . Financing not yet committed.
Vale	Carnalita, Brazil	1.2	2.0	●	DFS complete, but Vale has reined in ferts spending.
APMC	Bamnet Narong, Thailand	1.1	?	●	Dating back to 1991, finally received EIA approval in 2014.
APPC (ITD)	Udon South, Thailand	2.1	1.2	●	Another old project, also received EIA approval in 2014.
KPC	Zhilyanskoye, Kazakhstan	1.2	0.6	●	DFS completed 2014.

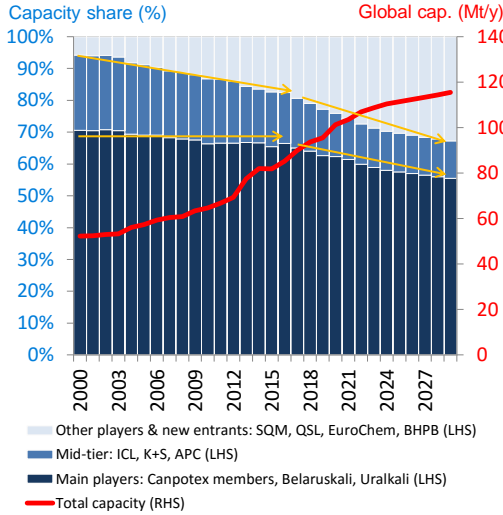
The most likely projects post-2020 are **BHPB Jansen** (10Mt/y), **Acron Talitsky** (2.0Mt/y) and **Uralkali Ust-Yayva** (2.8Mt/y). Shaft sinking is underway at all sites.

Data: CRU, Company reports

Effective capacity is lower than 81.1Mt/y in 2015, factoring in capacity going offline both voluntarily and involuntarily.

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New entrants pose a risk of supply fragmentation



Main players have maintained market share through expansion by other players so far. But they will lose out as new entrants (principally EuroChem and BHPB) come on stream.

Mid-tier players have already lost out to expansions in China, Chile and Uzbekistan. They will be squeezed more as new entrants come on line.

Risk of additional fragmentation posed by multiple minor new entrants in Central Asia and South-East Asia, as well as any of our "probable" projects.

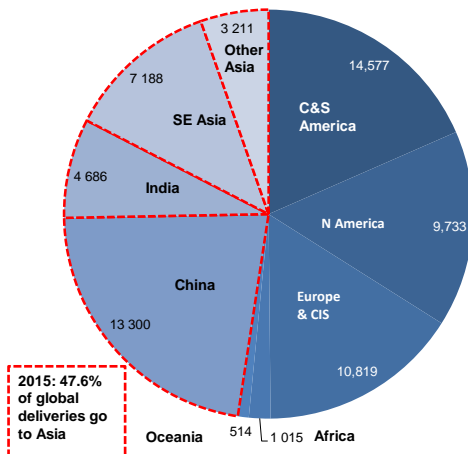
Data: CRU

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Asia as a destination for KCl supply



KCl consumption by region - 2015 ('000 t)



In 2015:

Almost half **47.6%** of global KCl deliveries go to Asia.

Asia took 28.5 Mt in 2015 of which China took 13.4 Mt.

In 2020:

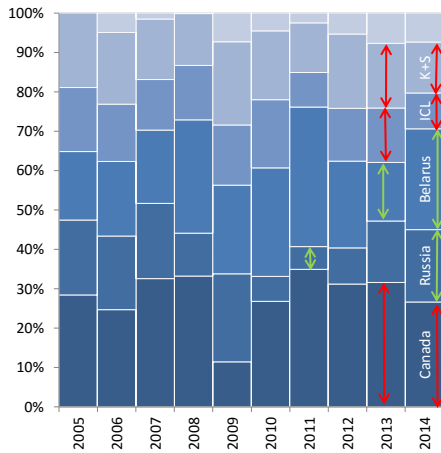
Asia will take slightly more **48.7%** of global KCl production.

But volumes forecast to rise: Asia to take 35.2Mt in 2020 Of which China to take 15.7Mt.

Data: CRU

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Asia market shares: SE Asia



The region has **low levels of market concentration** with Canada, Russia and Belarus all having similar shares in 2014.

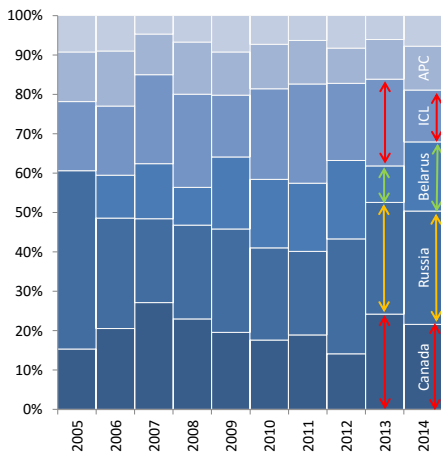
Since the mid-2013 BPC split, **competition into the region has increased** with Belaruskali fighting to increase market share. This has squeezed Canadian producers, ICL and K+S.

Uralkali's share has risen in recent years – wanting more SE Asia market share was a likely driver for it choosing to exit BPC.

Competition **benefited importers** in the region by putting downward pressure on prices.

Data: CRU, GTIS, Company reports

Asia market shares: India



The region has **relatively low levels of market concentration** with Canada, Russia and Belarus all well represented in 2014, but Russia was had the largest presence.

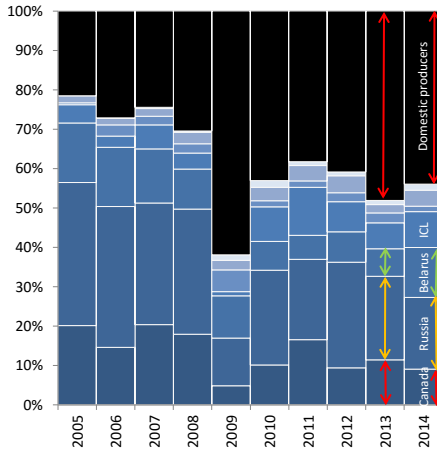
Post the BPC split Russia maintained its share as **Belarus' share grew**. This squeezed Canadian producers and ICL.

Potential new entrants:

- ICL Allana is best placed to compete.
- Any export-orientated plant (e.g. K+S, EuroChem, MagMinerals) would seek some sales in India.
- If demand recovers, APC would be keen to re-build sales in India.

Data: CRU, GTIS, Company reports

Asia market shares: China



The Chinese market is **dominated by domestic producers** concentrated in the Qinghai Playa. **Russia and Belarus** are the main foreign producers in the market.

Increased competition since the BPC split has seen **Belarus grow its share** as Russia has held steady. This has squeezed domestic and Canadian producers.

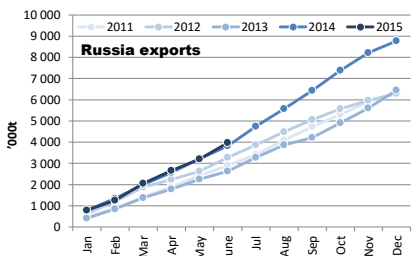
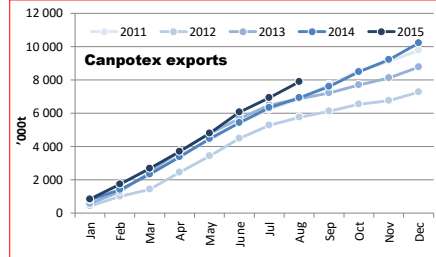
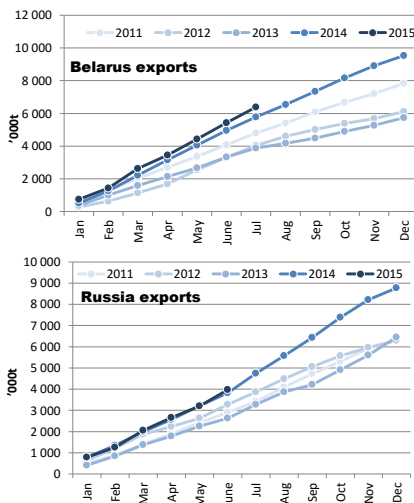
Possible new entrants:

- Uzbekistan, Turkmenistan & Laos (esp. if have Chinese backers).
- Any export-orientated plant (e.g. K+S, EuroChem, ICL Allana) would seek sales in China even as domestic output grows.

Data: CRU, GTIS, Company reports

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In 2015 Canpotex responded, gaining market share



2014 global exports:

- In 2014, Russia and Belarus exports rose post-BPC split.
- Canpotex kept exports limited, to support price stability.

2015 global exports:

- Russia and Belarus kept exports broadly stable.
- Canpotex responded to recover market share lost in 2014, raising exports.
- This may have contributed to rising competition.

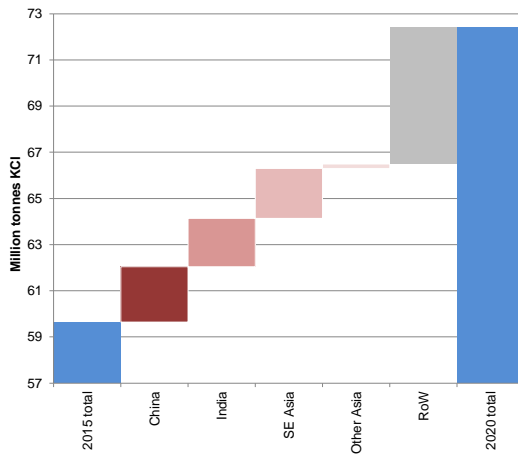
Data: GTIS

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Global and Asia demand-contributors outlook



Contributions to 2015-20 KCl demand growth



2015-20 : Global KCl demand to rise by 12.75 Mt/y.

Over half of 2015-20 global KCl demand growth due to Asia demand growth.

Asia: 6.85Mt/y or 53.7% of total.

China and India are the two largest country-contributors to this growth.

China: 2.40 Mt/y or 18.8% of total.

India: 2.09 Mt/y or 16.4% of total.

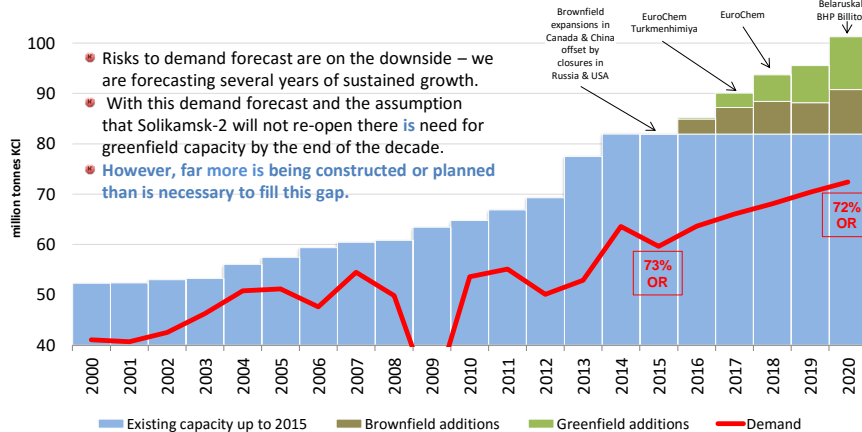
Taken as one, SE Asia is a similarly large driver.

SE Asia: 2.16Mt/y or 17.0% of total.

Data: CRU

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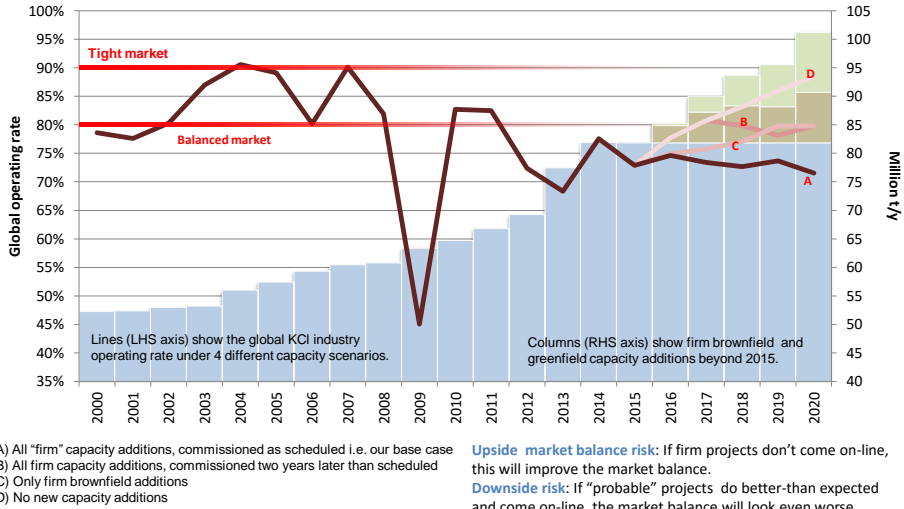
Global market balance: base case



Data: CRU

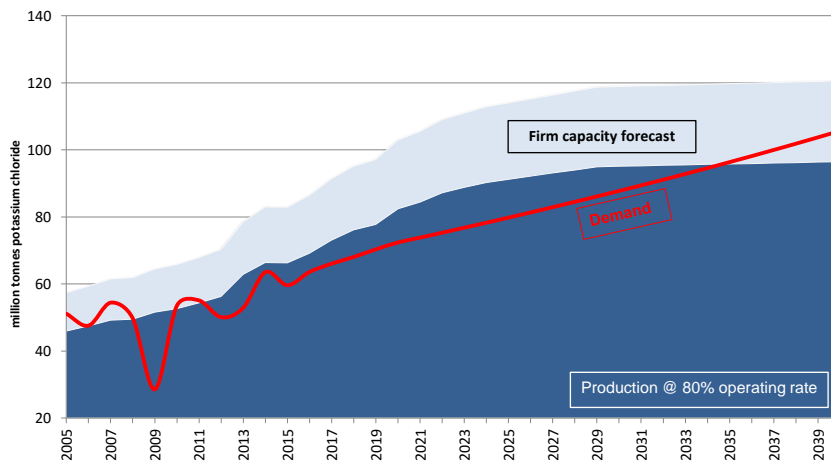
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Market balance under different capacity scenarios



Data: CRU

Market balance: Long-term outlook, base case



Data: CRU

Conclusions



- Base-case scenario: **Excess capacity is being built**, leading to a global operating rate of nameplate capacity 72% in 2020, similar to 2015. This means price competition is likely for the foreseeable future. (A balanced market would have an operating rate of 80%).
- Downside risk scenario: **Further capacity from probable projects** (e.g. Slavkali, Highfield) comes on-line. This will increase the global capacity-demand differential and could weigh further on operating rates. (This scenario is a real possibility)
- Conservative capacity growth scenario: **Even if only brownfields are commissioned** out to 2020, the global operating rate will only be that of a just-balanced market. (This scenario is unlikely)
- Conclusion: The potash market has (and will continue to have) **significantly more capacity than is needed** for a balanced market.

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CRU's Potash Analysts



Paul Burnside, Principal Consultant
Paul joined CRU in 2007. He has led the implementation of CRU's proprietary cost methodology in the fertilizer sector and is the chief analyst on potash markets.

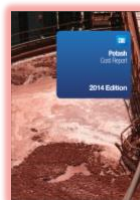


Gavin Ju, Senior Consultant
Gavin joined CRU in 2008, having worked previously at the China Chamber of Commerce. He is based in CRU's Beijing office, which celebrated its 10th anniversary in 2014.



Daniel Solomon, Consultant
Daniel joined CRU in 2014, having worked previously at the Centre For Economics & Business Research in London.

CRU's Cost Portfolio



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