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Global Sulphur Market Outlook

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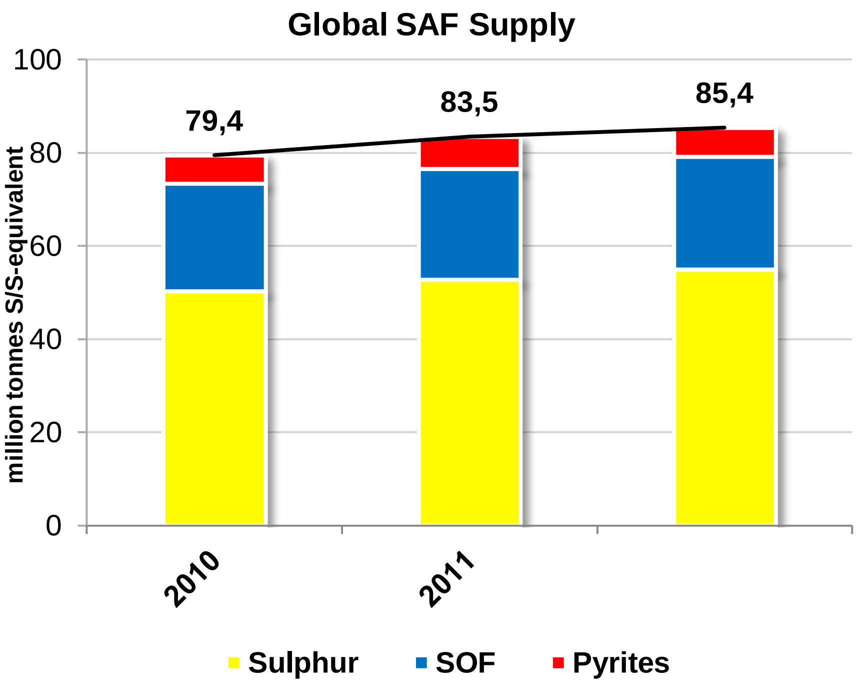
Discussion overview

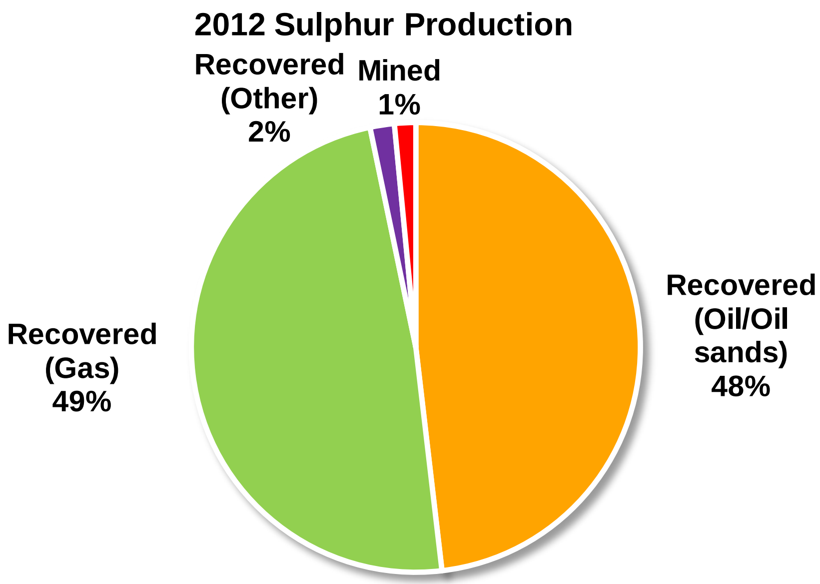
Global Market Overview

Forecast to 2017

- **Supply Overview**
  - **North America**
  - **Middle East**
  - **CIS**
  - **China**
- **Demand Overview**
  - **Phosphates**
  - **Nickel Leaching**
- **Balance**

Phosphates Outlook
A healthy market on the horizon?





- Sulphur-in-All-Forms (SAF) supply dominated by involuntary production
  - Brimstone*(64%)*
  - Smelter acid (SOF) *(29%)*
- Voluntary production - Pyrites *(7%)*

- Oil and gas are main brimstone sources *(97%)*
- Other (coal gasification, etc.) *(2%)*
- Mined sulphur *(1%)*

Phosphates Outlook
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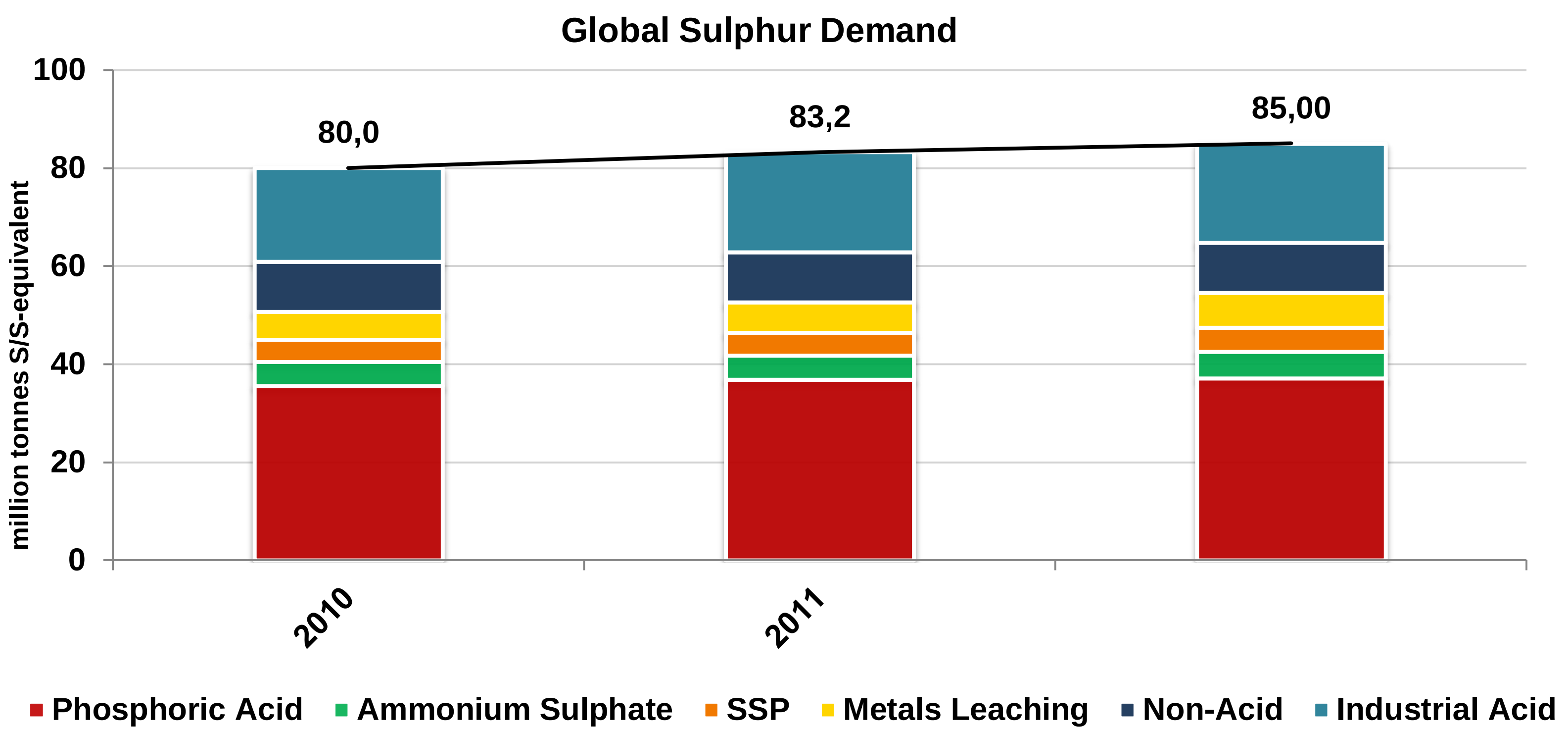
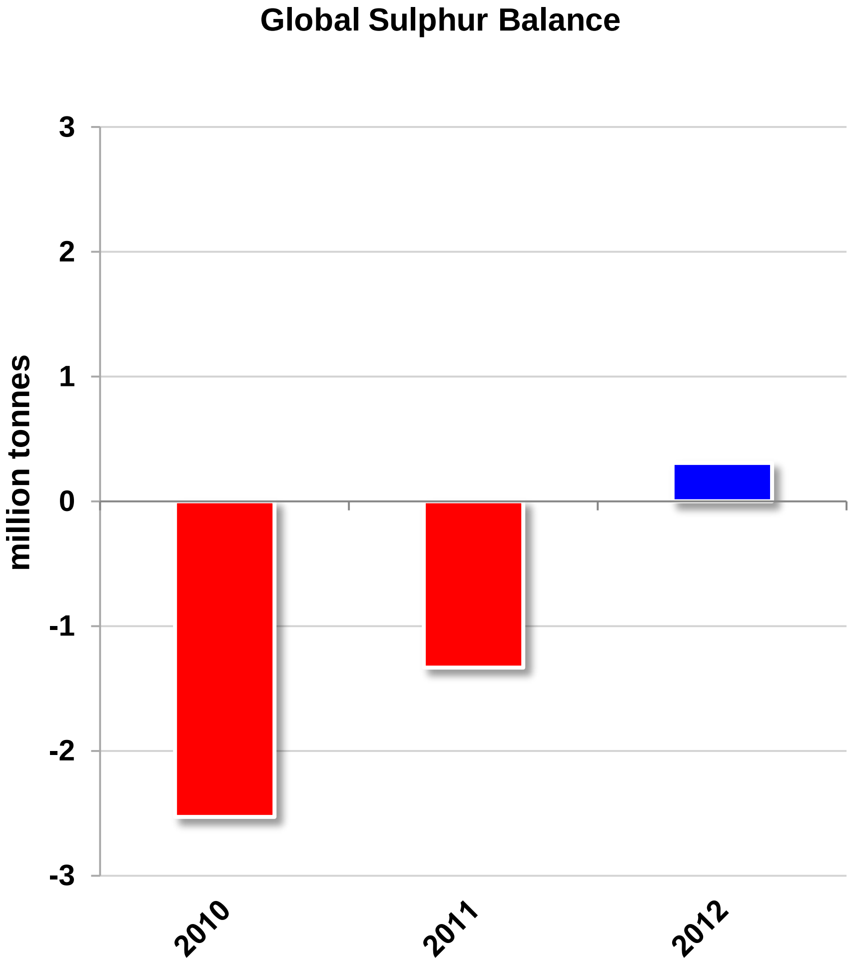
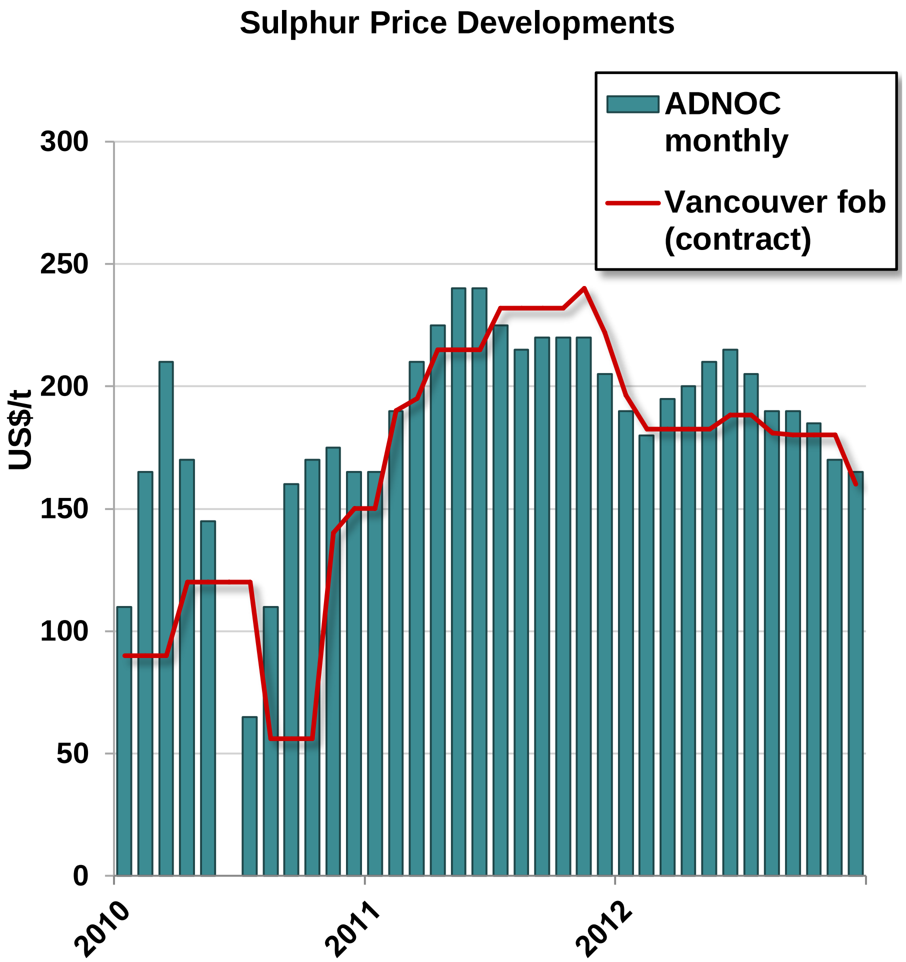


- SAF demand dominated by fertilizer production
  - Phosphoric acid, SSP, Ammonium Sulphate *(56%)*
- Base metals production and industrial uses also important *(32%)*

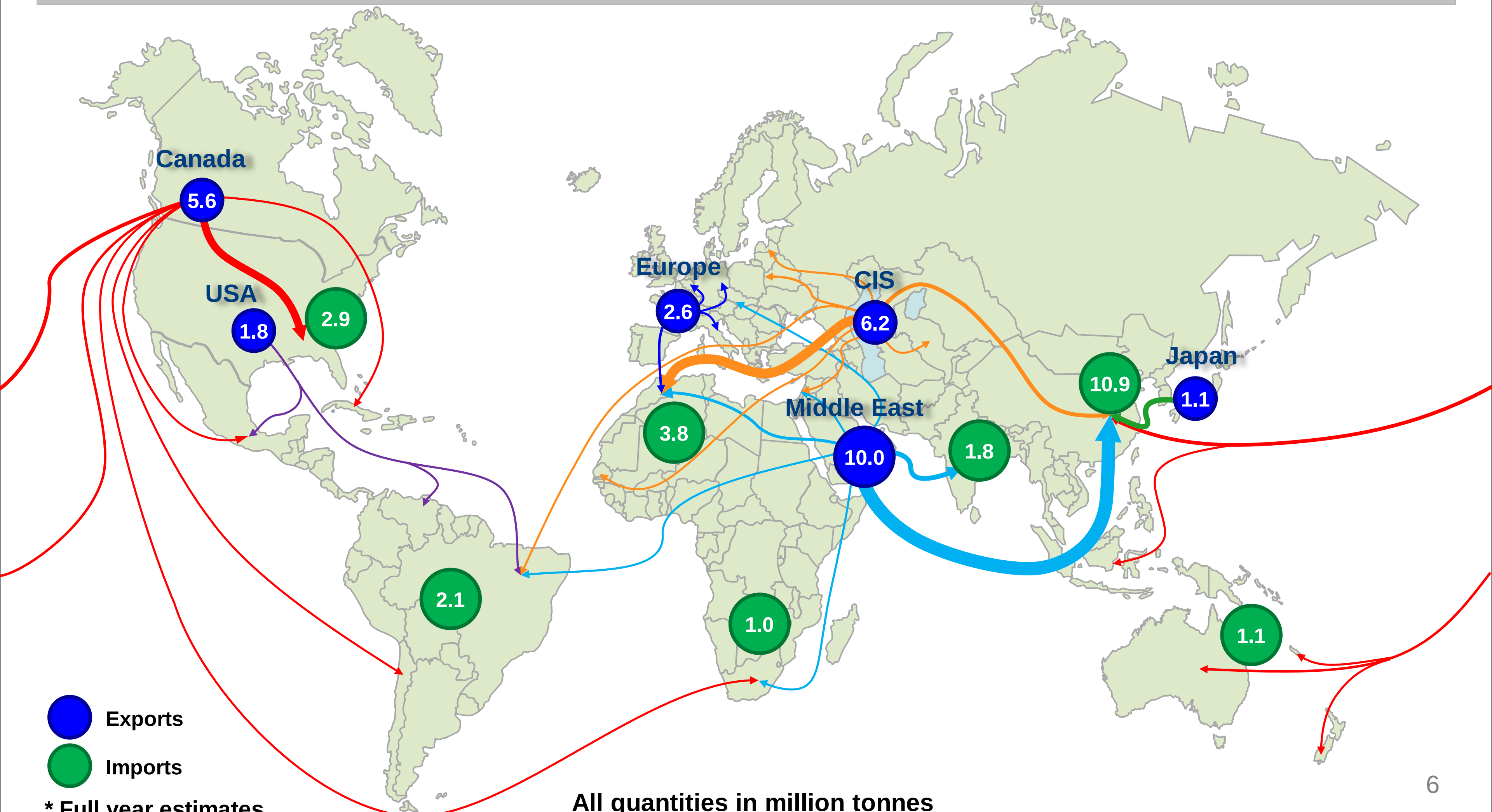
Sulphur Balance and Prices





Key Sulphur trade routes (2012*)

Total trade 31 million tonnes



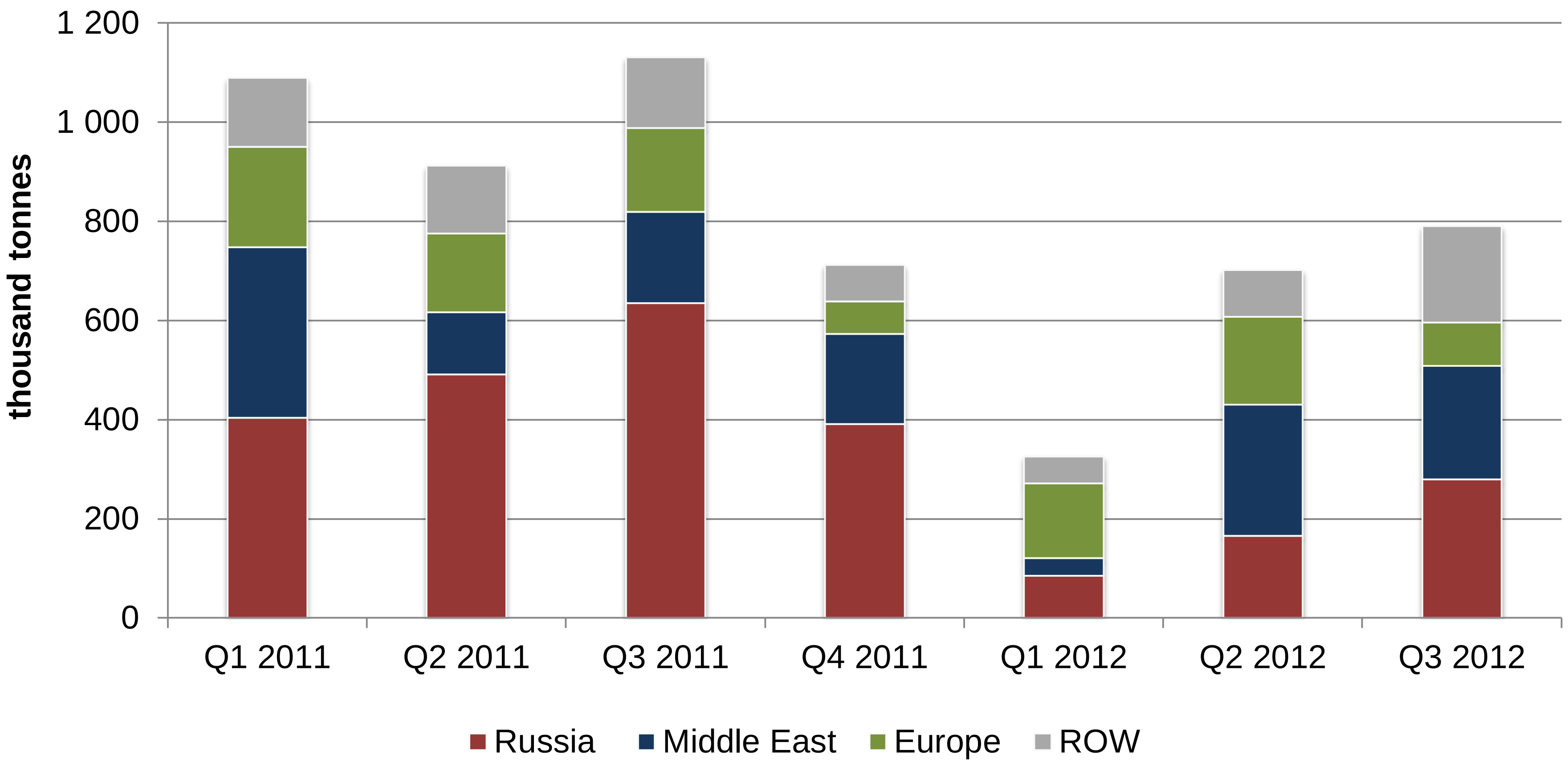
* Full year estimates

All quantities in million tonnes

Moroccan quarterly sulphur imports

Down by 40% y-o-y

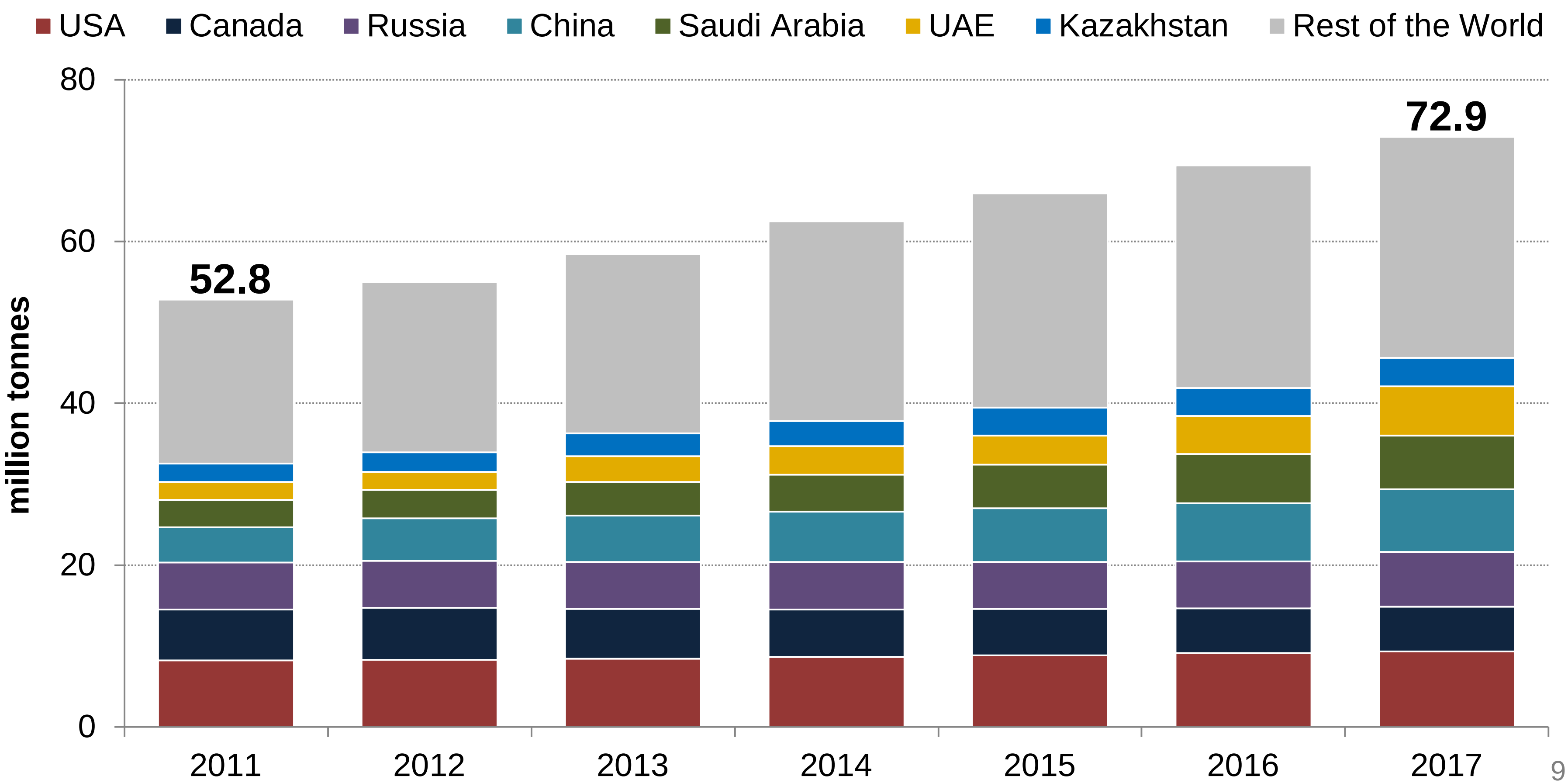
Quarterly Moroccan sulphur imports by origin, 2011 - 2012



SUPPLY FORECAST TO 2017

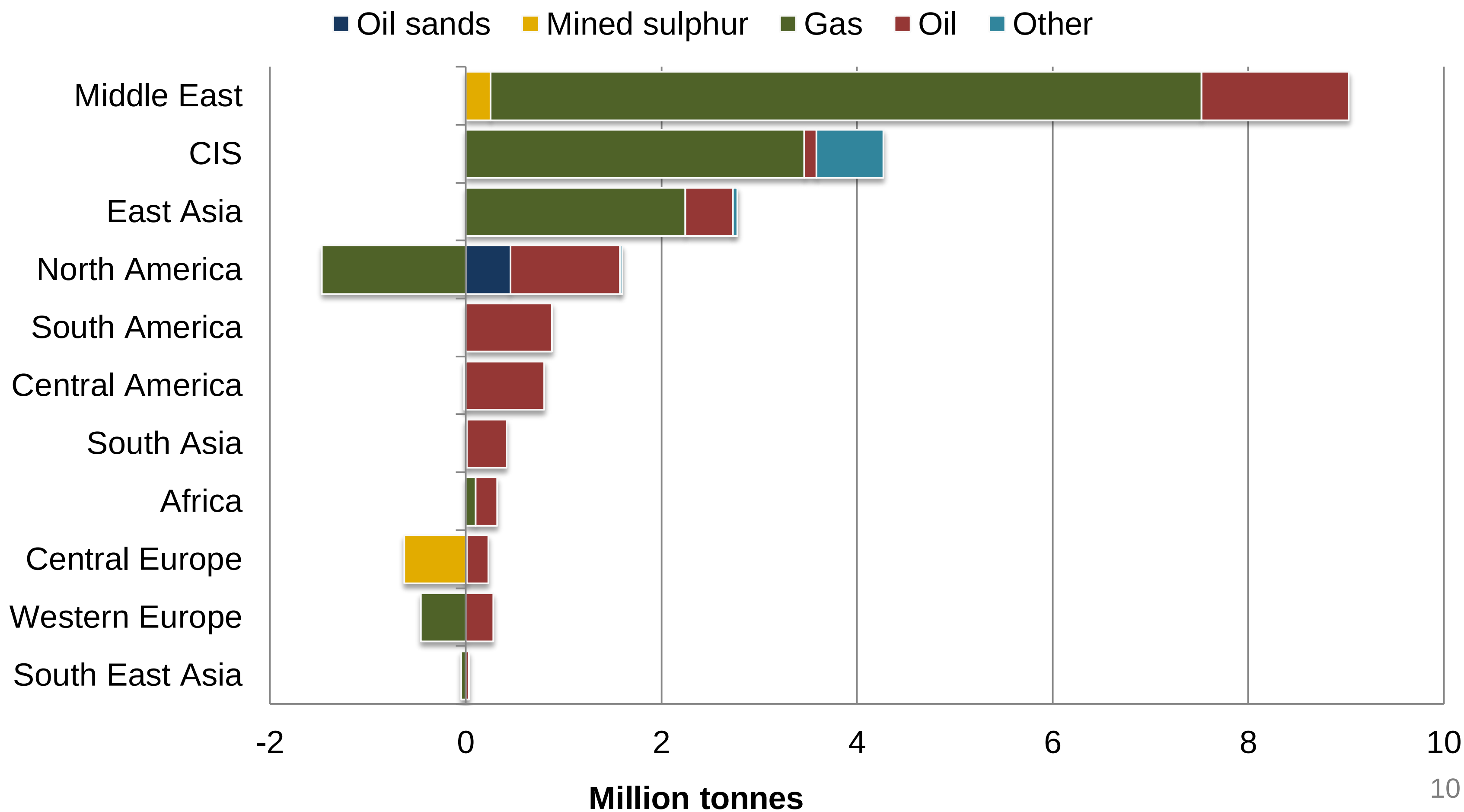
Global sulphur supply outlook, 2011 -2017

Global sulphur production by country, 2011 - 2017



Global sulphur supply outlook, 2011 -2017

Global incremental changes to supply by source, 2012 - 2017



North American sulphur supply, 2011 -2017

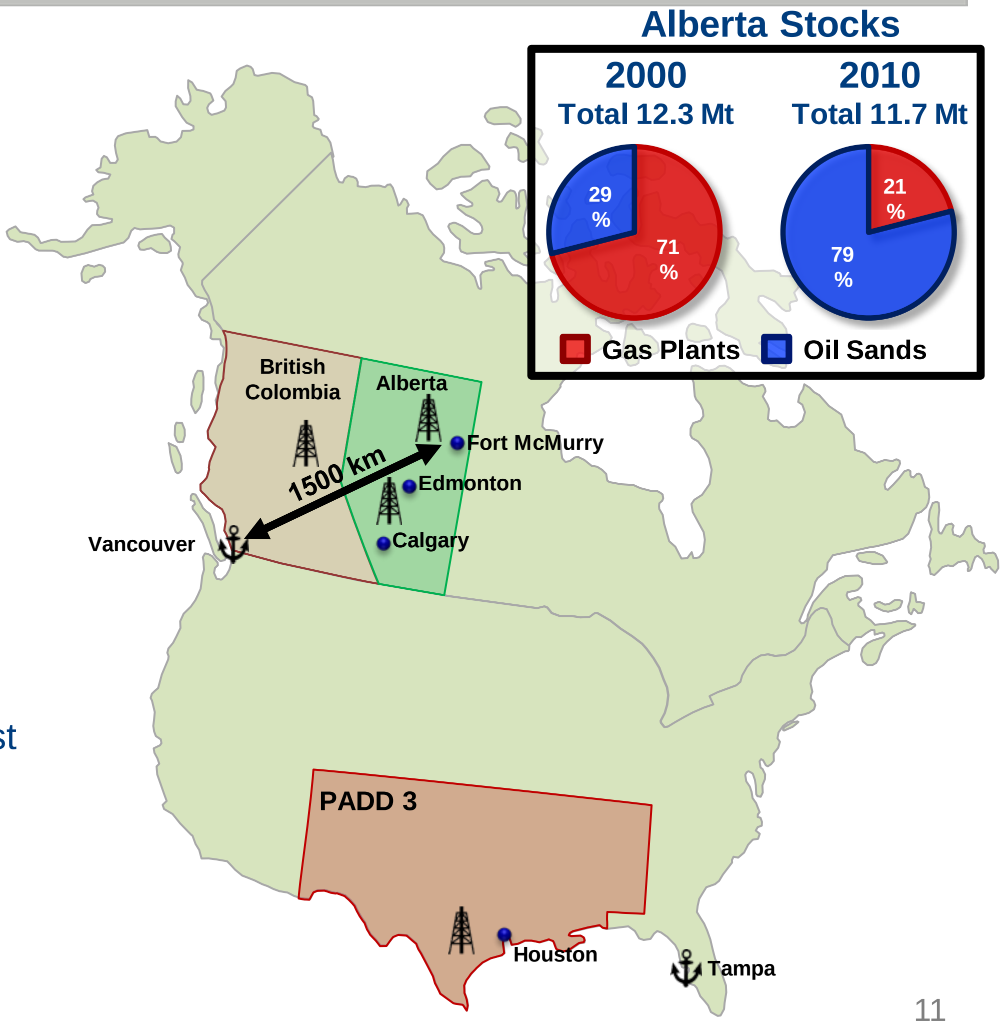
Regional Production stable at 15 Mt/y

United States of America

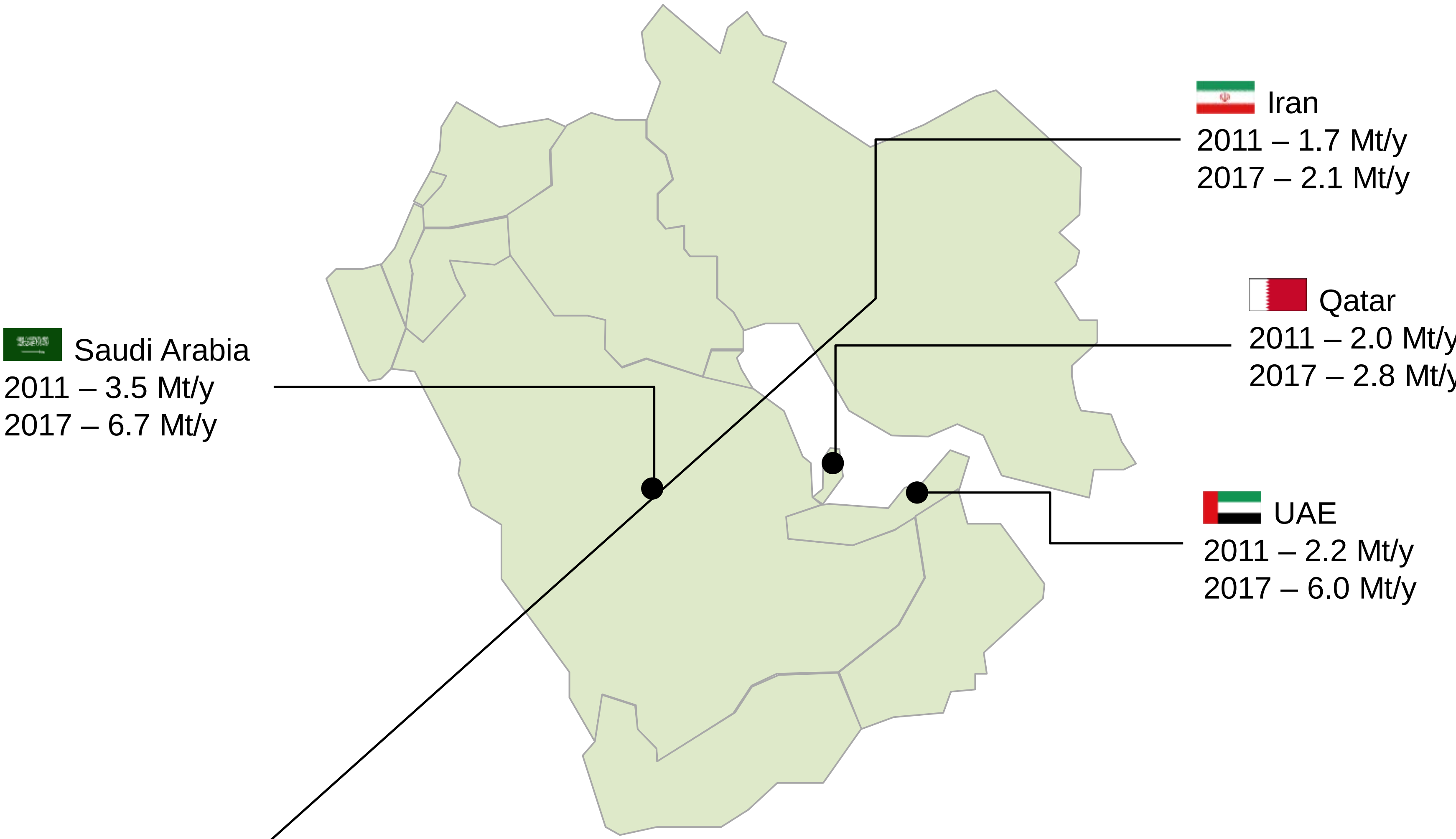
- Sulphur output to grow by 1.2 Mt
- Increases from oil refining activities (majority of production in PADD 3)

Canada

- Alberta gas fields depleting
- British Colombia production stable (0.8 Mt/y)
- Increases from Alberta oil sands (+0.8 Mt)
- Destocking in Oil sands region would be high cost



Middle East sulphur supply, 2011 -2017



CIS +4.3 Mt (2011-2016)
New producers are the key to growth

Russia

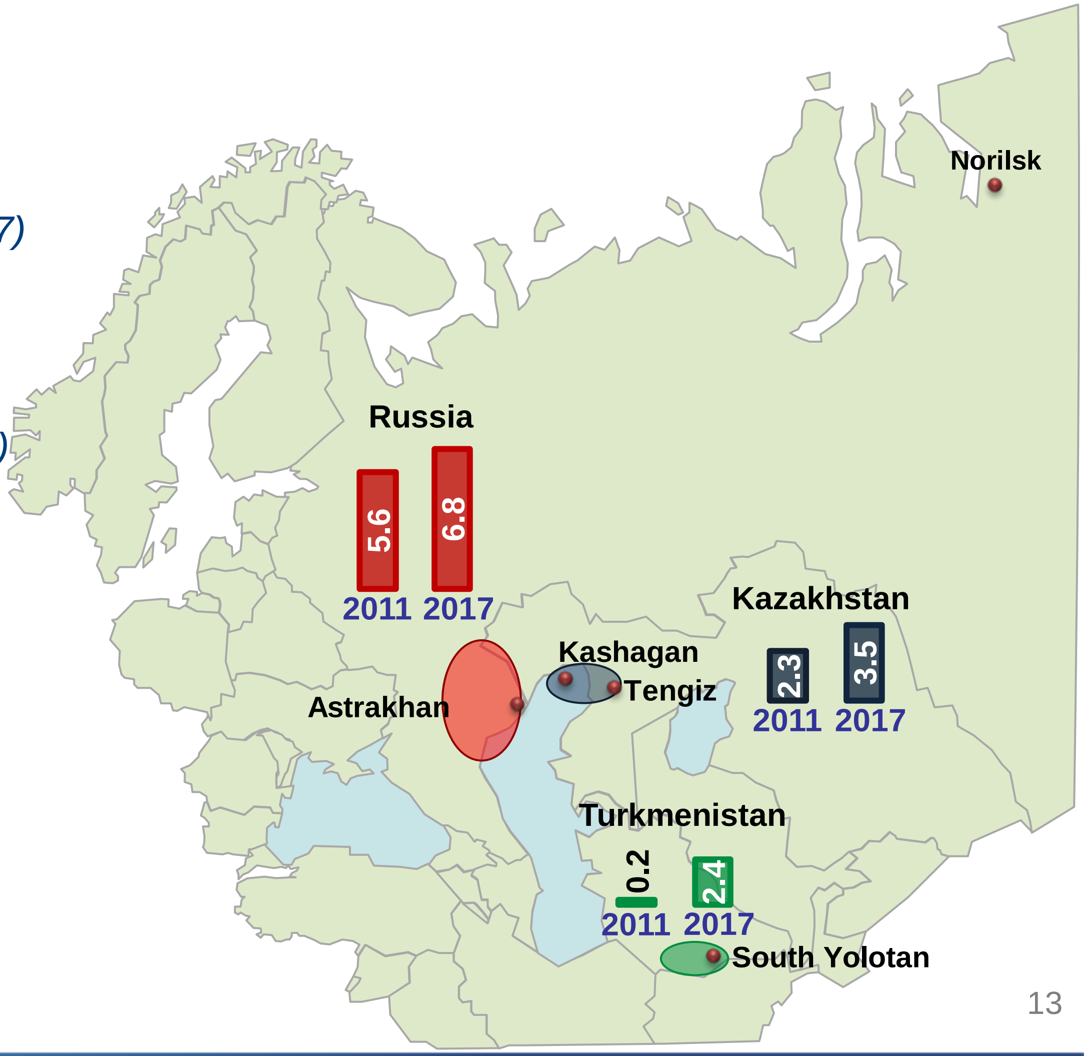
- 5.8 Mt to 6.8 Mt *(2011→2017)*
- Output from gas stable at 5.8 Mt/y *(2011)*
- Norilsk Nickel producing 1.0 Mt/y (*2016-17)*

Kazakhstan

- Tengiz to produce 2.3 Mt/y
- Kashagan expected on-stream (mid-*2013)*
  - 1.2 Mt/y by 2016

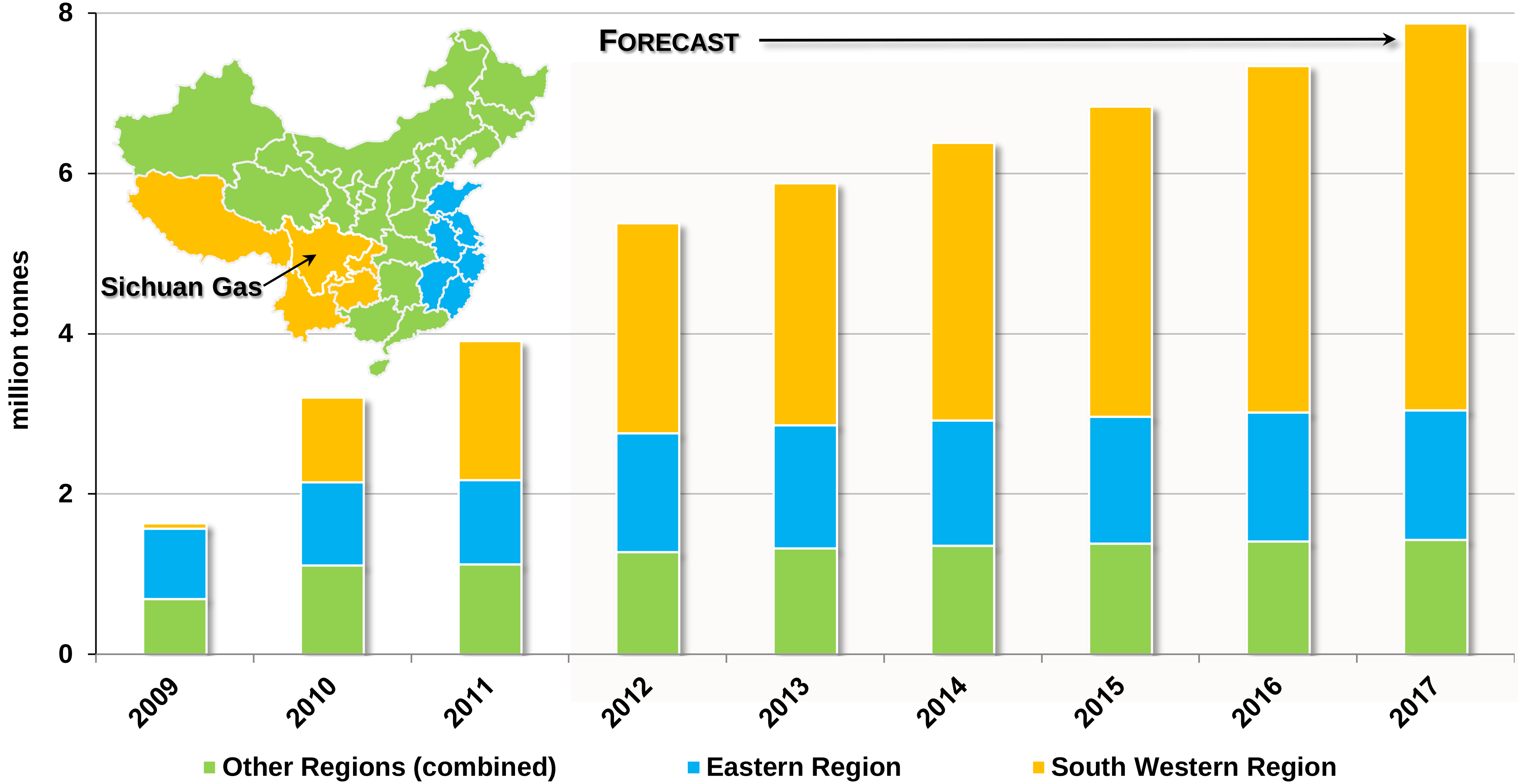
Turkmenistan

- South Yolotan on-stream (*2013)*
  - 2.6 Mt/y by *2016*



China sulphur supply, 2011 -2017

Sichuan gas fields drive sulphur production growth



DEMAND FORECAST TO 2017

Phosphates Outlook

A healthy market on the horizon?

Morocco

- OCP Jorf Phosphate Hub expansions
- Total sulphur demand 5.0 Mt/y by 2017

Saudi Arabia

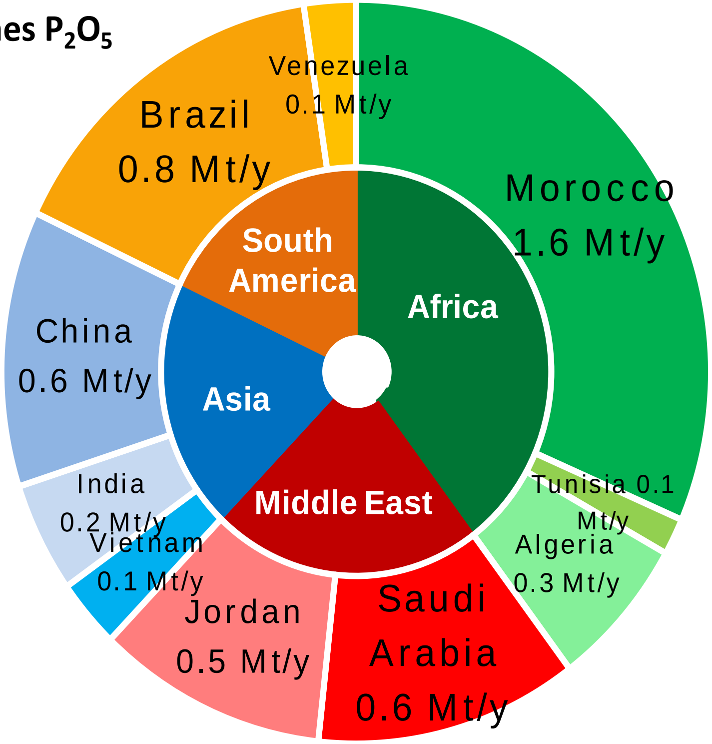
- Further expansion at Ma'aden
  - Total 1.7 Mt/y sulphur demand by 2017

Brazil

- Salitre (*2013*) 0.3 Mt/y sulphur demand
- Expansion at Catalao (+0.1Mt) from 2013

Phosphoric Acid Capacity Growth (2011 - 2017)

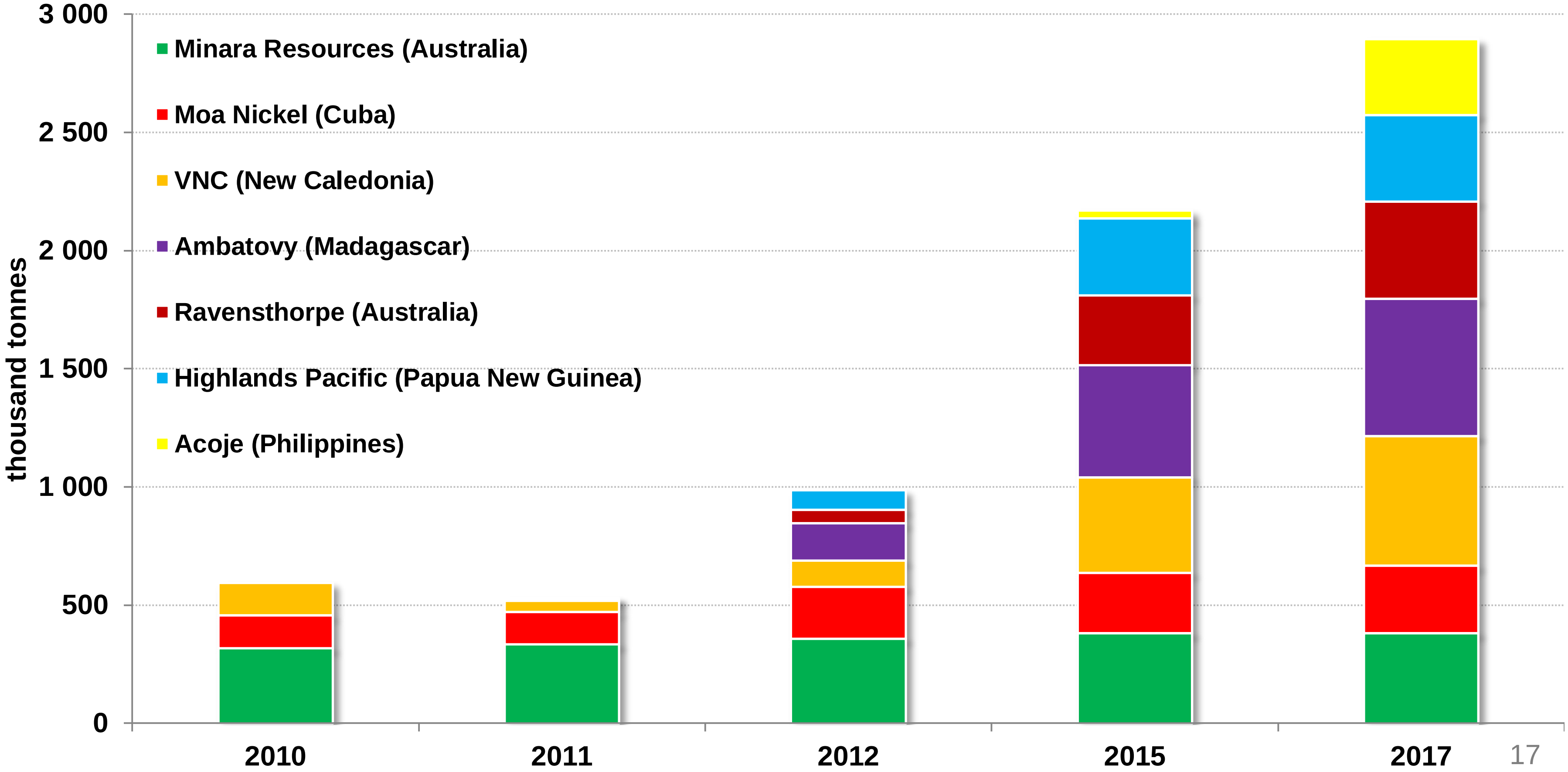
Million tonnes P_2O_5



Nickel Leaching Outlook

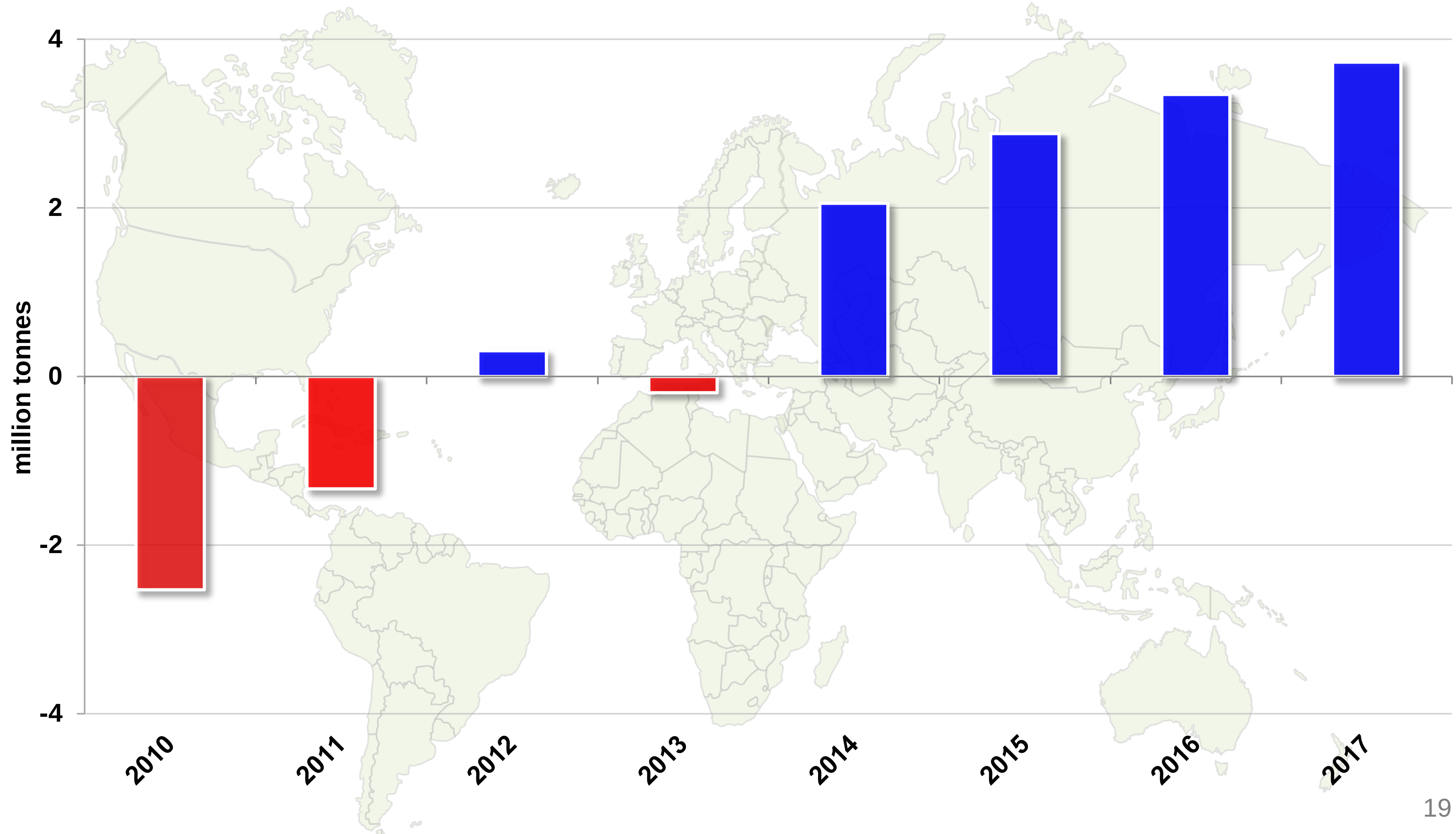
New markets for sulphur exporters

- Sulphur demand from 0.6 Mt to 3.0 Mt *(2011 → 2017)*
- Annual nickel leach demand growth **~0.4Mt/y** vs. annual sulphur supply growth **~4.0Mt/y**



Sulphur Balance to 2017

Global Sulphur Balance 2010 - 2017



Conclusions

Global oversupply is coming; can demand catch up?

Global Market

- Supply growth to outpace demand growth
  - New production dominated by Middle East and FSU
  - Delays less likely as large projects move closer to commissioning

- Demand growth
  - Phosphate demand will recover from 2013
  - Nickel leaching demand is strong but growth is not unlimited

- Sulphur balance will move into surplus
  - Producers will need to withhold product from the market
  - But which producers will act?

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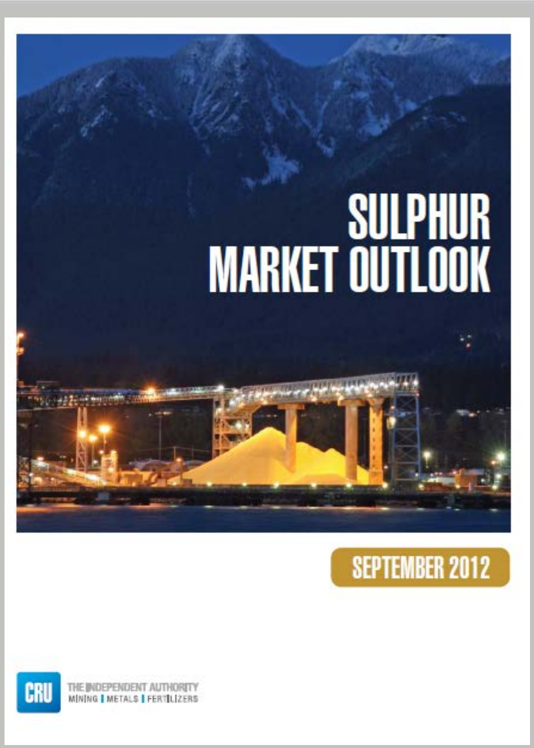

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