Iran Sulfuric Acid Market

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Tehran, Iran

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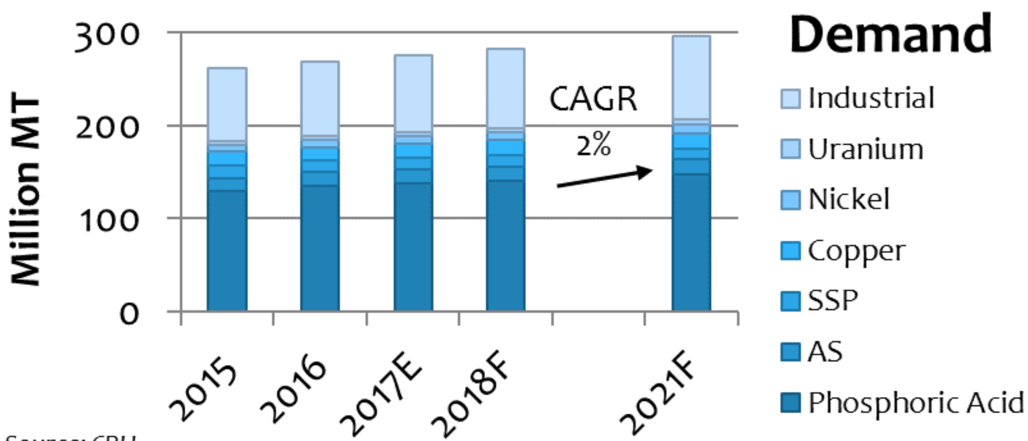
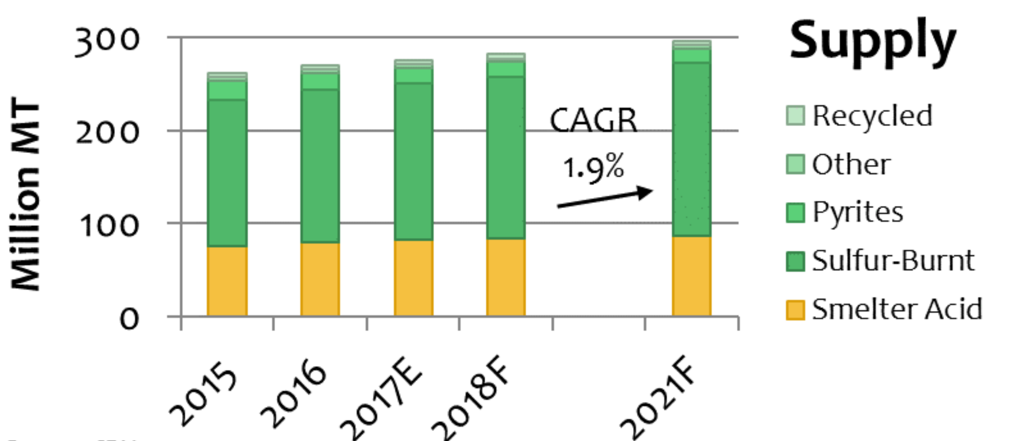
Global Market – Supply & Demand



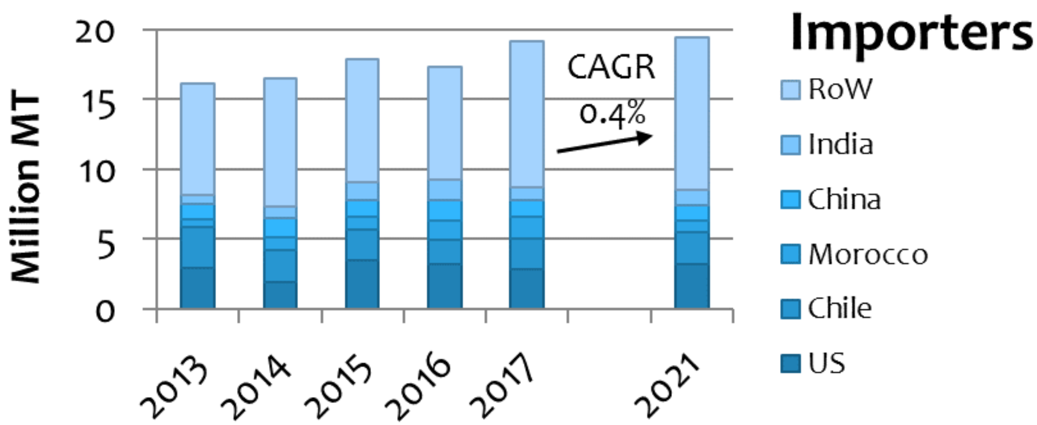
Source: CRU



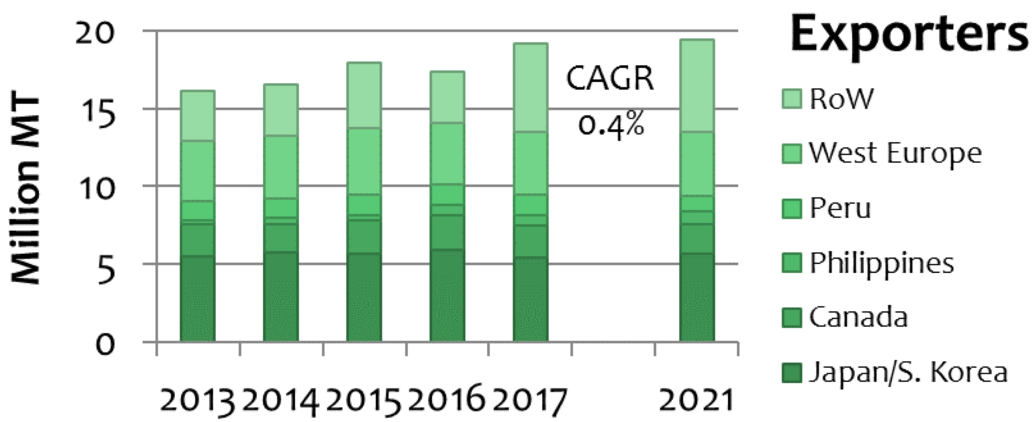
Source: CRU

- Global acid demand is forecast to reach over 296 m tonnes by 2021 that phosphoric acid has the most contribution.
- Sulphur-burnt acid supply growth is focused in phosphate-producing regions (China, KSA & Morocco) and made global acid supply grow about 21 m tonnes by 2021.
- Smelter acid production is about 30% of total supply with no significant change.

Global Market – Importers & Exporters



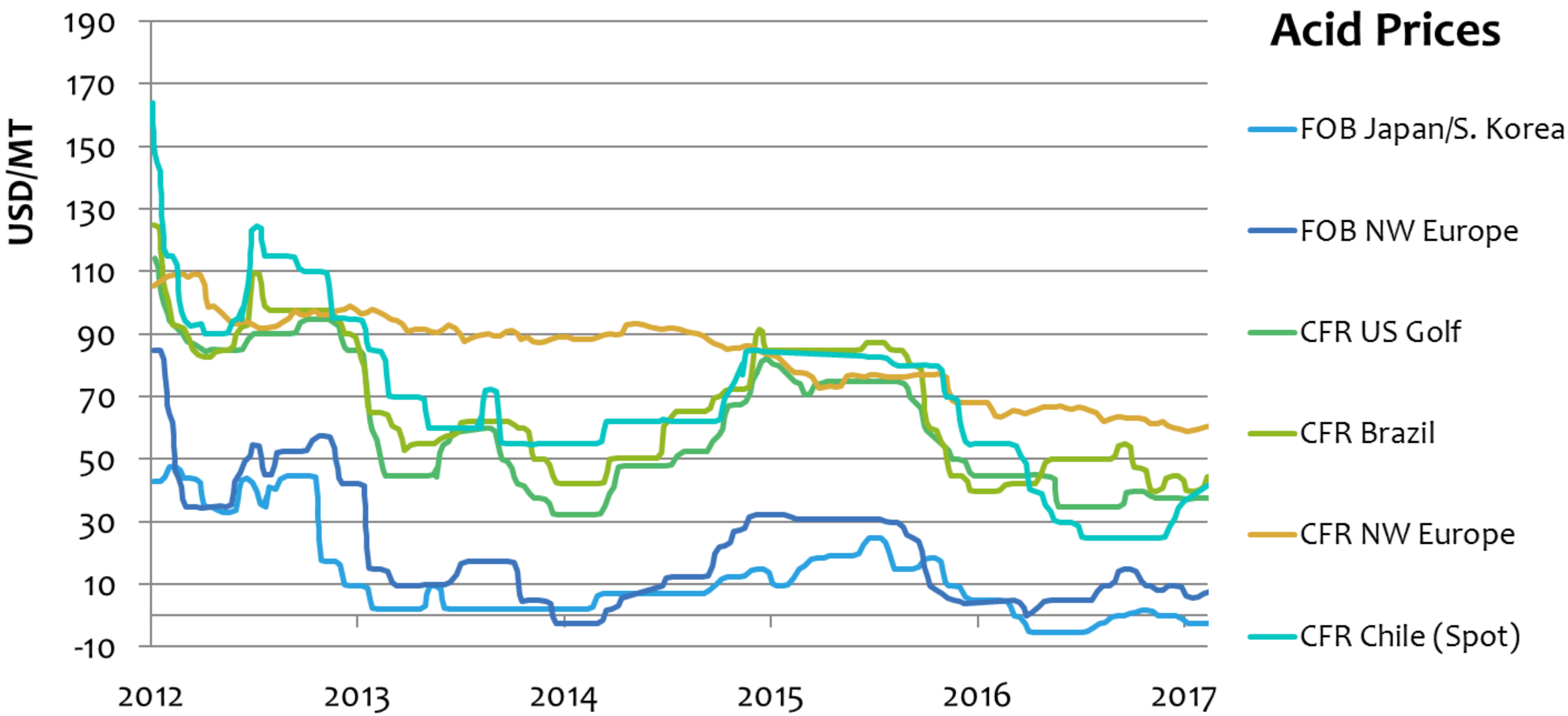
Source: UN Comtrade, CRU



Source: UN Comtrade, CRU

- The major acid importers has the average of 53% from global traded acid market.
- The major acid exporters supply about 70% of global traded acid volume.
- The global traded acid market is not expected to undergo significant growth, continuing recent trend.
- Global traded acid volume is about 7% of market size.

Global Market – Acid Prices



Source: CRU

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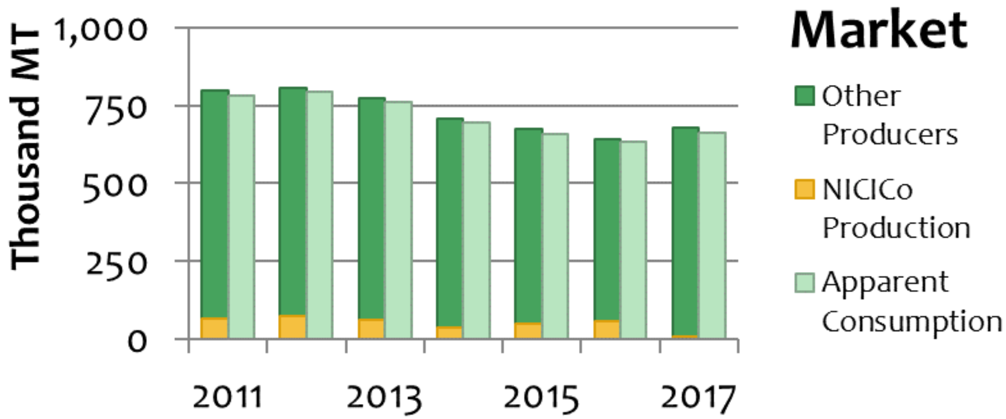
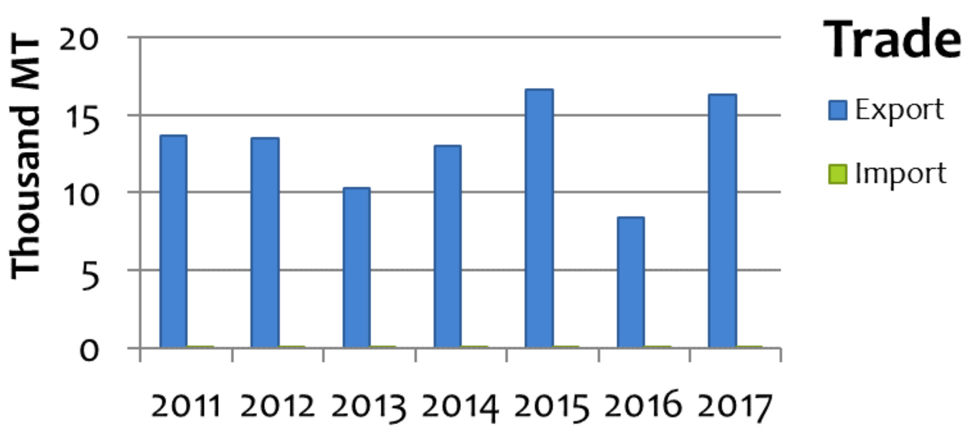
Iran Market - Recent Trend



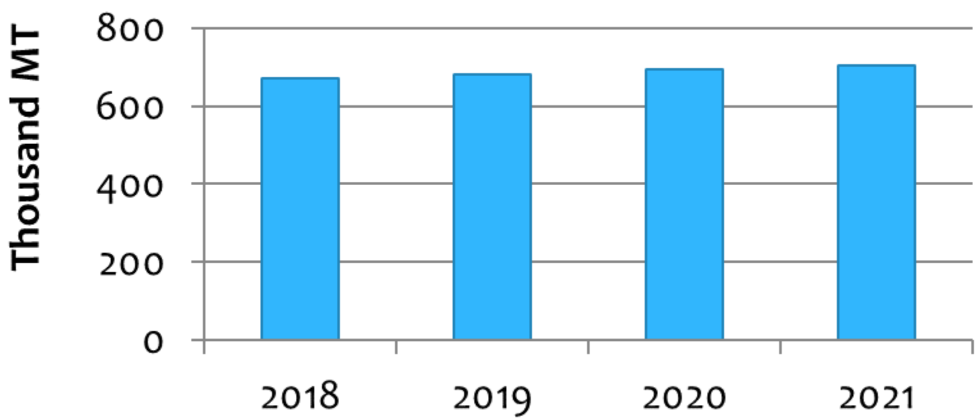
Source: NICICo, AMC



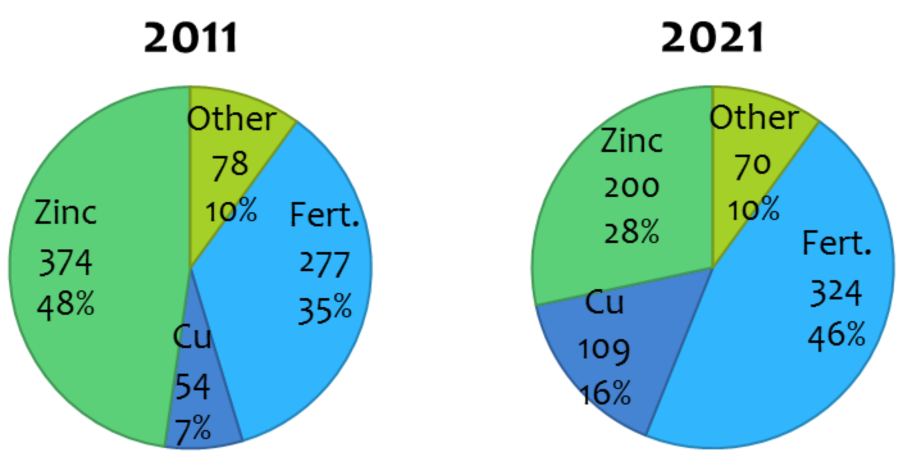
Source: Iran Customs Administration

- Iran acid demand averaged over 710 ktpa during recent years.
- NICICo acid production has small share from local supply (~7%), while commissioning acid capacities will change the game.
- Iran annually exports 13 kt acid on average, mostly to ***Iraq***, ***Azerbaijan*** and ***Armenia***, with negligible import volume of less than 50 tonnes per year.

Iran Market - Outlook



Source: NICICo, AMC

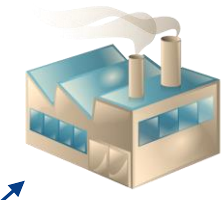


Source: NICICo, AMC

- Acid demand in Iran market can grow in the medium-term outlook if fertilizers sector drive the market.
- The biggest acid consumer in Iran market is base metal production which been forecast to decrease by 11 percent points making room for fertilizers.

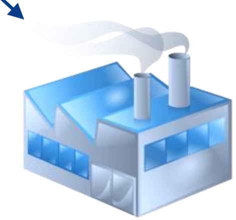
Iran Market – NICICo Acid Plants

Commissioning NICICo acid plants including one brownfield and two greenfield projects will indeed boost market supply by three times – i.e. *big market surplus.*



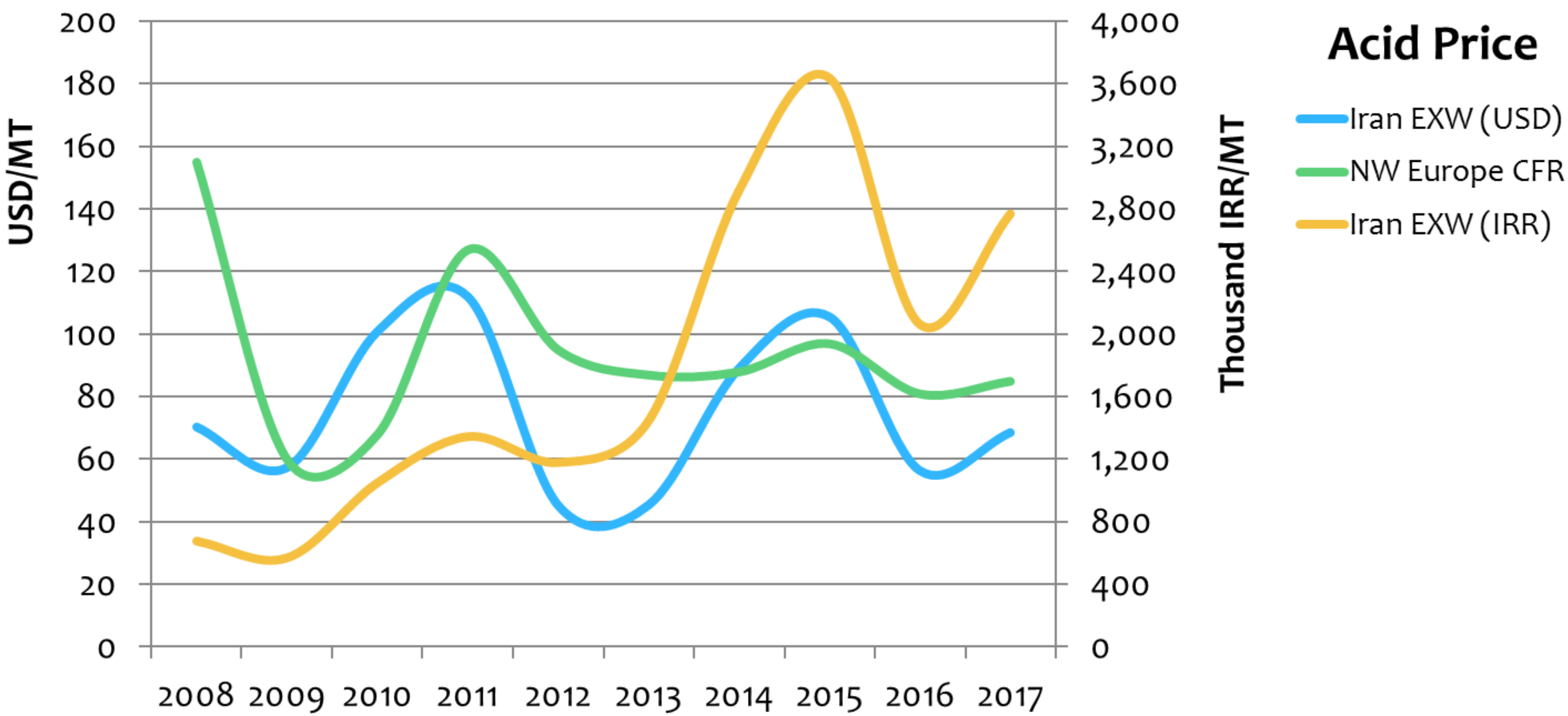
- 300 ktpa
- Brownfield
- Sarcheshmeh

- 600 ktpa
- Greenfield
- Sarcheshmeh



- 600 ktpa
- Greenfield
- Khatoon-Abad

Iran Market – Acid Prices



Source: CRU, AMC, IME

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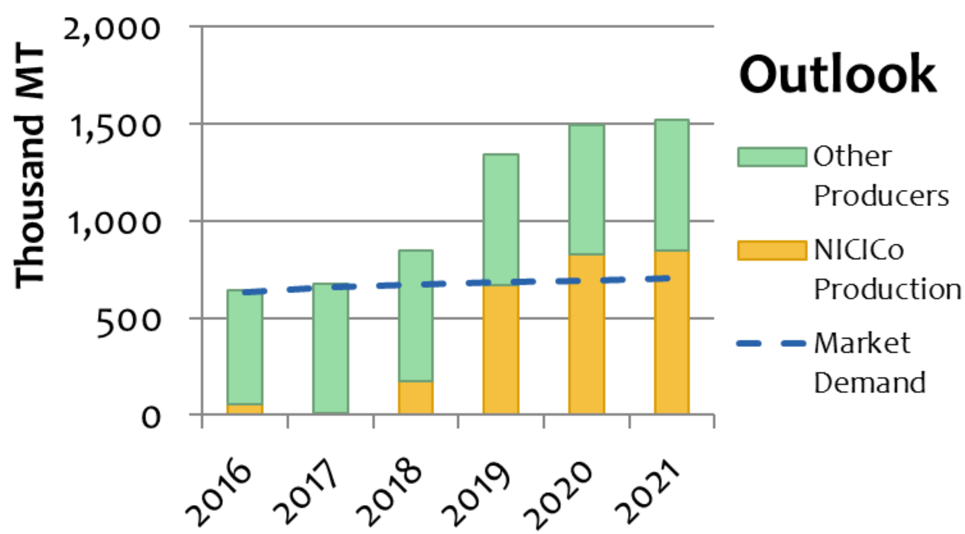
The Challenge: Market Surplus



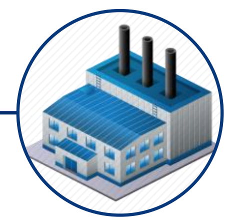
Source: NICICo, AMC

Acid market will turn into ***surplus*** in the near future due to gradual increase in NICICo acid production – coming acid plants online.

Joining with Existing Downstream Operations

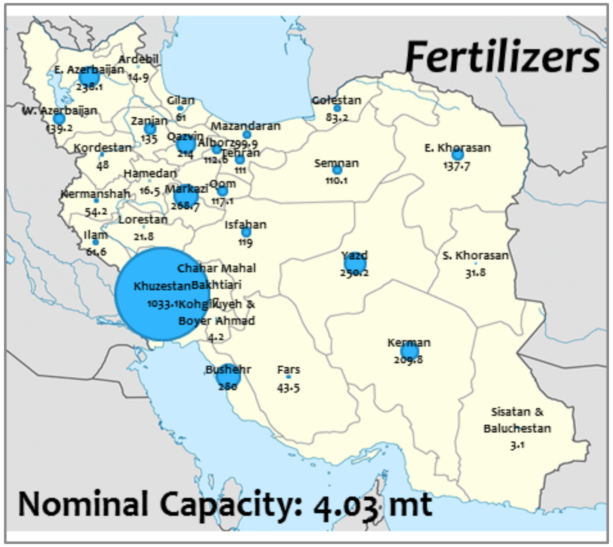
Export

Selling to local market

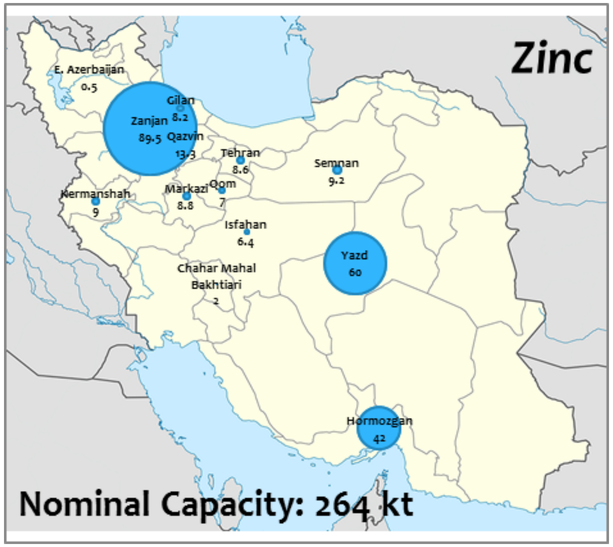


Establishing Downstream Capacity

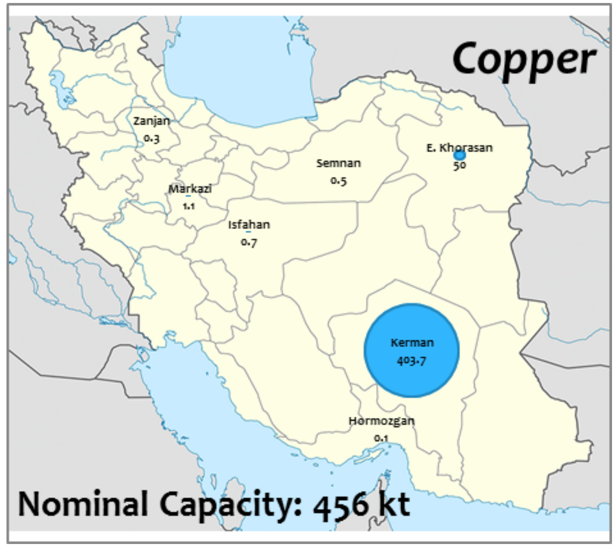
Joining with Existing Operations



Source: MIMT 2017



Source: MIMT 2017



Source: MIMT 2017

- Biggest sulfuric acid consumer industry in Iran is base metals hydro-metallurgy sector, especially ***zinc***. Note that the oxide minerals of zinc in Iran is approaching to its end, so this demand will be decrease.
- Moreover, Iran has around ***46 million ha*** agriculture area which needs fertilizers. Currently, Iran phosphate fertilizers production can meet ~50% of demand. Supply is about ***250 thousand tonnes***.

Shipment – Either Local or Export

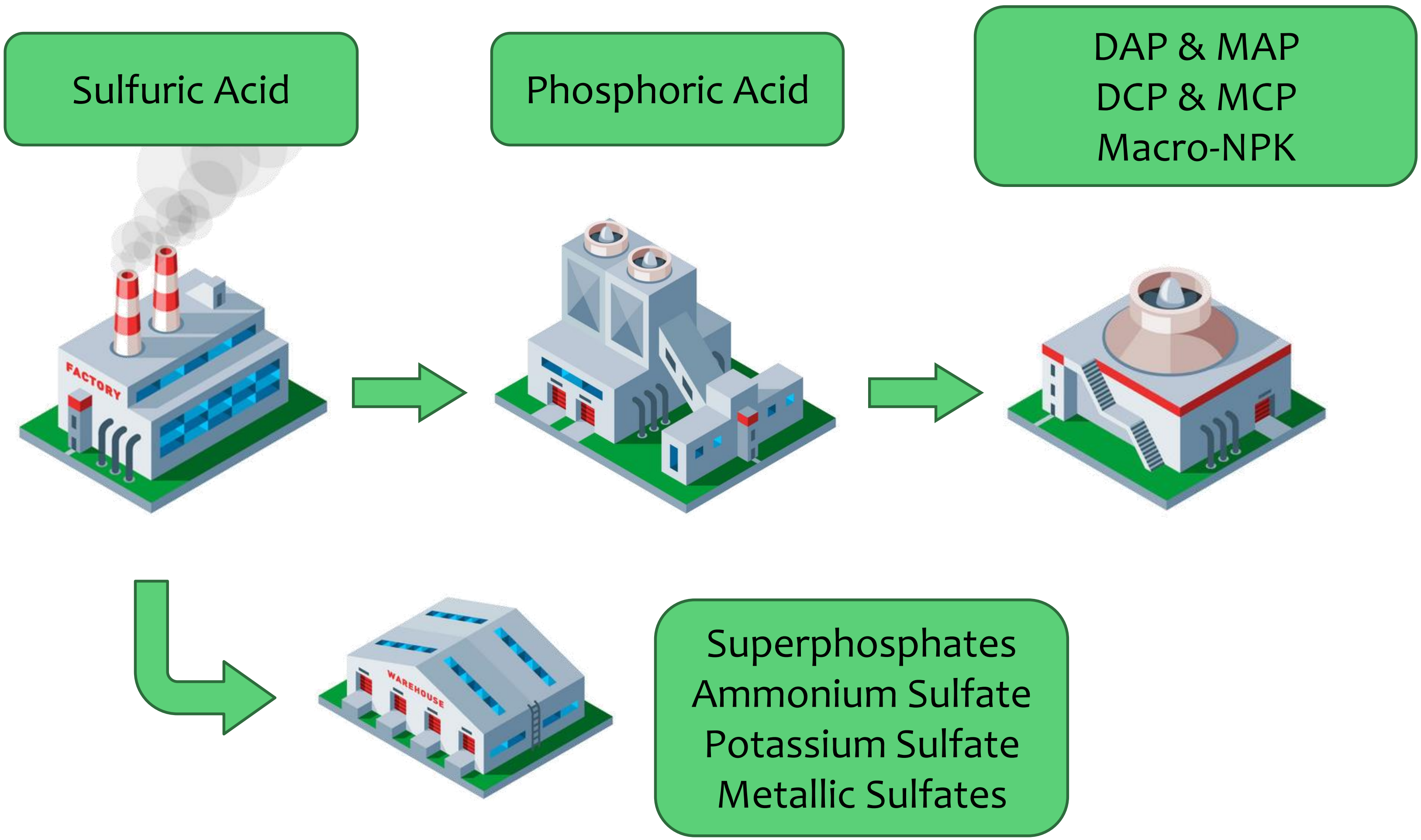
Local

- Need for appropriate infrastructure, either rail or road
- Overcapacity & oversupplied market
- Impact on the supply side of the market mostly not-obligatory production

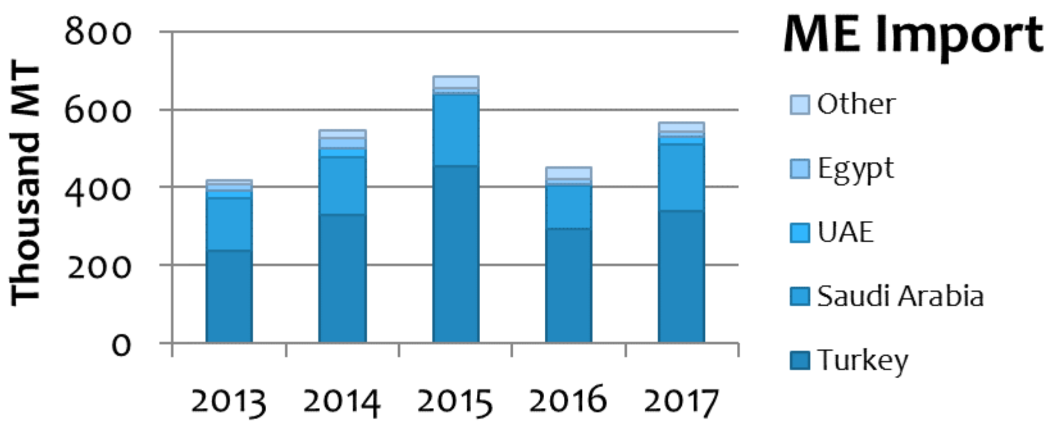
Export

- Need for required infrastructure in sea ports
- High price in comparison with competitors
- Need for experience and relations
- Imposing new US sanction on Nov. 4th

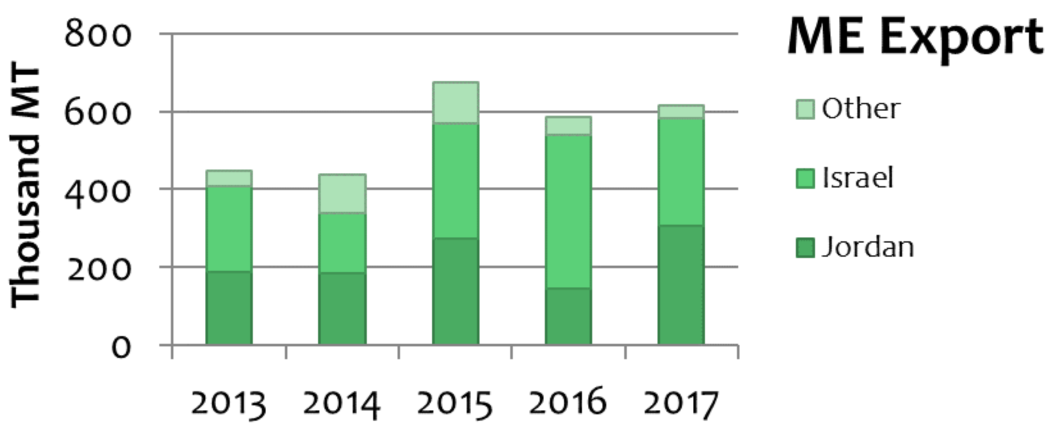
Establishing New Capacity



Phosphoric Acid – Good Option



Source: UN Comtrade, Iran Customs Administration



Source: UN Comtrade, Iran Customs Administration

- Phosphoric acid capacity in Iran is **over 650 kt**, which somehow meet local market demand.
- During last 5 years, ME import volume is averaged ***530 kt*** per year, mostly ***Turkey*** and ***KSA***.
- Major exporters in ME are ***Jordan*** and ***Israel***
- Worth noting ***India*** and ***Pakistan*** annually imports ***over 2,200 and 340 kt*** respectively.

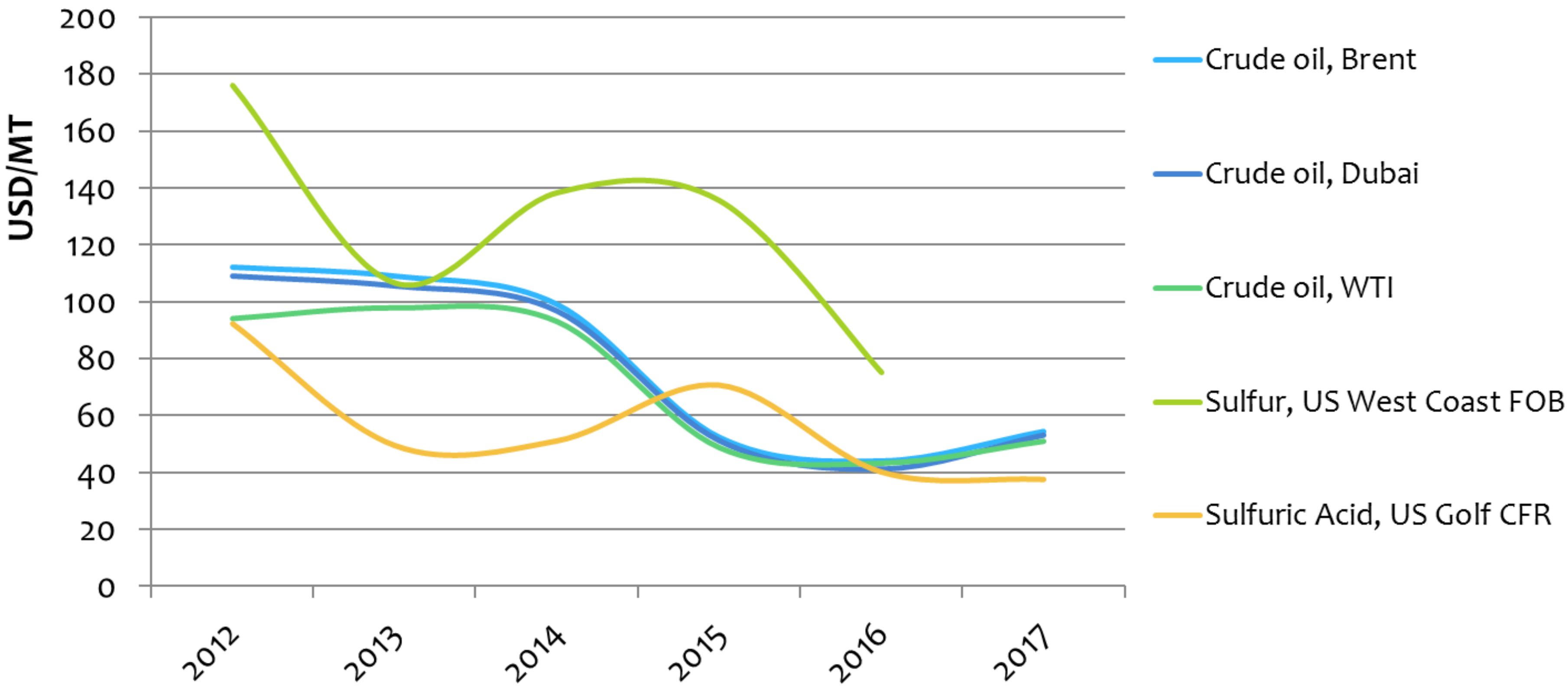
Conclusion

1. Smelter acid production share
   Global: 30%   Local: 7% goes to over 56% in near future
2. Two features of local market
   Overcapacity (oversupply) & Downside risk to zinc sector demand
3. Iran acid market surplus will reach over 800 kt by 2021
4. NICICo's approaches:
   Creating market for acid surplus & Shipment to foreign potential buyers
5. Discussion panel on Sulfuric Acid Market

Thank you

for your attention!

Additional Data – Prices



Source: World Bank, CRU, Inter-Chem

Sulphur- Acid price ratio

The diagram below illustrates the price ratio between sulphuric acid and sulphur in the USA. If the acid price was based entirely on its sulphur content, it would sell (per tonne of product) for approximately 33% of the price of a tonne of sulphur. In practice, sulphuric acid usually trades above this theoretical mark. For example between 2002 and 2009, the price of acid was on average above 50% of the price of a tonne of sulphur. In recent years, sulphuric acid prices have approached the theoretical levels, in CRU's view, this illustrates that sulphur prices are too high relative to acid. CRU does not consider that the erosion of the sulphuric acid price premium is sustainable and that sulphur prices will come back in line with historical norms.