

ASIAPHOS

Corporate Presentation



June 2017

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- Unaudited financial statements announcement of AsiaPhos Limited for 4Q16 and financial year ended 31 December 2016, dated [20 Feb 2017](#) ; and [1Q17 results dated 26 April 2017](#)
- Audited financial statements announcement of AsiaPhos Limited for the full year ended 31 December 2016, dated [31 March 2017](#) / [Annual Report FY2016](#)
- Offer document of AsiaPhos Limited dated 25 September 2013 (the "[Offer Document](#)")

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- Resource Tax Reform (Sichuan Gov’t announcement)
- [Electricity Pricing Reforms](#)

Financial Highlights

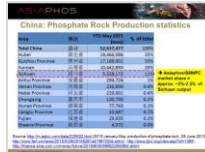
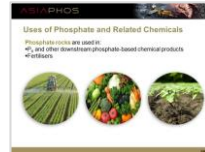
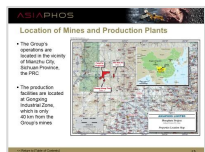
- Income Statement Highlights
- Revenue: Upstream / Downstream Segment
- Balance Sheet

About Phosphate

- Why Phosphate? Essential to Life / No Substitutes
- Uses of Phosphate and Related Chemicals
- [Potential demand growth \(Electric Vehicles / Battery market\)](#)

Further Reading

- Market Report: China adapts to ‘new normal’ of dwindling high grade phosphate reserves
- Electricity pricing reforms
- China: Phosphate Rock Production statistics
- “Favourable policies boost phosphorus industry in China” (Jan 2015)
- Phosphorus ore listed as strategic mineral resource in China (Dec 2016)
- “Among Volatile Mining plays, analysts prefer GEO Energy, GEAR, AsiaPhos” (The Edge, 2017-05-29)



“2 minute ‘What’s New’ extract”

Key messages 重要信息

1. After eventful year (G20 Summit and Accident), our strategy to build up and diversify customer base is starting to bear fruit.
2. Continued limited production of P4 in 1Q2017, to service our enlarged customer base
3. 1st time since our IPO: Profitable 1Q / positive operating cashflows
4. Stronger Q2 is also expected because of resumption of normal production of P4 and healthy order book with higher prices than in 1Q. We will seek to capitalise on opportunities (as some P4 producers in other PRC provinces are shut for inspections).
5. Strategy will continue to evolve to further unlock the value inherent in our business. Refer to MOUs with **Mianyang Aostar/GilmingXing & Lonon Chemicals** (announced March 2017)
6. Will also develop the export market and capitalise on the cooperation with **QilmingXing** on trading their chemicals
7. Exploring with strategic partners to further integrate horizontally and vertically. (Expected demand growth from agricultural black phosphorus/ electric vehicles & LFP/PC4 battery market)
8. Successful rights-cum-warrants issue will reduce reliance on financing from Chinese Banks and also reduce/remove constraints that hold back growth.

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Our Chemical Production Operations & sector growth opportunities

- Our downstream chemical operations = Focus on **technical/ industrial market** (rather than directly-producing Fertiliser chemicals, e.g. MAP/DAP)
- **Recent MOUs signed** will enable the following benefits for AsiaPhos:
 - Faster revenue generation / inventory turnover cycle
 - Access to surplus rocks for P4 production continuity & possible trading (sale & purchase) opportunities
 - Potential access to cheaper electricity
- Exploring with strategic partners to establish complementary businesses, both horizontally and vertically
- High-level overview of global phosphate market

Fertiliser market/ other agriculture	Industrial / Non-Fertiliser market
• Approx. 35-50% of world P rock goes to Fertiliser Feed	• ~10-15% of P rock market
• Demand growth rate approx. 3.5% CAGR (food story, population growth, land scarcity, etc.) may be subject to price-cap/ subsidies (potentially narrower margins)	• Higher growth rate for some industrial markets, e.g. electric vehicles battery (CAGR 20%+), flame retardants, Slack-P (new graphene?) still in development phase
• Requires significant scale / More complex environmental issues (e.g. phosphate-gypsum), China over-capacity issues	• Complex technical requirements / High capex / regulations & licence constraints (e.g. PCL3)

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Share Price vs NAV

NAV Premium to NAV

Company	NAV (USD)	Share Price (USD)	Premium to NAV
AsiaPhos	2.15	0.84	94.2%
Alliance Mineral Resources	0.385	0.68	19.9%
Anchor Resources	0.107	0.26	46.4%
Natural Gas Resources	0.028	0.18	91.2%
GWBC Goldfields	0.020	0.02	60.0%
OCOP Resources	0.033	0.23	59.3%
Geo Energy Resources	0.255	0.43	33.0%
Galaxy Energy & Resources	0.070	0.10	11.6%
Resource Prime Group	0.007	0.007	32.4%
Wilbur Resources	0.013	0.013	-

• Compared against a list of SGX-listed mining companies, **AsiaPhos** is currently trading at the lowest premium to NAV, at 3.5%.

• **AsiaPhos** is the only phosphate and phosphate chemical producer listed on SGX.

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Benefits from Electricity Policy Reforms in China

Lower wholesale electricity prices

Comments from AsiaPhos perspective:

- Electricity represents a major component (>50%) of our P4 production cost.
- Any meaningful electricity pricing reform in China will directly contribute to lower P4 production costs.
- Our P4 plant is relatively newer (commenced commercial production during 2014) and designed to be more efficient than comparably older P4 plants.

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Revenue Performance – 1Q2017

Total Revenue (\$m)

Fiscal Year	Total Revenue (\$m)	Q1 '17 vs Q1 '16
FY2012	4.9	-
FY2013	8.5	-
FY2014	23.8	-
FY2015	44.5	-
FY2016	34.3	-
1Q2017	12.1	+51.2% vs Q1 2016

Change in business strategy drove top-line improvement in 1Q2017

- 1Q2017 revenue increased 51.2% y-o-y due to:
 - More higher quality rocks instead of being used for P₄ production
 - Rocks for P₄ production secured from third party supplier
- The Group expects to resume full operating capacity for the downstream segment in 2Q2017, following production disruptions in FY2016

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Cash flow statement

	2017	2016
Cash flows from operating activities:		
Profit before taxation	532	391
Adjustments for:		
Depreciation	407	360
Gain on disposal of property, plant and equipment	(11)	(1)
Financial expenses	281	243
Investment income	(120)	(107)
Change in non-current assets	(102)	(272)
Change in current assets	(37)	(24)
Income tax expense	(12)	(2)
Interest/Dividend income	2,138	(1,128)
Share of profit/loss of associates	1,289	(854)
Share of profit/loss of joint ventures	(1,028)	(826)
Cash and cash equivalents from operations	3,595	2,066
Interest received	6	24
Dividend received	298	19
Finance expense	(14)	(22)
Net cash flow used/ generated from operating activities	3,775	2,087
Net cash flow used/ generated by investing activities:		
Proceeds from rights issue	4,138	—
Proceeds from bank borrowings	1,718	—
Proceeds from other financing operations	—	—
Proceeds from non-current asset disposals	(1,420)	(85)
Proceeds from current asset disposals	271	—
Proceeds from disposal of subsidiaries	(487)	—
Proceeds from bank loan	(487)	2,144
Net cash flow used/ generated from investing activities	3,033	2,059
Net cash flow used/ generated by financing activities:		
Repayment for financing operations	(254)	(1,100)
Proceeds from financing operations	—	—
Proceeds from government grant	1	39
Cash and cash equivalents from financing operations	(253)	(1,061)
Net cash flow used/ generated by financing activities	(253)	(1,061)
Change in cash and cash equivalents	3,269	1,075
Effect of exchange rate changes on cash and cash equivalents	(25)	(5)
Change in cash and cash equivalents	3,244	1,070

Cash Flow & Debt Management

- **December 2016:** Announced Rights cum Warrants Issue.
- **March 2017:** Successful completion of Rights cum Warrants Issue. Early redemption of 2016 RPS (maturity, Jan 2021).

With the completion of the redemption of the 2016 RPS, the Group is expected to benefit from lower borrowing costs in FY2017.

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Recent MOUs signed = Benefits from Fine-tuning the Business Strategy

Third Party Strategic Partners

- Purchases lower quality rocks from partner
- Sells higher quality rocks to partner

ASIA PHOS

- Faster revenue / inventory turnover cycle
- Improve cash flows
- Unlock value of inventory of high quality phosphate rocks which fetch higher prices

Channels lower quality rocks into P₄ production

P₄ Production

P₄ Market

Previous approach (FY2016), i.e. Retention of own rocks for P₄ production = Took longer time for revenue/cash flow generation (Mine the rocks → Produce P₄ → Sell P₄ → Collect payment)

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Corporate History and Recent Developments

Recent developments:

- **Nov 2016:** MOU with QilmingXing / Mianyang Aostar
- **March 2017:** Renewal of mining right for Mine #1 (COY)
- **March 2017:** Successful rights-cum-warrants issue. Positions the company for continued growth momentum.
- **March 2017:** Signed MOU agreement with QilmingXing / Mianyang Aostar and Lonon Chemicals, for sale & purchase of phosphate rocks
- **Ongoing:** Application for conversion of Mine #1 (COY) exploration right, into a mining right. This would increase COY's approved production scale to potentially 300-400,000 tonnes/year
- Exploring with strategic partners to establish complementary businesses, both horizontally and vertically

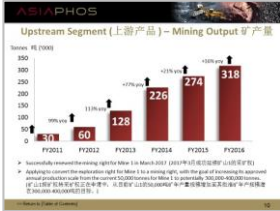
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Click on the individual ‘thumbnails’ / shortcuts, to review the respective full-size slides

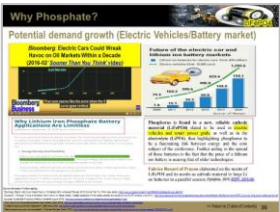


Key messages 重要信息

1. After eventful year (G20 Summit and Accident), our strategy to build up and diversify customer base is starting to bear fruit.
2. [Continued limited production of P4 in 1Q2017](#), to clear backlog of orders, build up sufficient inventory and to take advantage of rising selling prices. [Electricity policy](#) = Potential upside.
3. 1st time since our IPO: [Profitable 1Q](#) / [positive operating cashflows](#).
4. [Increase in P4 output](#) is also expected following resumption of normal production of P4 by end-June 2017 with expected higher average selling prices. We will seek to capitalise on opportunities (as some P4 producers in other PRC provinces are shut for inspections).
5. Strategy will continue to evolve to further unlock the value inherent in our business. Refer to [MOUs with Mianyang Aostar/QiMingXing & Lomon Chemicals \(announced March 2017\)](#).
6. Will also develop the export market and capitalise on the [cooperation with QiMingXing](#) on trading their chemicals
7. Exploring with strategic partners to further integrate horizontally and vertically, in view of the [potential market demand growth](#), from agriculture/ black phosphorous/ electric vehicles & LiFePO4 battery market)
8. [Successful Rights cum Warrants issue](#) will reduce reliance on financing from PRC banks and also reduce/remove constraints that hold back growth.

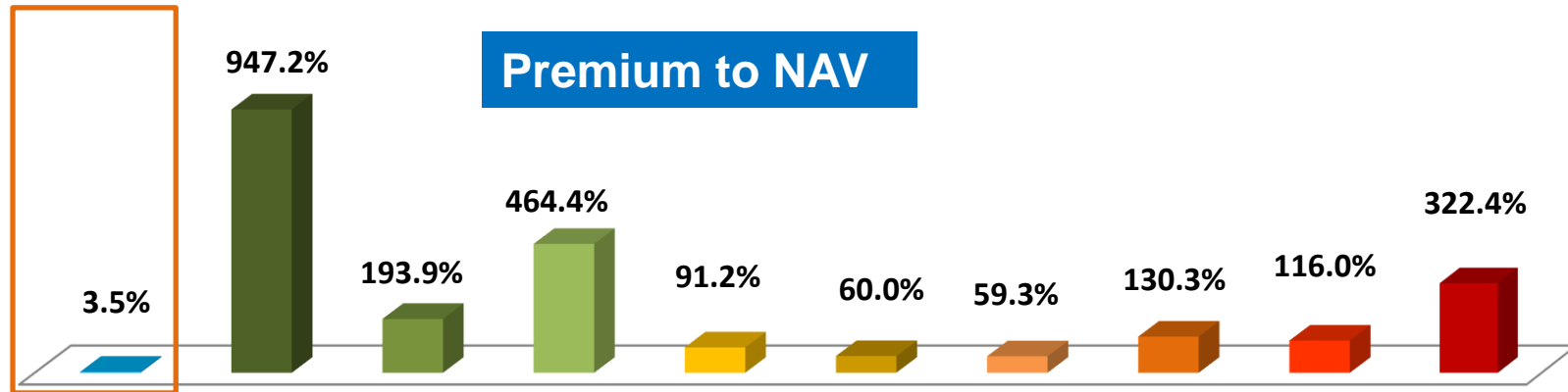


Item	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
Operating Cash Flow
Financing Cash Flow





Share Price vs NAV



	AsiaPhos	Alliance Mineral	Anchor Resources	Blackgold Natural Resources	CNMC Goldmine	GCCP Resources	Geo Energy Resources	Golden Energy & Resources	Resources Prima Group	Wilton Resources
NAV (SGD)	0.088	0.034	0.030	0.023	0.136	0.023	0.160	0.189	0.013	0.016
Share Price (SGD)	0.091	0.355	0.087	0.127	0.26	0.036	0.255	0.435	0.027	0.068
Mkt Cap (S\$m)	92.5	170.7	27.3	103.9	105.9	42.1	303.1	1,023.6	49.5	165.7
Commodity	Phosphate	Lithium, Tantalum	Gold	Thermal Coal	Gold	Limestone	Thermal Coal	Thermal Coal	Coal	Coal

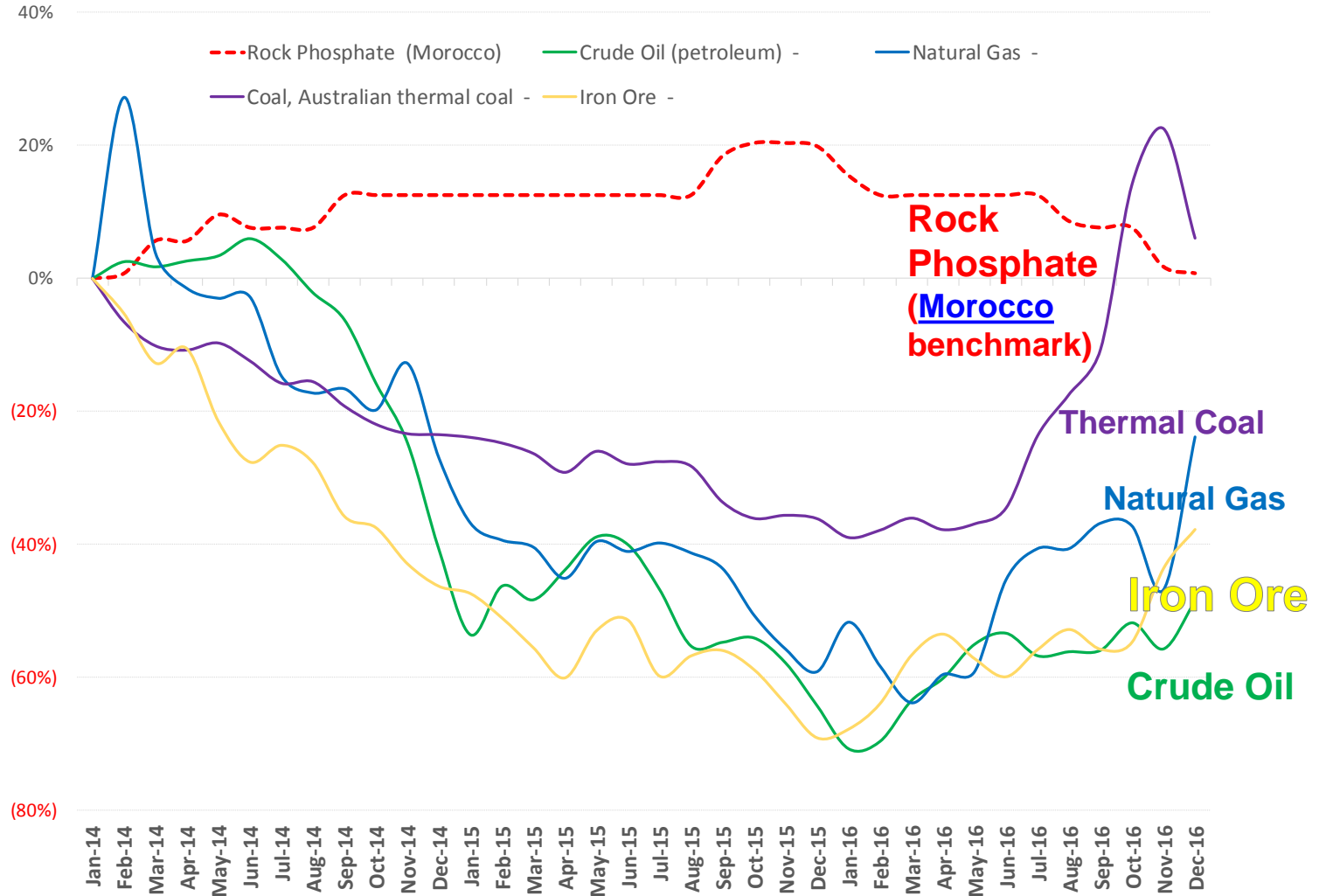
- Compared against a list of SGX-listed mining companies, **AsiaPhos** is currently trading at the lowest premium to NAV, at **3.5%**
- AsiaPhos is the only phosphate and phosphate chemical producer listed on SGX

Source Data: <http://www.shareinvestor.com> ; Based on NAV and share prices as at 1 June 2017. NAV = "Based on latest results announcement (Full Year, Half Year or Interim), adjusted for carrying value of "Other Share Capital", illustrative financial effects of corporate actions (if applicable) and the current number of shares."



Relative Commodity Price Performance

Rock Phosphate vs Other Commodities - Price Comparison vs Jan 2014 (To Dec 2016)



Source: IndexMundi and World Bank (Data extracted: 27 Feb 2017)

<http://www.indexmundi.com/commodities/?commodity=rock-phosphate&months=12&commodity=iron-ore>

Cash flow statement

	Group	
	First Quarter Ended 31	
	March	
	2017	2016
	\$'000	\$'000
Cash flows from operating activities :		
Profit/(Loss) before taxation	122	(915)
Adjustments for :		
Depreciation expenses	607	504
Gain on disposal of property, plant and equipment	-	(1)
Amortisation expenses	83	74
Interest expense	207	180
Interest income	(5)	(4)
Unrealised exchange loss/(gain)	(230)	(271)
Amortisation of deferred income	(30)	(9)
Operating profit/(loss) before working capital changes	754	(442)
(Increase)/decrease in stocks	2,195	(1,153)
(Increase)/decrease in receivables	1,510	2,624
Increase/(decrease) in payables	(1,924)	(1,795)
Cash (used in)/generated from operations	2,535	(766)
Interest received	5	4
Interest paid	(396)	(820)
Tax paid	-	(199)
Net cash flows (used in)/generated from operating activities	2,144	(1,781)
Cash flows from investing activities :		
Payments for property, plant and equipment	(574)	(1,100)
Receipt of government grant	-	58
Proceeds from disposal of property, plant and equipment	-	1
Net cash flows (used in)/generated by investing activities	(574)	(1,041)
Cash flows from financing activities :		
Net proceeds from Rights cum Warrants Issue	4,158	-
Payments of share issuance expense	(115)	(32)
Proceeds from issue of redeemable preference shares	-	4,000
Redemption of redeemable preference shares	(1,403)	(6,325)
Increase in pledged deposits	(1)	(4)
Repayment of loan due to a director	(467)	-
Proceeds from bank loan	-	2,144
Net cash flows (used in)/generated from financing activities	2,172	(217)
Net increase/(decrease) in cash and cash equivalents	3,742	(3,039)
Cash and cash equivalents at beginning of period	1,012	3,098
Effects of exchange rate changes on cash and cash equivalents	(54)	(69)
Cash and cash equivalents at end of period	4,700	(10)



Cash Flow & Debt Management

- [December 2016](#): Announced Rights cum Warrants Issue.
- [March 2017](#): Successful completion of Rights cum Warrants Issue. Early redemption of 2016 RPS (maturity: Jan 2021).

With the completion of the redemption of the 2016 RPS, the Group is expected to benefit from lower borrowing costs in FY2017.



Executive Summary / Overview (摘要)



Business started in 1996; Possesses the rights to explore and mine phosphate (since 2002), a valuable and non-renewable natural resource in Sichuan Province, the PRC (业务开始于1996年;拥有磷矿探矿权和采矿权(2002年起), 四川省, 中国。磷矿是不可再生的自然宝贵资源。)



Adopts a vertically-integrated strategy by investing in downstream processing facilities which: (通过投资于下游加工设施, 形成垂直整合的策略:)

- refine and process phosphate rocks; and (提炼和加工磷矿;和)
- produce and sell phosphate-based chemical products (生产和销售的磷酸盐产品)



Was affected by the 2008 earthquake in Wenchuan County, Sichuan Province, the PRC, and has been focused on rebuilding since (受2008年汶川地震影响, (汶川位于中国 四川省 汶川县), 专注于重建)



First mineral resources company to be listed on the SGX-ST which is solely focused on exploring and mining phosphate in the PRC

第一家矿产资源公司上市于新交所。专注于在中国境内探矿和采矿磷矿石。



SGX
SINGAPORE EXCHANGE

8:59:13



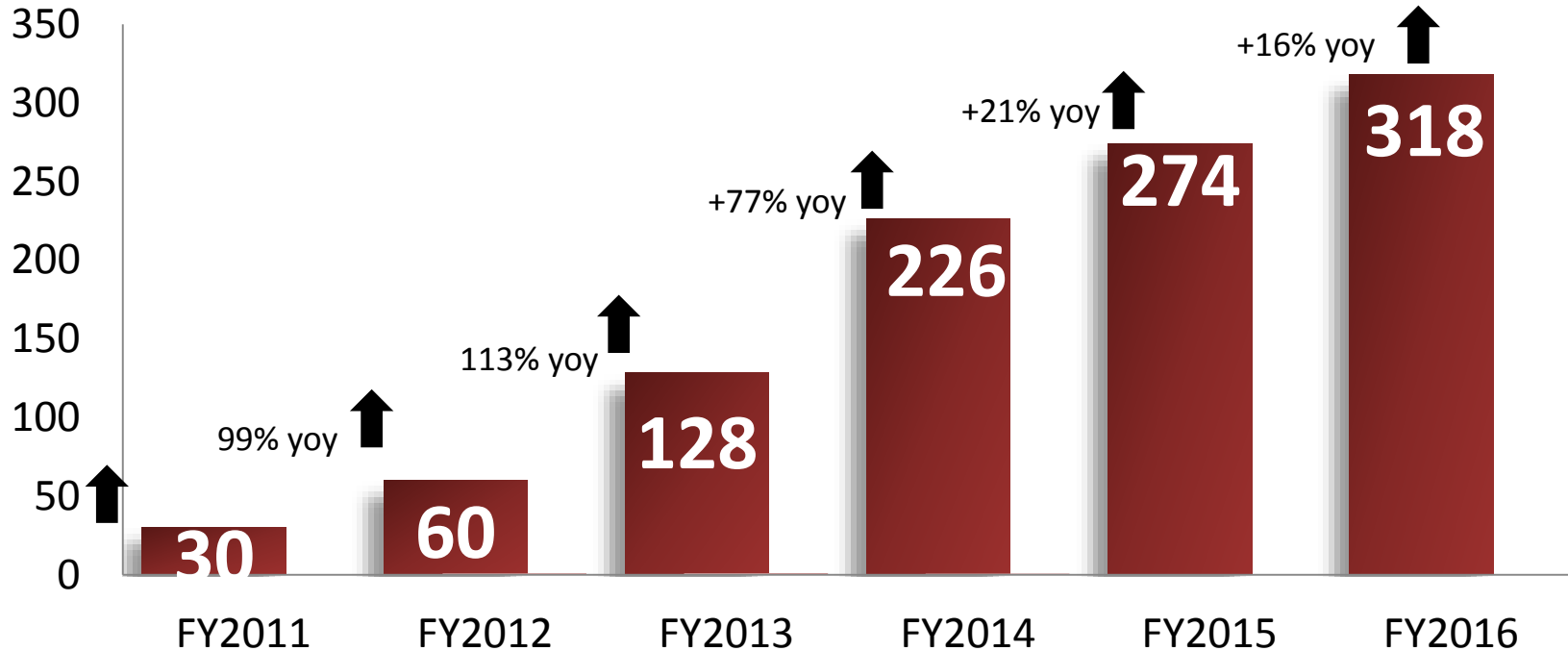
IPO (7 Oct 2013)

新交所上市 (2013年10月7日)



Upstream Segment – Mining Output

Tonnes 吨 ('000)



- Successfully renewed the mining right for Mine 1 in March 2017
- Applying to convert the exploration right for Mine 1 to a mining right, with the goal of increasing its approved annual production scale from the current 50,000 tonnes for Mine 1 to potentially 300,000-400,000 tonnes.



Our Vertically-Integrated Business Strategy

Upon completion of our Rebuilding Programme, our vertically-integrated business model will involve the following:

Mining Operations



**Phosphate
Rocks**

Mining

- Rights to explore and mine phosphate from our two mines located in Sichuan Province, the PRC

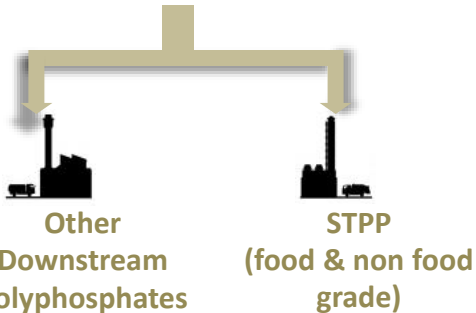
Chemical Production Operations



P₄

P₄ Processing

- Commercial production commenced in FY2014

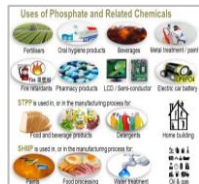


STPP and other Polyphosphate Manufacturing

- Completed relocation of one Polyphosphate/ STPP plant (and resumed commercial production) with designed capacity of 30,000 tonnes per year
- 'Phase 2' Land Use Rights: Received in FY2015 (50 years, to FY2065, area 134 畝 Mu, approx. 89,000 sq.m.). This enables further downstream phosphate chemicals manufacturing possibilities.



Our Chemical Production Operations & sector growth opportunities



- Our downstream chemical operations = Focus on technical/ industrial market (rather than directly-producing Fertiliser chemicals, e.g. MAP/DAP)

Recent MOUs signed will enable the following benefits for Asiaphos:



- **Faster revenue generation / inventory turnover cycle**
- Access to surplus rocks for P4 production continuity & possible trading (sale & purchase) opportunities
- Potential access to cheaper electricity



- Exploring with strategic partners to establish complementary businesses, both horizontally and vertically
- High-level overview of global phosphate market:

Fertiliser market/ other agriculture	Industrial / Non-Fertilizer market
<ul style="list-style-type: none"> • Approx ~85-90%* of world P-rock goes to Fertiliser/Feed 	<ul style="list-style-type: none"> • ~10-15% of P-rock market
<ul style="list-style-type: none"> • Demand growth rate approx. 3-3.5% CAGR* ('food story', population growth, land scarcity, etc); may be subject to price-caps/ subsidies (potentially narrower margins) 	<ul style="list-style-type: none"> • Higher growth rate for some industrial markets, e.g. electric vehicles/ battery (CAGR 20%+*), flame retardants; Black-P ('new graphene?') still in development-phase
<ul style="list-style-type: none"> • Requires significant scale / More complex environmental issues (e.g. phospho-gypsum); China over-capacity issues 	<ul style="list-style-type: none"> • Complex technical requirements / High capex / regulations & licence constraints (e.g. PCL3)

* Sources:

• "85% fertiliser" (ESPP, Dec 2016): <http://www.phosphorusplatform.eu/images/download/ESPP%20conference%20Phosphorus%20stewardship/Potocnik-ESPP-1-12-16.pdf>

• Agriculture/Fertiliser Phosphate Demand Growth, 2014-2019F (2015-08-05): <http://investors.mosaicco.com/Cache/1001201003.PDF?Y=&O=PDF&D=&FID=1001201003&T=&IID=4097833>

• "Lithium Iron Phosphate Battery Market Growing at 20.5% CAGR to 2020" (Sept 2016): <http://www.prnewswire.com/news-releases/lithium-iron-phosphate-battery-market-growing-at-205-cagr-to-2020-592851781.html>

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Recent MOUs signed = Benefits from Fine-tuning the Business Strategy



Third Party Strategic Partners

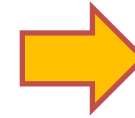
Purchases lower quality rocks from partner



Sells higher quality rocks to partner



- Faster revenue generation / inventory turnover cycle



- Improve cash flows

Channels lower quality rocks into P₄ production



- Unlock value of inventory of high quality phosphate rocks which fetch higher prices



P₄ Production

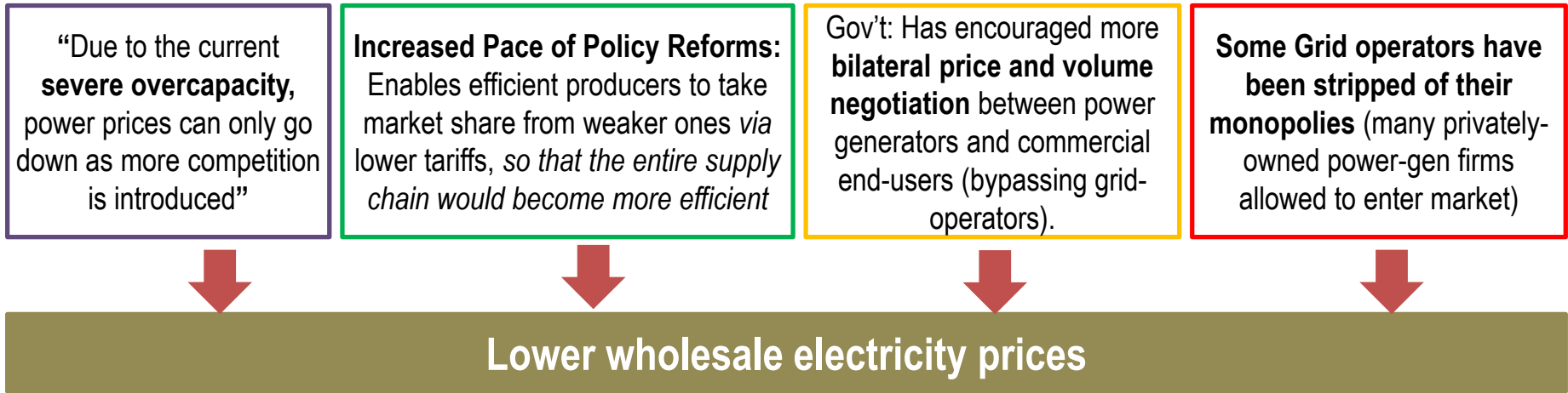


P₄ Market

Previous approach (FY2016), i.e.
Retention of own rocks for P₄ production =
Took longer time for revenue/ cash flow generation (Mine the rocks → Produce P₄ → Sell P₄ → Collect payment)



Benefits from Electricity Policy Reforms in China



Comments from Asiaphos perspective:

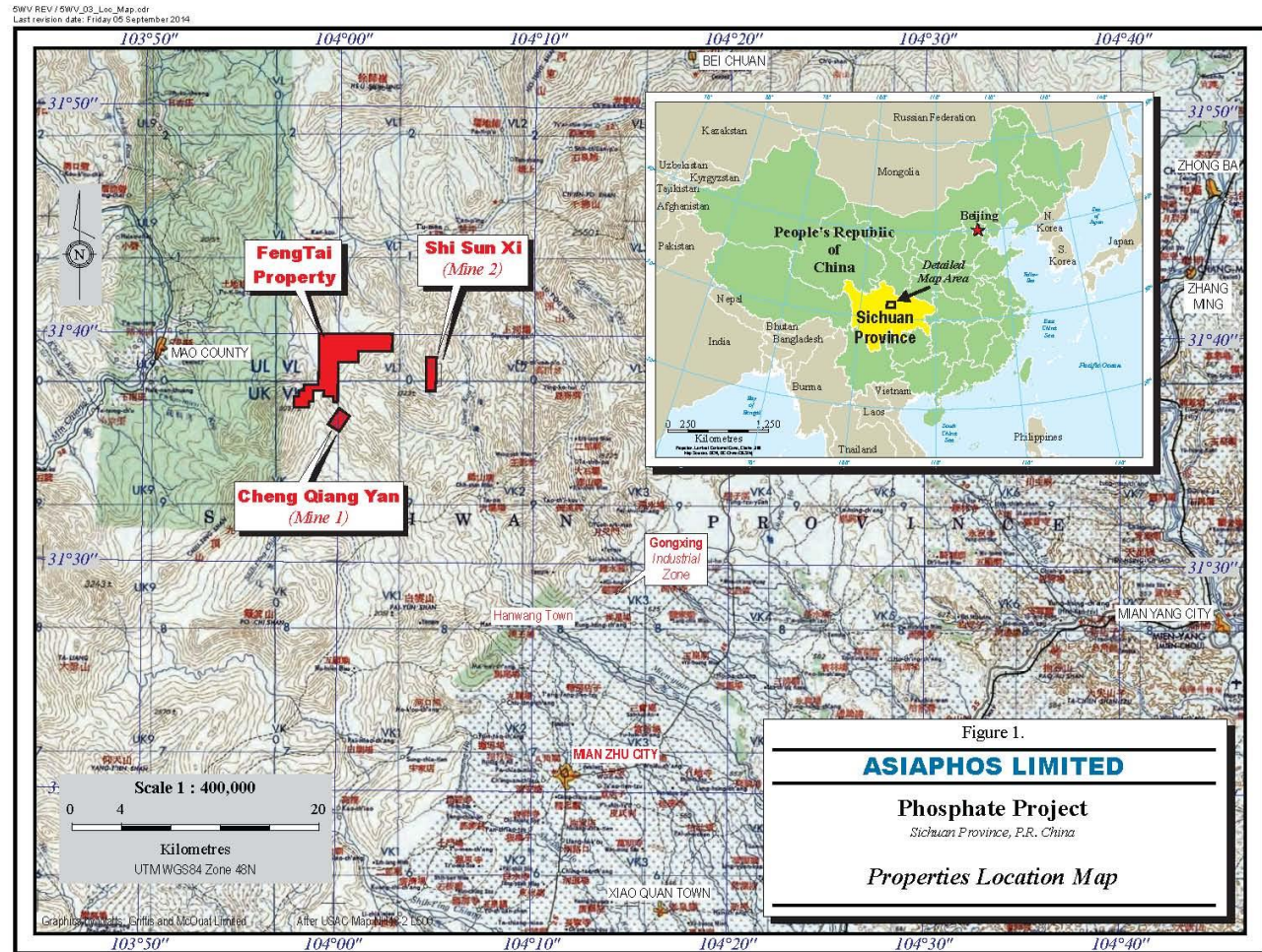
- Electricity represents a major component (>50%) of our P4 production cost.
- Any meaningful electricity pricing reform in China will directly contribute to lower P4 production costs.
- Our P4 plant is relatively newer (commenced commercial production during 2014) and designed to be more efficient than comparably older P4 plants.

Source: “China presses ahead with power pricing reform”; 12 Sept 2016, *South China Morning Post*: <http://www.scmp.com/business/companies/article/2018410/china-presses-ahead-power-pricing-reform>



Location of Mines and Production Plants

- The Group's operations are located in the vicinity of Mianzhu City, Sichuan Province, the PRC
- The production facilities are located at Gongxing Industrial Zone, which is only 40 km from the Group's mines





Gongxing Production Facilities

- Rebuilding programme in Gongxing Industrial Zone, Sichuan Province, the PRC
 - Phase1 : New site of approximately 54,863 m²; land use rights obtained
 - Designed to withstand earthquakes of up to 7.0 on Richter scale
- Phase 1 completed :
 - Two new P₄ furnaces, each with designed annual capacity of 10,000 tonnes
 - Commercial production of P₄ commenced in May 2014
- Receipt of Land Use Rights for Phase 2 Land
 - Announced: 12 March 2015





Photos: From Mines to Factory (照片: 从矿山到工厂)



Tramway system at Mines
矿山轨道车系统



From Mine to Factory via Truck
(section of [Mian Mao Highway](#))
从矿山去工厂的卡车 (绵茂公路)



Weighbridge:
Rock / materials handling and zoning
地磅: 矿石、原料分开堆放



P4 factory / bulk storage 黄磷工厂, 储罐



P4 factory control centre 黄磷控制室



Polyphosphate/ STPP factory
三聚磷酸钠工厂



Photos: From Mines to Factory (照片: 从矿山到工厂)



Tramway system at Mines
矿山轨道车系统



From Mine to Factory via Truck
(pre-[Mian Mao Highway](#))
绵茂公路之前，从矿山去工厂的卡车



Weighbridge:
Rock / materials handling and zoning
地磅：矿石、原料分开堆放



P4 factory / bulk storage 黄磷工厂，储罐



P4 factory control centre 黄磷控制室



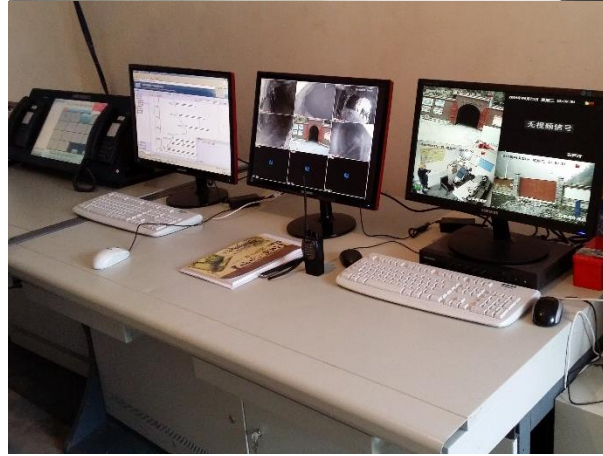
Polyphosphate / STPP factory
三聚磷酸钠工厂



Our Phosphate Mines (采矿作业)



Rail/Tramway system at Mines
矿山轨道车系统



CCTV / mine control monitoring & communications systems



Tunnel construction near mines
(redesigned Mian-Mao Highway)



WGM, Page 92/93 of QPR (9 March 2016): "Also observed at Mine 1 (CQY) are the improved ground control measures. The portal was reinforced with solid concrete structure; the fractured areas were supported with rock bolts, mesh screen, steel arches with timber filling, and shotcrete. **The quality of the ground support installation is above standard.**"



Independent Geologist inspection: "WGM also observed ramps and manways that connect levels. These developments allow personnel and equipment to access all level from underground and avoid exposure to hazardous environment, such as steep slopes and falling rocks along the mountain side. **This is considered as a major improvement since the last visit.**"



In accordance with the local PRC regulations, we have completed the construction of 'six safety' monitoring systems within the adits "井下安全避险六大系统" for our mines. These include improved communication channels within adits, position monitoring for each miner within adits, particles/ smoke monitoring system, water supply within adits, a secured shelter for miners, in the event of emergency, within the vicinity of the adits and compressed air self-rescue devices. Level 2 of the safety requirements allows the Group to obtain mining safety permit from the local authority.



Examples of our sustainability efforts (可持续发展工作的例子)

2015 Mianzhu City industrial development reward program: Our subsidiary company (Mianzhu Norwest) has received government grant/ award, for the project 'P4 flue gas integrated utilisation technology improvement'.

2015年度绵竹市工业经济发展奖励补助项目：

我司已通过奖励补助项目《黄磷尾气综合利用技术改造项目》。

Objectives of the project: To re-use flue gas to save energy resource and reduce gas emissions (CO) discharge. Flue gas is used for raw material drying, generating steam from flue gas boilers and heat source for a separate Polyphosphate plant (e.g. STPP).

Profile in Sichuan newspaper: (<http://dy.newssc.org/system/20121130/000839967.html>)

“从原料收集、粉碎处理、烘干、进入生产车间，采用全封闭式、全机械化运作，**每一个环节都在做环保。**”

在这个化工企业，看不到粉尘、听不到噪音、流不出工业污水。

不仅经济上去了，大家的生活质量也得到保证，这样的企业我们支持多建。”

Our P4 Plant is designed to operate in compliance with PRC environmental law, and practices water recycling and off gas collection as well as slag disposal at a nearby cement operation.

Monetary contributions are paid for timberland compensation and forest recovery fund for the occupied land, to the Deyang Forestry Bureau.

Further monetary provision is made for rehabilitation and reforestation upon closure of mine.

Various efficiency initiatives have been implemented, for example, P4 production process was reviewed to [reduce electricity consumption](#). This has contributed to lower P4 production costs.

Summary of quote: "From the collection of raw materials, crushing, drying, to the P4 production in factory, there is a fully enclosed / mechanized operation, and includes industrial wastewater recycling/ treatment, **the process has been designed with environmental protection in mind.**"





Competitive Strength: Higher Quality Phosphate Rocks 竞争优势: 高品质磷矿

- AsiaPhos' phosphate rocks have relatively high P₂O₅ content ≈ >29% （亚化磷矿的五氧化二磷含量 ≈ >29% ）
 - Higher value and demand （较高的价格和较大的市场）
 - Phosphate rock deposits with P₂O₅ content of at least 30% constitute only 10 - 25% of the total phosphate rock deposits in the PRC （磷矿五氧化二磷的含量至少30%，在中国只占有10-25%的总储量。）
 - Most phosphate mines in the PRC are mining phosphate rocks with P₂O₅ content of 20 – 25% （大部分磷矿的五氧化二磷含量 位于20-25%。）
 - Average grade of PRC's phosphate rock deposits is estimated to have P₂O₅ content of below 20% （中国平均磷矿的五氧化二磷含量小于20%。）

- We believe that our phosphate rocks have relatively low arsenic content ≈ 8 -10 ppm （我们相信，我们的磷矿石具有相对的低砷含量 ≈8~10ppm。）

China's phosphate reserves	Remaining reserves, million tonnes	% of total	Estimated year remaining reserves	Calculation costs, USD/tonne
20% - 29%	1,800	10%	2016	26.95
20% - 29%	2,200	12%	2016	43.43
18% - 20%	8,500	48%	2020	
15% - 18%	2,200	12%	2024	
10% - 15%	400	2%	2027	
0% - 10%	2,300	13%	2027	





Financial Highlights

财务报告要点

Revenue Performance – 1Q2017

Total Revenue (\$5m)

Change in business strategy drove top-line improvement in 1Q2017

- 1Q2017 revenue increased 512% y-o-y due to
 - More higher quality rocks instead of being used for P₄ production
 - Rocks for P₄ production secured from third party supplier
- The Group expects to resume full operating capacity for the downstream segment in 2Q2017, following production disruptions in FY2016

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Revenue Performance

Upstream Revenue (\$5m)

Unlocking value of high quality phosphate rock inventory

Downstream Revenue (\$5m)

Third party supply of rocks sustained P₄ production

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Income Statement 损益表要点

\$5000	FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
Revenue 销售收入	2,775	4,522	4,497	8,458	33,822	44,505	18,343
Gross profit 毛利	409	2,174	2,101	2,550	6,644	6,447	5,256
Profit/(loss) before tax 税前利润	(1,209)	2,433	1,509	(2,249)	19,444	3,077	(1,511)
Profit/(loss) after tax 税后利润	(1,178)	2,433	1,225	(2,667)	19,400	2,200	(1,741)

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Income Statement Highlights (FY2016) 损益表要点

	2016	2015	Change %	2016	2015	Change %
Revenue (百万)	13,517	16,828	(18)	30,346	44,506	(32)
Cost of sales 销售成本	(11,833)	(13,446)	(13)	(20,769)	(30,018)	(17)
Gross profit 毛利	1,684	3,382	(49)	9,576	14,487	(34)
Other income 其他收入	66	4,892	(99)	337	5,279	(96)
Profit/(loss) before tax 税前利润	(803)	4,766	(103)	(1,931)	3,037	(36)
Taxation 所得税	187	(407)	144	107	(836)	104
Profit/(loss) for the period 归属于母公司的净利润	(616)	4,359	(93)	(2,028)	2,201	(32)

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Income Statement Trend (By Quarter) 损益表分析 (按季度)

Quarter	Revenue	Gross Profit	Profit/(Loss) before tax	Profit/(Loss) after tax
Q1 2017	12.1	3.1	1.0	0.8
Q2 2016	10.4	10.4	10.4	10.4
Q3 2016	10.3	10.3	10.3	10.3
Q4 2016	10.0	10.0	10.0	10.0

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Revenue Trend (by Segment) 收入趋势 (按产品类别)

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Balance Sheet (Summary) 资产负债表(明细)

\$5m 百万, 百万港币	As at 31 Dec 2016 (Unaudited, 未经审计)	As at 31 Dec 2015 (Audited, 已审计)
ASSETS (资产)		
Current Assets (流动资产)	16.2	13.0
Non-Current Assets (非流动资产)	121.6	126.2
Total Assets (总资产)	137.8	139.2
LIABILITIES (负债)		
Current Liabilities (流动负债)	21.1	20.6
Non-Current Liabilities (非流动负债)	25.6	22.1
Total Liabilities (总负债)	46.7	42.7
EQUITY (权益)		
Share Capital (注册资本)	68.2	68.0
Reserves (储备)	13.6	18.1
Non-controlling interest (少数股权投资)	9.5	10.3
Total Equity (所有者权益合计)	91.1	96.5

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Cash flow statement 现金流量表

	2016	2015
Cash flow from operations	152	102
Change in non-current assets	(10)	(10)
Change in current assets	(10)	(10)
Change in non-current liabilities	(10)	(10)
Change in current liabilities	(10)	(10)
Change in cash and cash equivalents	112	62

Cash Flow & Debt Management

December 2016: Announced Rights cum Warrants Issue.

March 2017: Successful completion of Rights cum Warrants Issue. Early redemption of 2016 RPS (maturity: Jan 2021).

With the completion of the redemption of the 2016 RPS, the Group is expected to benefit from lower borrowing costs in FY2017.

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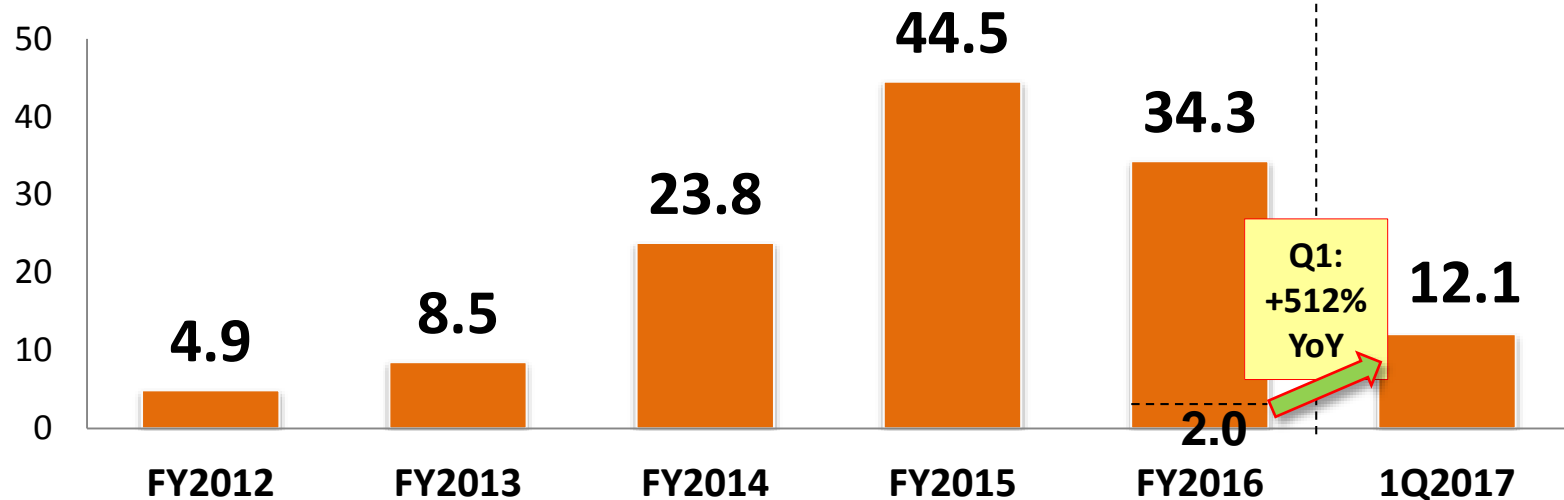
Extract from 1Q2017 Results Announcement (Chapter 10 commentary)

33



Revenue Performance – 1Q2017

Total Revenue (S\$m)



Change in business strategy drove topline improvement in 1Q2017

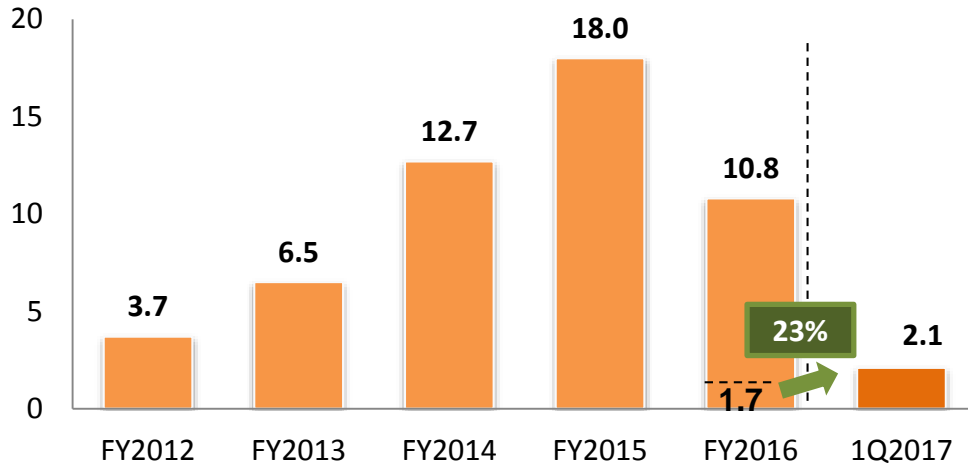
- 1Q2017 revenue increased 512% y-o-y due to:
 - More higher quality rocks instead of being used for P₄ production
 - Rocks for P₄ production secured from third party supplier

- The Group expects to resume full operating capacity for the downstream segment in 2Q2017, following production disruptions in FY2016



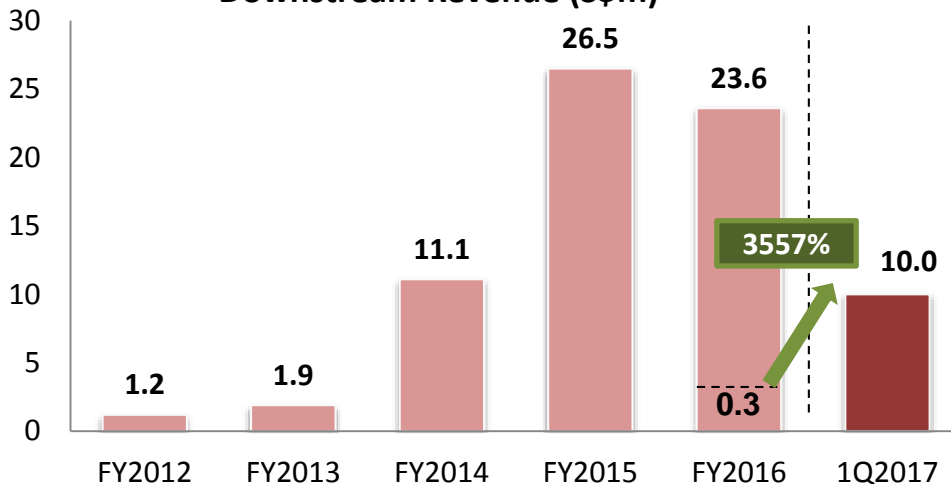
Revenue Performance (Upstream/ Downstream)

Upstream Revenue (S\$m)



Unlocking value of high quality phosphate rock inventory

Downstream Revenue (S\$m)



Third party supply of rocks sustained P₄ production



Income Statement

损益表要点

S\$'000		FY2010	FY2011	FY2012	FY2013	FY2014	FY2015	FY2016
Revenue	销售收入	2,775	4,522	4,897	8,458	23,822	44,505	34,345
Gross profit	毛利	402	2,374	2,101	2,550	4,684	8,487	5,255
Profit/(loss) before tax	税前利润	(1,206)	2,933	1,509	(2,249)	19,484	3,027	(1,931)
Profit/(loss) after tax	税后利润	(1,178)	2,933	1,225	(3,667)	19,498	2,209	(1,734)

Profit/(loss) after tax above includes: 税后利润/(亏损)含:

- Fair value gains on financial instruments relating to LYR acquisition

收购LYR的金融工具公允价值收益

20,203

- Fair value gains on reassessment of purchase consideration of LYR

重新评估LYR收购价格的公允价值收益

4,850

- Termination of pre-existing contract

终止预先存在的合同

(2,429)

- relocation gain: 搬迁增益

- 1,874 3,471 -

- one-time listing expenses: 一次性上市费用

- 1,780 2,478

Note: Refer to audited Annual Reports / Asiaphos investor relations website for further details: <http://asiaphos.com/financial-results.php>

注: 参见审计年报/ 亚化投资者联系网站了解更多详情: <http://asiaphos.com/financial-results.php>



**FY2016
Annual
Report**



Income Statement Highlights (FY2016)

损益表要点

	Fourth Quarter Ended 31 December			Financial Year Ended 31 December		
	2016 \$'000	2015 \$'000	Change %	2016 \$'000	2015 \$'000	Change %
金额 (新元)						
Revenue 销售收入	13,517	16,839	(20)	34,345	44,505	(23)
Cost of sales 主营业务成本	(11,933)	(13,649)	(13)	(29,090)	(36,018)	(19)
Gross profit 毛利	1,584	3,190	(50)	5,255	8,487	(38)
Other income	68	4,863	(99)	337	6,378	(95)
Profit/(loss) before tax 税前利润	(829)	4,760		(1,931)	3,027	
Taxation 所得税	197	(451)	N.M.	197	(818)	N.M.
Profit/(loss) for the period attributable to owners of the Company 税后利润	(632)	4,309		(1,734)	2,209	

Note: Refer to audited Annual Reports / Asiaphos investor relations website for further details: <http://asiaphos.com/financial-results.php>

注: 参阅审计年报/亚化投资者联系网站了解更多详情: <http://asiaphos.com/financial-results.php>

- “N.M” denotes not meaningful. (“N.M” 表示无可比性)
- Other income decreased by \$4.8 million, from \$4.9 million in 4Q2015 to \$0.1 million in 4Q2016, mainly due to the absence of fair value gains of \$4.8 million which arose from the reassessment of purchase consideration of LY Resources Pte. Ltd. (“LYR”), leading to fair value gains from convertible loan note and derivative asset. There were no such fair value gains in 4Q2016. 其他收入减少了480万新元, 从2015年第四季度的490万新元降至2016年第四季度的10万新元, 主要是由于重新评估收购LY资源公司 (“LYR”)的可转换债券票据和衍生资产的公允价值变动而导致的公允价值收益480万新元不再重复发生。2016年第四季度没有这样的公允价值收益。



Income Statement Highlights (1Q2017)

损益表要点

金额 (新元)	Group		
	First Quarter 2017 \$'000	Ended 31 March 2016 \$'000	Change %
Revenue 销售收入	12,122	1,982	512
Cost of sales 主营业务成本	(10,450)	(1,489)	602
Gross profit 毛利	1,672	493	239
Profit/(loss) before tax 税前利润	122	(915)	
Taxation 所得税	-	-	N.M.
Profit/(loss) for the period attributable to owners of the Company 税后利润	122	(915)	

Note: Refer to Asiaphos investor relations website for further details: <http://asiaphos.com/financial-results.php>

- 1Q2017 financials are per the 26 April 2017 public announcement.

- "N.M" denotes not meaningful.

- Revenue from the Upstream Segment increased by \$0.4 million, from \$1.7 million in 1Q2016 to \$2.1 million in 1Q2017 due to increase in both the quantity and average selling price of the phosphate rocks sold in 1Q2017. In 1Q2017, the Group sold 34,700 tonnes of phosphate rocks as compared to 25,800 tonnes in 1Q2016. The inventory of phosphate rocks carried over from the 2016 mining season as well as the commencement of the 2017 mining season enabled the Group to have more phosphate rocks available for sale in 1Q2017. As the Group managed to secure a consistent supply of quality phosphate rocks from an external phosphate rock supplier, it no longer needs to reserve its high quality phosphate rocks for its P4 production. This enabled the Group to have more high quality phosphate rocks available for sale. Such quality phosphate rocks also generally fetch higher average selling prices.
- Revenue from the Downstream Segment increased by \$9.7 million, from \$0.3 million in 1Q2016 to \$10.0 million in 1Q2017, due to the increase in revenue from sale of P4. In 1Q2017, the Group sold 3,700 tonnes of P4. Due to the availability of phosphate rocks for production of P4 and continued demand from the customers, the Group was able to continue with the production of P4 on a limited scale for sale in 1Q2017 as compared to 1Q2016 when the Group did not have any P4 inventory for sale. In the past, the Group typically ceased P4 production in the December and only resumed production in late April.
- The Group had decided to continue with the production of P4 on a limited scale during 1Q2017 so as to, *inter alia*, clear the backlog of orders to its customers whose delivery were affected by the industrial accident at the Group's P4 production plant in October 2016, build up sufficient inventory to meet its customers' requirements and to also take advantage of the rising average selling prices of P4.
- Please refer to the 1Q2017 results announcement, for a more detailed commentary on the business performance, trends and market conditions.



Extract from 1Q2017 Results Announcement (Chapter 10 commentary)

A commentary at the date of the announcement of the significant trends and competitive conditions of the industry in which the group operates and any known factors or events that may affect the group in the next reporting period and the next 12 months.

Upstream Segment

As disclosed in the Group's announcement dated 3 March 2017, the Group has received the approval for the renewal of its mining license for Mine 1, which is now valid until 28 February 2018.

The Group plans to increase its rock output in the financial year ending 31 December 2017 ("FY2017"). [Following its move to secure a consistent supply of quality rocks from an external supplier for its in-house production of P4, the Group intends to unlock the value of its rock inventory by selling more of its higher quality rocks to third parties](#), which were previously reserved for its in-house P4 production. Barring unforeseen circumstances, this is expected to contribute positively to the Group's results and cash flows in FY2017.

The Group expects phosphate rock prices to remain stable for the rest of the year.

Downstream Segment

In 1Q2017, the Group continued with the production of P4 on a limited scale. The Group has since resumed full production of P4.

Average selling prices for P4 sold in April were higher than that in 1Q2017. This was because of continued high demand for P4, due in part to (i) the recovery in the pesticide market and (ii) tight supply of P4 because several P4 producers in other provinces in the PRC were undergoing environmental and safety inspections and were unable to produce during the inspection period.

Management expects the pace of P4 price increase to moderate when more P4 supply enters the market in the second half of 2017. The Group will continue to build up the P4 business and monitor production efficiencies to improve the Group's bottomline.

Debt Management

The successful completion of the Rights cum Warrants Issue has (i) provided additional working capital which the Group can utilise to increase output and further improve its bottomline; and (ii) reduce the gearing of the Group. This will translate to lower interest on the Group's borrowings. The early redemption of the RPS will also result in interest savings of approximately \$0.3 million in FY2017. This also means that the Group need not be overly reliant on bank financing, thereby overcoming one of the key financial constraints holding back growth.

Going forward

In line with the Group's strategy to grow in a sustainable and responsible manner, the Group has invested carefully to build up and grow the business. It has been successful in growing its mines' rock output, increasing its P4 output, and building up its customer base.

The [change in strategy, to realise the value of its inventory of higher quality phosphate rocks by selling to third parties](#), is expected to improve cash flow and increase the contribution from the Upstream Segment, thereby strengthening another pillar of income stream for the Group.

The Group will examine ways to further improve efficiency and profitability. To further enhance the future value of the Group, the management is exploring with strategic partners to establish complementary businesses, both horizontally and vertically, in view of the [potential market demand and applications for black phosphorus and lithium iron phosphate \(LiFePO4\) battery](#).



Income Statement Trend (By Quarter)

损益表分析 (按季度)

金额 (新元)

Amounts shown are
in Singapore Dollars

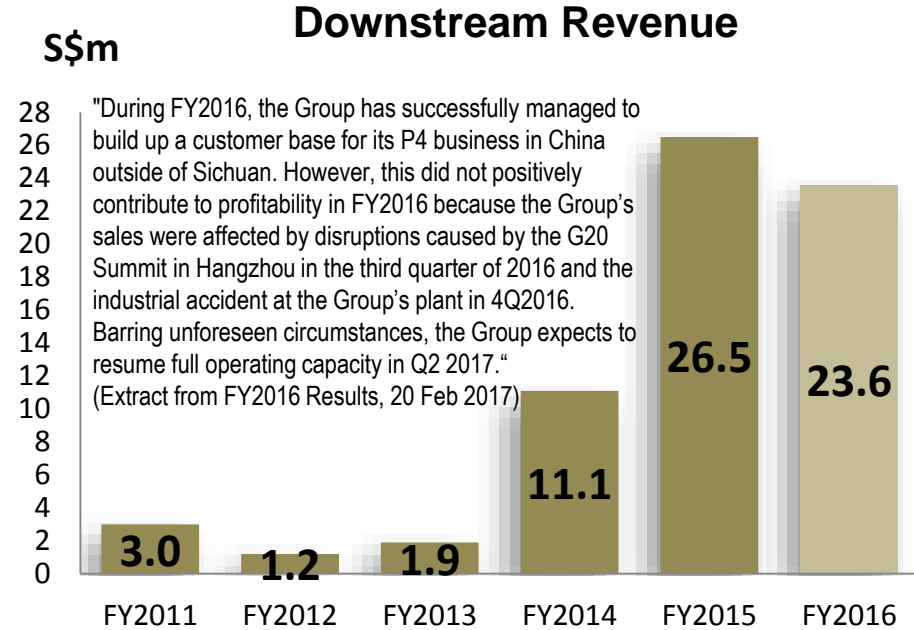
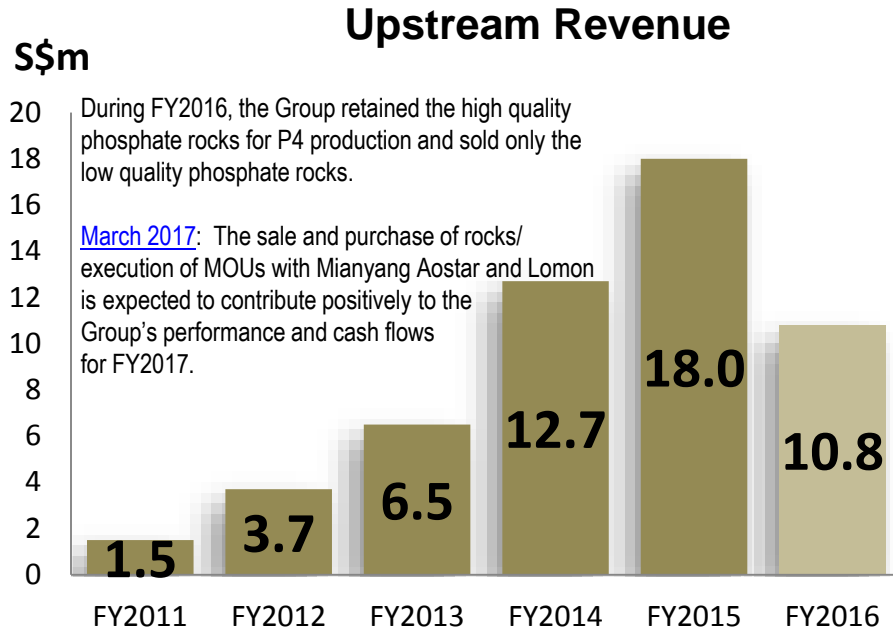
	1Q2015	2Q2015	3Q2015	4Q2015	FY2015		1Q2016	2Q2016	3Q2016	4Q2016	FY2016		1Q2017	
	\$'000	\$'000			\$'000		\$'000	\$'000			\$'000		\$'000	
Revenue 收入	6,278	12,008	9,380	16,839	44,505		1,982	9,606	9,240	13,517	34,345		12,122	
Upstream 上游产品	3,782	6,548	1,790	5,837	17,957	40%	1,708	3,572	1,232	4,275	10,787	31%	2,101	17%
Downstream 下游产品	2,496	5,460	7,590	11,002	26,548	60%	274	6,034	8,009	9,242	23,559	69%	10,021	83%
Gross profit 毛利	1,576	2,009	1,712	3,190	8,487		493	1,895	1,284	1,583	5,255		1,672	
Profit/(loss) before tax 税前利润/(亏损)	(59)	618	(2,292)	4,760	3,027		(916)	367	(552)	(829)	(1,931)		122	
Sales quantity (tons) 销售数量 (吨)														
Phosphate rocks 矿石	47,000	89,100	23,890	88,566	248,556		25,848	57,617	23,009	77,910	184,384		34,706	
P4 黄磷	780	1,900	2,840	4,555	10,075		-	2,330	3,665	3,843	9,838		3,715	

Note: Refer to Asiaphos investor relations website for further details: <http://asiaphos.com/financial-results.php>

“N.M” denotes not meaningful.



Revenue Trend (by Segment)



- **Revenue model: Balanced mix of upstream and downstream activities**
- **Upstream: The Group expects phosphate rock prices to remain stable. The Group intends to increase its rock production and this is expected to contribute positively to the Group's cash flows and profits.**
- **Downstream: Management will continue to explore the export market for P4 and other downstream phosphate chemical products.**



Balance Sheet (Summary) 资产负债表(明细)

S\$m (百万 , 新加坡元)	As at 31 March 2017 (Unaudited, 未审计)	As at 31 Dec 2016 (Audited, 已审计)	As at 31 Dec 2015 (Audited, 已审计)
ASSETS (资产)			Updated (refer Note)
Current Assets (流动资产)	15.2	16.2	13.0
Non-Current Assets (非流动资产)	120.0	121.6	123.8
Total Assets (总资产)	135.2	137.8	136.8
LIABILITIES (负债)			
Current Liabilities (流动负债)	16.6	21.1	20.6
Non-Current Liabilities (非流动负债)	19.8	25.6	20.5
Total Liabilities (总负债)	36.4	46.7	41.1
EQUITY (股东权益)			
Share Capital (注册资本)	77.0	68.2	68.2
Reserves (公积)	12.3	13.5	18.1
Non-controlling interest (少数股东权益)	9.5	9.5	9.5
Total Equity (所有者权益合计)	98.8	91.1	95.7

Refer to Asiaphos investor relations website for further details: <http://asiaphos.com/financial-results.php>



Recent Developments (最近发展)

ASIAPHOS

ASIAPHOS STORY Recent Developments

- **March 2017:** Renewal of mining right for Mine #1 (CQV)
- **March 2017:** Successful rights issue. Positions the company for continued growth momentum.
- **March 2017:** Signed MOU agreement with Cailingking Mianyang Aostar and Lomon Chemicals, for sale & purchase of phosphate rocks
- **Ongoing:** Application for conversion of Mine #1 (CQV) exploration right, into a mining right. This would increase CQV's approved production scale to potentially 300-400,000 tonnes/year

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ASIAPHOS

Mian Mao Highway expected to improve access / haulage road

- Phased construction of the Mian Mao Highway (part of HK/Sichuan post-earthquake reconstruction cooperation programme)
- Completion of Mian Mao Highway will increase accessibility between mines and production facilities
- Increased reliability and shortened time required for transportation of phosphate rocks upon completion of Mian Mao Highway

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ASIAPHOS

MOU with QIMingXing / Mianyang Aostar (Nov 2016)
2016年11月：会议纪要 (绵阳启明星磷化工有限公司)

绵阳启明星磷化工有限公司
 Mianyang Aostar Chemical Industry Co., Ltd.

The initiatives under the MOU include:

- promoting the development of the market for P4 in the PRC;
- the supply of phosphate rocks by our subsidiary company (Manchu Nitrofert) to Mianyang Aostar;
- the purchase of phosphate based chemical products from each party to satisfy third party orders; and
- the purchase of electricity by Manchu Nitrofert by leveraging on Mianyang Aostar's existing electricity arrangements

Mianyang Aostar is one of the biggest manufacturers in the PRC of yellow phosphorus, phosphoric acid and related phosphate products and purchases phosphate rocks from our company.

The MOU formally seals the close and longstanding relationship between the Group and Mianyang Aostar, which is one of the Group's key customers. The considerable synergies will offer many partnering opportunities, which the Group believes can help to achieve better market positioning, competitive advantages and cost savings, amongst other benefits.

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ASIAPHOS

Mian Mao Highway (Hanwang to Qingping section)
 绵茂公路 (汉旺至清平段): 项目建设规模、资金及工期

项目建设规模: 绵茂公路全长24公里, 包括新建道路5条(共8.4公里)、升级改造(2.67公里)、桥梁及涵洞等工程。
 Project construction scale: The construction section is about 24 kilometers long, including 5 new tunnels @ 4 kilometers, 20 bridges (2,167 meters), rock-shield full tunnels and other facilities.
 项目工期: 工期于2009年7月开始施工, 在2016年10月竣工。
 Project duration: Started construction July 2009; completed October 2016.

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➔ Further Reading:

• **Electricity:** "China presses ahead with power pricing reform"; South China Morning Post, 12 Sept 2016:
<http://www.scmp.com/business/companies/article/2018410/china-presses-ahead-power-pricing-reform>

• **Resource Tax Reform:** Changes in government surcharges and levy on mineral resources (Sichuan Government announcement: 《四川省人民政府关于全面实施资源税改革的通知》, 15 July 2016) <http://www.sc.gov.cn/10462/10464/13298/13301/2016/7/15/10388282.shtml> ;
<http://zcyj.sc.gov.cn/xxgk/NewT.aspx?i=20160713142428-255279-00-000>



THE ASIAPHOS STORY

Corporate History and Recent Developments



Mianzhu Norwest became a wholly foreign-owned enterprise after the acquisition of equity interests from the PRC partner.

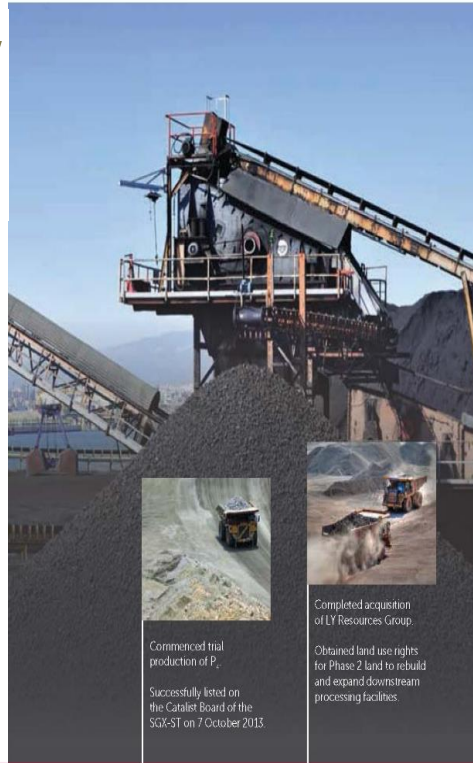
Mining commenced at the Shi Sun Xi mine.

Received exploration rights for additional mining depths and areas around existing mines.

Due to the 2008 Wenchuan Earthquake in Sichuan Province, production facilities and infrastructure surrounding the mines were damaged, and lives were lost.



One of the first few producers of heavy-density STPP, which commands higher commercial value than powder low-density STPP.



Commenced trial production of P₂

Successfully listed on the Catalyst Board of the SGX-ST on 7 October 2013.



Completed acquisition of LY Resources Group.

Obtained land use rights for Phase 2 land to rebuild and expand downstream processing facilities.

1996 to 1997 1998 to 1999 2001 to 2002 2003 to 2008 2009 to 2011 2012 2013 2014 2015 2016

Established Mianzhu Norwest, a Sino-foreign joint venture to process and produce phosphate-based chemical products.

Obtained ISO 9001.



Mianzhu Norwest attained ISO 14001 environmental management system certification, one of the few phosphate-based chemical producers in the PRC to be accredited.

In 2002, as part of a vertically integrated strategy, Mianzhu Norwest acquired mining rights for two phosphate mines in Sichuan Province.

Mining commenced at the Cheng Qiang Yan mine.



Undertook recovery efforts with support from the local PRC authorities, suppliers and customers.

Obtained land use rights for the new Gongqing site, Phase 1 land, to relocate, rebuild and expand downstream processing facilities.

Incorporated AsiaPhos.

Completed construction of P₂ plant and relocation of STPP plant to the new Gongqing site.



Received approval for the expansion of exploration right for Cheng Qiang Yan mine to 154km².



Obtained renewal of mining and exploration right for Cheng Qiang Yan mine, as well as the exploration right for Shi Sun Xi mine.

Obtained renewal of exploration right for Feng Tai mine for an exploration area of approximately 12.43 km².

Signed MOU with major customer Mianyang Aostar Phosphorus Chemical Industry Co., Ltd.

Recent developments:

- **Nov 2016:** MOU with QiMingXing / Mianyang Aostar
- **March 2017:** Renewal of mining right for Mine #1 (CQY)
- **March 2017:** Successful rights-cum-warrants issue: Positions the company for continued growth momentum.
- **March 2017:** Signed MOU/agreement with QiMingXing/ Mianyang Aostar and Lomon Chemicals, for sale & purchase of phosphate rocks
- **Ongoing:** Application for conversion of Mine #1 (CQY) exploration right, into a mining right; This would increase CQY's approved production scale to potentially 300-400,000 tonnes/year
- Exploring with strategic partners to establish complementary businesses, both horizontally and vertically



MOU with QiMingXing / Mianyang Aostar (Nov 2016) 2016年11月：会议备忘录 (绵阳 启明星 磷化工有限公司)

ASIAPHOS

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ENTRY INTO MEMORANDUM OF UNDERSTANDING WITH MIANYANG AOSTAR PHOSPHORUS CHEMICAL INDUSTRY CO., LTD.

The board of directors (the "Board") of AsiaPhos Limited (the "Company", and together with its subsidiaries, the "Group") is pleased to announce that Sichuan Mianzhu Norwest Phosphate Chemical Limited ("Mianzhu Norwest"), a wholly-owned subsidiary of the Company, has on 3 November 2016, entered into a non-binding memorandum of understanding with Mianyang Aostar Phosphorus Chemical Industry Co., Ltd. (绵阳市磷化工有限公司) ("Mianyang Aostar") to collaborate on certain initiatives in relation to the Group's operations (the "MOU").

Mianyang Aostar is one of the biggest manufacturers in the People's Republic of China ("PRC") of yellow phosphorus, phosphoric acid and related phosphate products based in Mianyang City, Sichuan Province, and is a purchaser of phosphate rocks from the Group.

Under the terms of the MOU, Mianyang Aostar and Mianzhu Norwest intend to cooperate on, *inter alia*, the following areas:

- (i) Enhancing communication of information in relation to the market for P₄ in the PRC between Mianyang Aostar and Mianzhu Norwest, with the aim of establishing reasonable pricing and the prevention of unfair competition;
- (ii) (a) Mianzhu Norwest will, subject to the Group's internal requirements, prioritise the fulfilment of purchase orders placed by Mianyang Aostar (if any) for phosphate rocks from the Group. Under the MOU, Mianyang Aostar has indicated that it may purchase approximately 20,000 tonnes of phosphate rocks and up to 100,000 tonnes of phosphate from the Group in the remaining months of 2016 and in 2017 respectively, and (b) Mianzhu Norwest and Mianyang Aostar will seek to purchase phosphate-based chemical products from each other to satisfy orders received from third parties which are in excess of their respective available inventory or capacity (where applicable); and
- (iii) Explore the purchase of electricity by Mianzhu Norwest at preferential rates, by leveraging on Mianyang Aostar's existing electricity arrangements.

Shareholders should note that the MOU is non-binding in nature and may or may not lead to the entry into of definitive agreement(s) with Mianyang Aostar by the Group in relation to the initiatives contemplated under the MOU.

The signing of the MOU is not expected to have any material impact on the net tangible assets per share and earnings per share of the Group for the current financial year ending 31 December 2016.

None of the directors or the controlling shareholders of the Company has any direct or indirect interest in this MOU, save through their shareholding interests in the Company.

The Company will make further announcements as and when there are material developments with regard to the initiatives contemplated under the MOU.

BY ORDER OF THE BOARD

Simon Ong Eng Hock
Executive Director
AsiaPhos Limited
4 November 2016



绵阳启明星磷化工有限公司

Mianyang Aostar Phosphorus Chemical Industry Co., Ltd.

The initiatives under the MOU include

- (i) promoting the development of the market for P₄ in the PRC;
- (ii) the supply of phosphate rocks by our subsidiary company (Mianzhu Norwest) to Mianyang Aostar;
- (iii) the purchase of phosphate-based chemical products from each party to satisfy third party orders; and
- (iv) the purchase of electricity by Mianzhu Norwest by leveraging on Mianyang Aostar's existing electricity arrangements.

- Mianyang Aostar is one of the biggest manufacturers in the PRC of yellow phosphorus, phosphoric acid and related phosphate products and purchases phosphate rocks from our company.
- The MOU formally seals the close and longstanding relationship between the Group and Mianyang Aostar, which is one of the Group's key customers. The considerable synergies will offer many partnership opportunities, which the Group believes can help to achieve better market positioning, competitive advantages and cost savings, amongst other benefits.

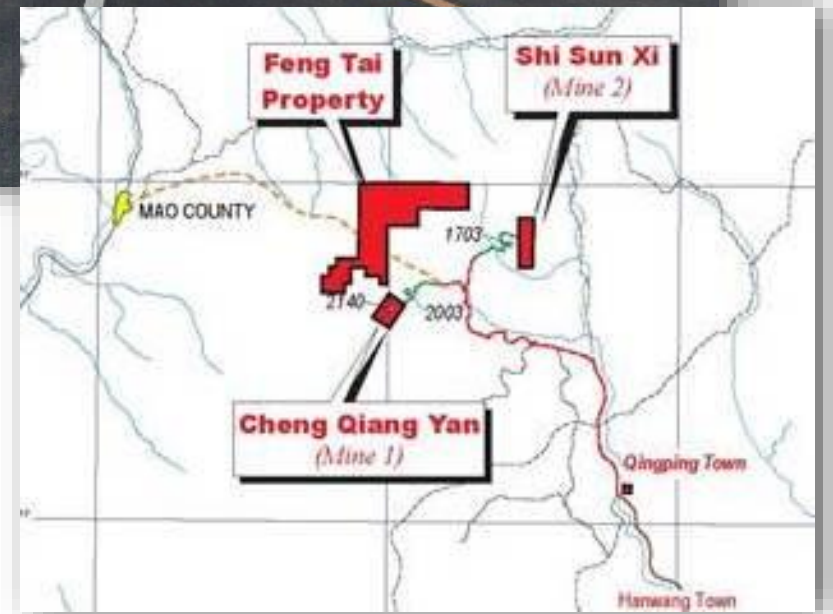
Link:

http://asiaphos.com/pdf/20161104_AsiaPhos%20Limited_SGXNet%20Announcement_Entry%20into%20Memorandum%20of%20Understanding%20and%20Press%20Release.pdf



Mian Mao Highway expected to improve access / haulage road 绵茂公路有望提高通车/运输道路

- Phased construction of the Mian Mao Highway (part of Hong Kong/Sichuan post-earthquake reconstruction cooperation programme) 绵茂公路分段建设（香港和/四川，地震灾后重建合作项目的一部分）
- Completion of Mian Mao Highway will increase accessibility between mines and production facilities 绵茂公路建成后，将增加矿山和生产设施之间的贯通
- Increased reliability and shortened time required for transportation of phosphate rocks upon completion of Mian Mao Highway 绵茂公路建成后所需磷矿石运输提高可靠性、有效性，缩短运输时间



Mian Mao Highway (Hanwang to Qingping section)

绵茂公路 (汉旺至清平段): 项目建设规模、资金及工期

项目建设规模: 援建路段全长约24公里, 包括新建隧道5条(共8.4公里)、桥梁20座(共2,167米)、棚洞及其他配套设施。

Project construction scale: The construction section is about 24 kilometres long, including 5 new tunnels (8.4 kilometres), 20 bridges (2,167 meters), 'rock-shed' half-tunnels and other facilities.

项目工期: 工程于**2009年7月**开始施工, 在**2016年10月**竣工。

Project duration: Started construction July 2009; completed October 2016.



清平场镇大桥 (Qingping Town Bridge)



主线清平乡路段 (Highway, Qingping section)



蔡家沟大桥 (Caijiagou Bridge)



蔡家沟大桥及云湖二号隧道
(Caijiagou Bridge and Yunhu No.2 Tunnel)



楠木沟大桥及金鱼隧道向清平出口
(NanMuGou bridge/ JinYu tunnel / Qingping exit)



主线及天池连接线路段
(Highway, Tianchi section)



云湖二号隧道 (Yunhu No.2 Tunnel)



About Phosphate (关于磷矿)

ASIAPHOS

Why Phosphate? Essential to Life / No Substitutes

为什么磷酸盐？生命必不可少的/无替代品

"We may be able to substitute nuclear power for coal power, and plastics for wood, and yeast for meat, and friendliness for isolation – but for phosphorus there is neither substitution nor replacement."

(Isaac Asimov's 1959 essay 'Life's Bottleneck')

“我们可以用核电替代煤电，和塑料替代木材，和酵母替代肉，和隔离 – 但对磷，既没有替代，不能更换。(著名科普作家阿西莫夫 (Isaac Asimov) 便曾称它为「生命的瓶颈」, 1959年)

ASIAPHOS

Uses of Phosphate and Related Chemicals

Fertilisers Oral hygiene products Beverages Metal treatment / paint

Fire retardants Pharmacy products LCD / Semi-conductor Electric car battery

STPP is used in, or in the manufacturing process for:

Food and beverage products Detergents Home building

SHMP is used in, or in the manufacturing process for:

Paints Food processing Water treatment Oil & gas

ASIAPHOS

Why Phosphate?

Expected demand growth (Electric Vehicles/Battery market)

Bloomberg: Electric Cars Could Wreak Havoc on Oil Markets Within a Decade (2018-02 'Sooner Than You Think' video)

Future of the electric car and lithium ion battery markets

Phosphorus is found in a new, reliable cathode material (LiFePO4) used in the most popular electric vehicles and other products, as well as in the electrolyte (LiPF6) that highlights phosphorus to be a fascinating link between energy and the core subject of the conference. Further adding to the appeal of these batteries is the fact that the price of a lithium ion battery is nearing that of older technologies.

Why Lithium Iron Phosphate Battery Applications are Limitless

Phosphorus is found in a new, reliable cathode material (LiFePO4) used in the most popular electric vehicles and other products, as well as in the electrolyte (LiPF6) that highlights phosphorus to be a fascinating link between energy and the core subject of the conference. Further adding to the appeal of these batteries is the fact that the price of a lithium ion battery is nearing that of older technologies.

“About Phosphate”: Links to further info (+Source) on Global Fertiliser Market / Phosphate Reserves & Production:

- . Why Phosphate / Food Security (Phosphorus Platform): <https://www.youtube.com/watch?v=Y17HqUsaoj8> ; <https://www.youtube.com/watch?v=YXpnr9nnmn4>
- . Industry Chain / Uses: <http://www.cnchemicals.com/special/special/PhosphorusIntelligence.aspx> ; <http://phosphatesfacts.org/uses-applications/>
- . Phosphorus and Phosphorus Chemicals | IHS Markit: <https://www.ihs.com/products/phosphorus-chemical-economics-handbook.html>

“Why Phosphate”: Expected Demand Growth (Agriculture / Electric Vehicles / Battery Market, etc)

- . Bloomberg: Electric Cars Could Wreak Havoc on Oil Markets Within a Decade (February 2016, 'Sooner Than You Think' video series): <https://www.youtube.com/watch?v=jwHN6QQWv2g&feature=youtu.be&t=45>
- . Europa.EU / JPMorgan: Future of the Electric Car & Lithium Ion Battery Market: Detailed assessment of the market potential, and demand for, an EU ETV scheme (June 2011): https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/etv-files/files/documents/EPEC_study/etv_final_report_market_annex1.pdf
- . European Sustainable Phosphorus Platform newsletter (August 2015): <http://www.phosphorusplatform.eu/images/scope/scopenewsletter115.pdf>
- . “Why Lithium Iron Phosphate Applications are Limitless” (Sept 2015): <http://www.relionbattery.com/blog/why-lithium-iron-phosphate-battery-applications-are-limitless>
- . “Is Black Phosphorus the New Graphene?”, IEEE (Sept 2015): <http://spectrum.ieee.org/semiconductors/materials/is-black-phosphorus-the-new-graphene>
- . “Black phosphorus is new 'wonder material' ” | Business Standard (March 2015): http://www.business-standard.com/article/news-ians/black-phosphorus-is-new-wonder-material-115030300472_1.html
- . “Lithium Iron Phosphate Battery Market Growing at 20.5% CAGR to 2020” (Sept 2016): <http://www.prnewswire.com/news-releases/lithium-iron-phosphate-battery-market-growing-at-205-cagr-to-2020-592851781.html>



Why Phosphate? Essential to Life / No Substitutes 为什么磷酸盐？生命必不可少的/无替代品

“We may be able to substitute nuclear power for coal power, and plastics for wood, and yeast for meat, and friendliness for isolation – but for phosphorus there is neither substitution nor replacement.”

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“我们可以用核电替代煤电，和塑料替代木材，和酵母替代肉，和隔离 – 但对磷，既没有替代，不能更换。(著名科普作家阿西莫夫 (Isaac Asimov) 便曾稱它為「生命的瓶頸」，1959年)





Uses of Phosphate and Related Chemicals



Fertilisers



Oral hygiene products



Beverages



Metal treatment / paint



Fire 阻燃剂
Fire retardants



Pharmacy products



LCD / Semi-conductor



LiFePO4
Electric car battery

STPP is used in, or in the manufacturing process for:



Food and beverage products



Detergents



Home building

SHMP is used in, or in the manufacturing process for:



Paints



Food processing



Water treatment



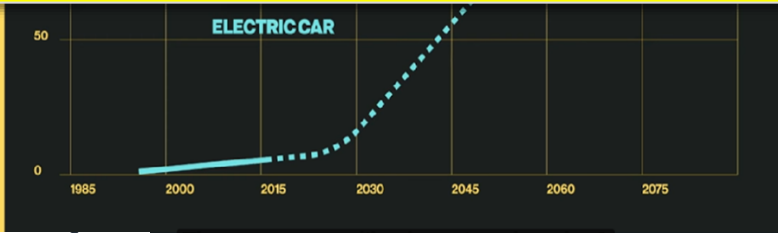
Oil & gas

Why Phosphate?



Potential demand growth (Electric Vehicles/Battery market)

Bloomberg: Electric Cars Could Wreak Havoc on Oil Markets Within a Decade (2016-02 'Sooner Than You Think' video)



Bloomberg Business

That sure seems like the point when the S curve goes vertical.

Future of the electric car and lithium ion battery markets

■ Lithium ion batteries for electric cars (Unit: \$10 million)
●●● Electric vehicles (Unit: 10,000 cars)



Why Lithium Iron Phosphate Battery Applications Are Limitless

published on September 24, 2015 by Paul Hecimovich

For many years now, lithium batteries have been the most trusted high-performance batteries in various industries. Used in smartphones, watches, computers and tablets, lithium iron phosphate (LiFePO4) batteries provide benefits that make them a smart choice for everyday use.

• Energy Density And Flexibility

Lithium iron phosphate batteries offer the **best balance of energy density and safety without causing harm to the environment**. Their high energy density means lithium iron phosphate batteries can be made into battery packs of any size.

Consequently, LiFePO4 batteries are being used in license plate monitoring devices, depth finders, paddle boards and playground equipment.

The opportunities for lithium iron phosphate batteries are limitless. No matter what your application, there is a lithium battery solution for your energy needs. If you require a high-performance battery for your energy storage, LiFePO4 is the answer.

Phosphorus is found in a new, reliable cathode material (LiFePO4) slated to be used in **electric vehicles and smart power grids**, as well as in the **electrolyte (LiPF6)**, thus highlighting phosphorus to be a fascinating link between energy and the core subject of the conference. Further aiding in the spread of these batteries is the fact that the price of a lithium ion battery is nearing that of older technologies.

Fabrice Renard of Prayon elaborated on the merits of LiFePO4 and its merits as cathode material in large Li on batteries in a parallel session. (Symphos, 2015 ([ESPP, 2015-08](#)))

Source information / Further reading:

- Bloomberg: Electric Cars Could Wreak Havoc on Oil Markets Within a Decade (February 2016, 'Sooner Than You Think' video series): <https://www.youtube.com/watch?v=jwHN6QQWv2g&feature=youtu.be&t=45>
- Europa.EU / JPMorgan: Future of the Electric Car & Lithium Ion Battery Market: Detailed assessment of the market potential, and demand for, an EU ETV scheme (June 2011): https://ec.europa.eu/environment/ecoap/sites/ecoap_stayconnected/files/etv-files/files/documents/EPEC_study/etv_final_report_market_annex1.pdf
- European Sustainable Phosphorus Platform newsletter (August 2015): <http://www.phosphorusplatform.eu/images/scope/scopenewsletter115.pdf>
- "Why Lithium Iron Phosphate Applications are Limitless" (Sept 2015): <http://www.relibattery.com/blog/why-lithium-iron-phosphate-battery-applications-are-limitless>
- "Is Black Phosphorus the New Graphene?", IEEE (Sept 2015): <http://spectrum.ieee.org/semiconductors/materials/is-black-phosphorus-the-new-graphene>
- "Black phosphorus is new 'wonder material' | Business Standard (March 2015): http://www.business-standard.com/article/news-ians/black-phosphorus-is-new-wonder-material-115030300472_1.html



Further Reading

- . “Miners regain mojo to spark \$18b in exploration hunt, China at forefront” (Bloomberg/DealStreetAsia, 23/26 March 2017): <http://www.dealstreetasia.com/stories/miners-regain-mojo-to-spark-18b-in-exploration-hunt-china-at-forefront-68484/>
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- . “China presses ahead with power pricing reform”; 12 Sept 2016: <http://www.scmp.com/business/companies/article/2018410/china-presses-ahead-power-pricing-reform>
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- . China Mineral Resources Report (中国矿产资源报告) / Phosphate Rock Production statistics (中国磷矿石产量统计): <http://www.cgs.gov.cn/xwl/ddyw/201611/W020161117357746551241.pdf>
- . Phosphorus ore listed as strategic mineral resource in China (December 2016): <http://www.cnchemicals.com/Detail/Readonline.aspx?id=6141&type=n&cid=20879632279>
- . 2017-05-29, “Among Volatile Mining plays, analysts prefer GEO Energy, GEAR, AsiaPhos” (The Edge Markets), <http://www.theedgemarkets.com.sg/mining-value> ; <http://digital.theedgesingapore.com/theedgesingapore/books/theedgesingapore/2017/20170529theedgesingapore/index.html#/9/>



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ASIA PHOS

