



Polyester Chain Overview

13 September 2018 | Chengdu, China

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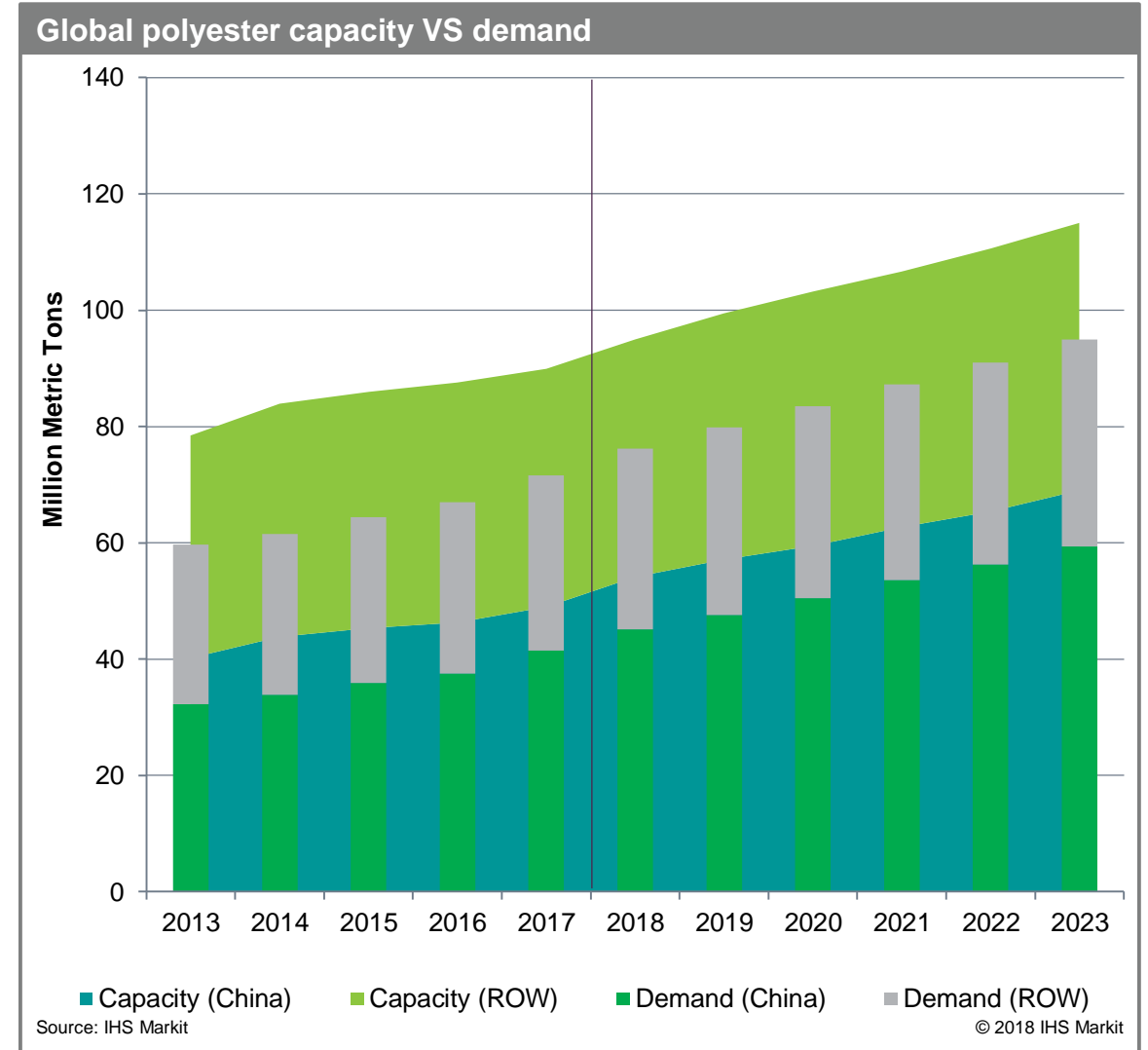
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Polyester: strong growth beats expectation

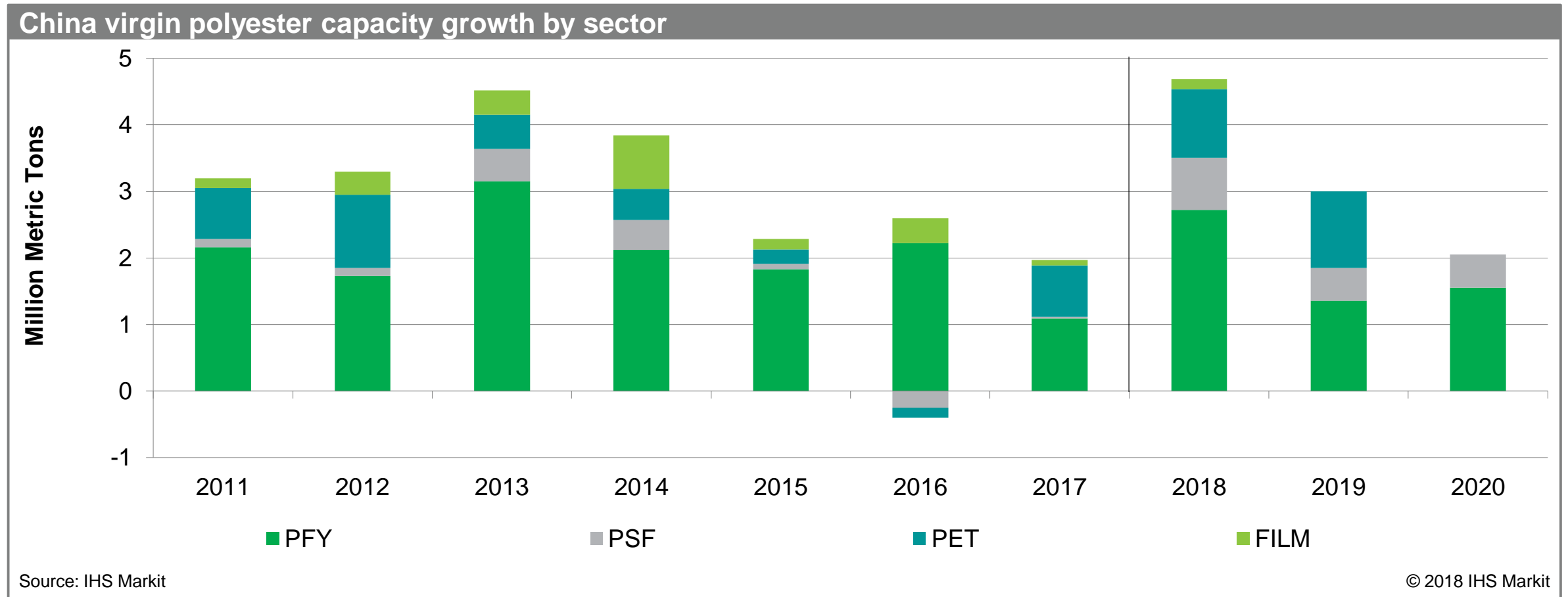
China leads world polyester growth

- In 2017 China accounted for 54% of global polyester capacity and 58% of global demand
- On an annualized basis, China has contributed to over 75% of global capacity/demand growth for the past 5 years
- Polyester demand growth in China jumped above 10% for both 2017 and 2018, while the rest of the world didn't see remarkable momentum; Global capacity growth in these two years were almost fully driven by China.



Capacity growth in China surged once again after a 3-year trough

Filament remains the hottest sector, followed by PET; the bans on importing solid wastes rekindled the interest in PSF

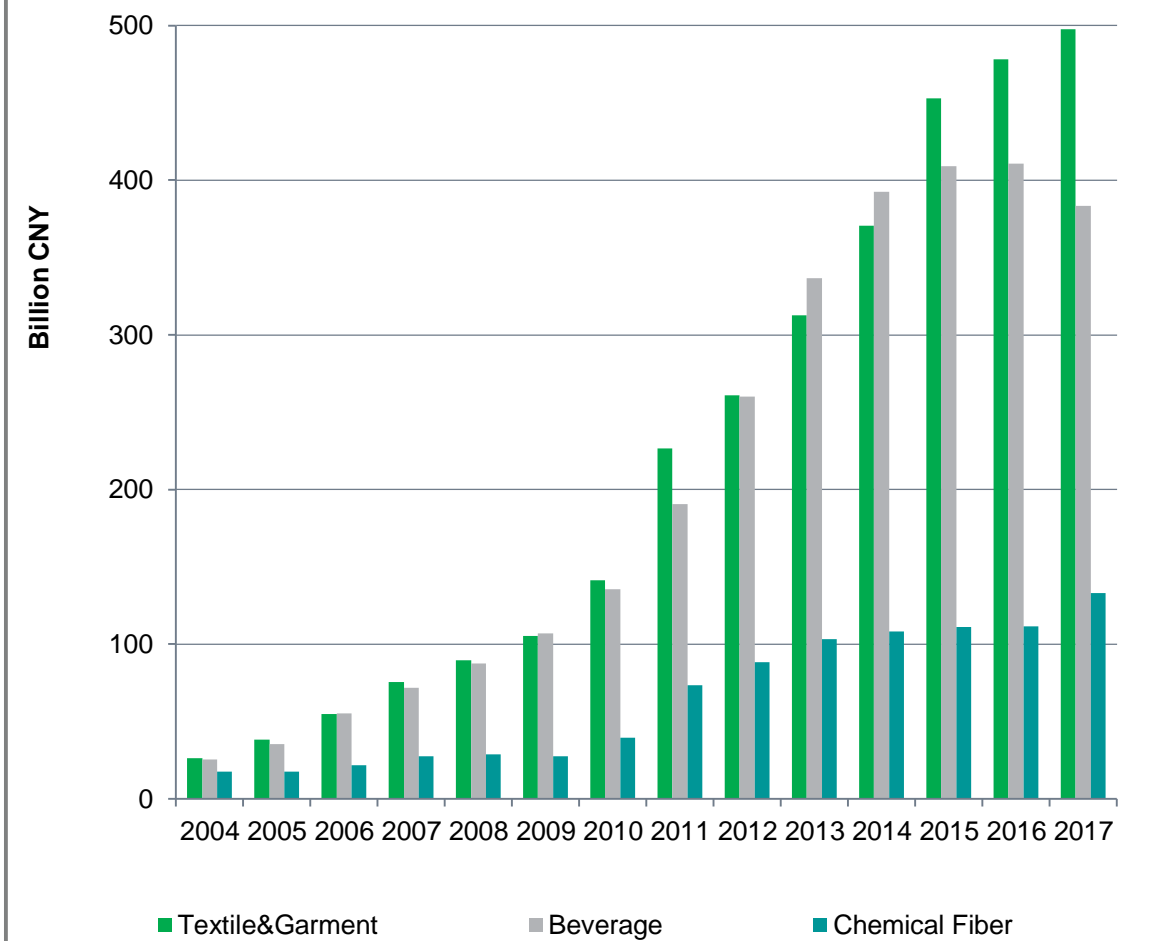


Fast growing downstream sectors are the key factor boosting polyester demand

Combined factors drive downstream investment

- Equipment upgrade for improving efficiency and quality
- Derivative industries extend to inland regions
- Labor availability and costs boost the investment in automation
- Stricter environmental governance leads to upgrade, revamp and relocation
- Relatively easing financing circumstances

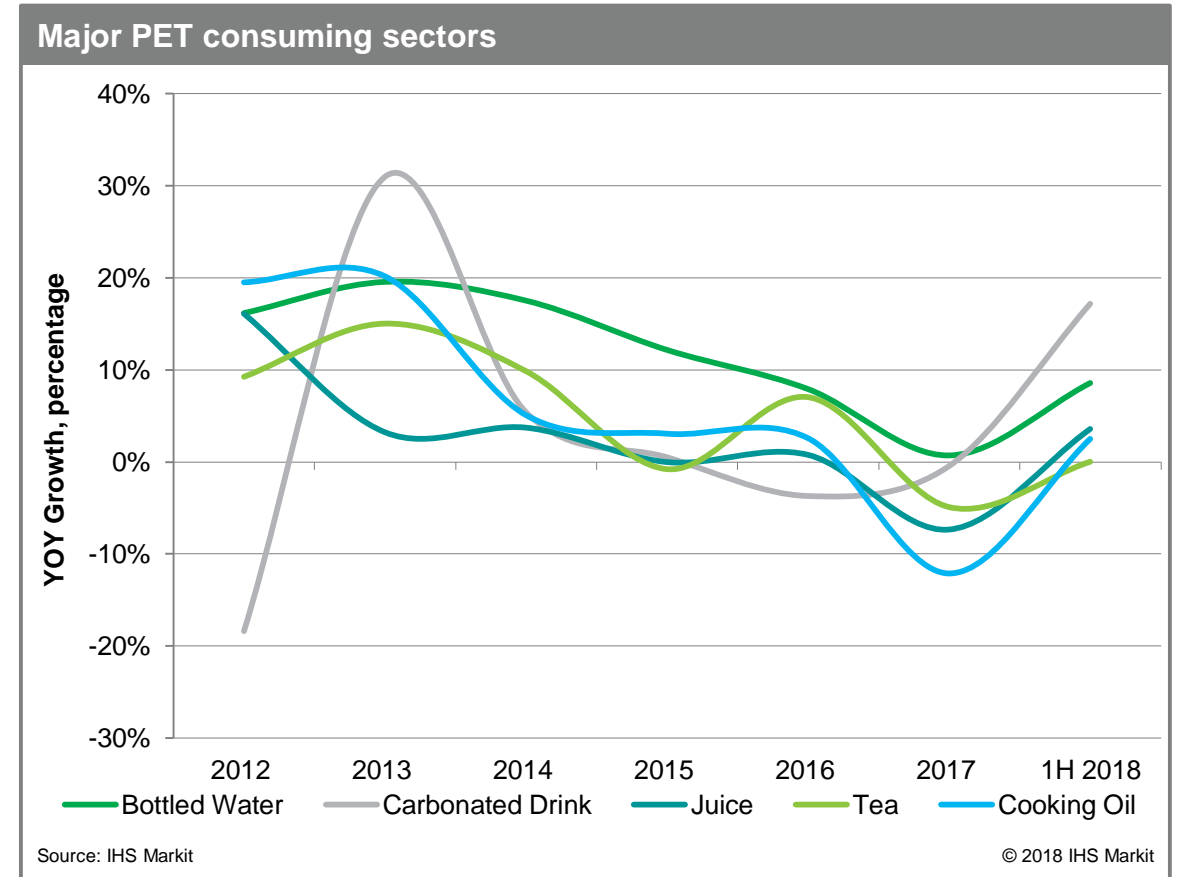
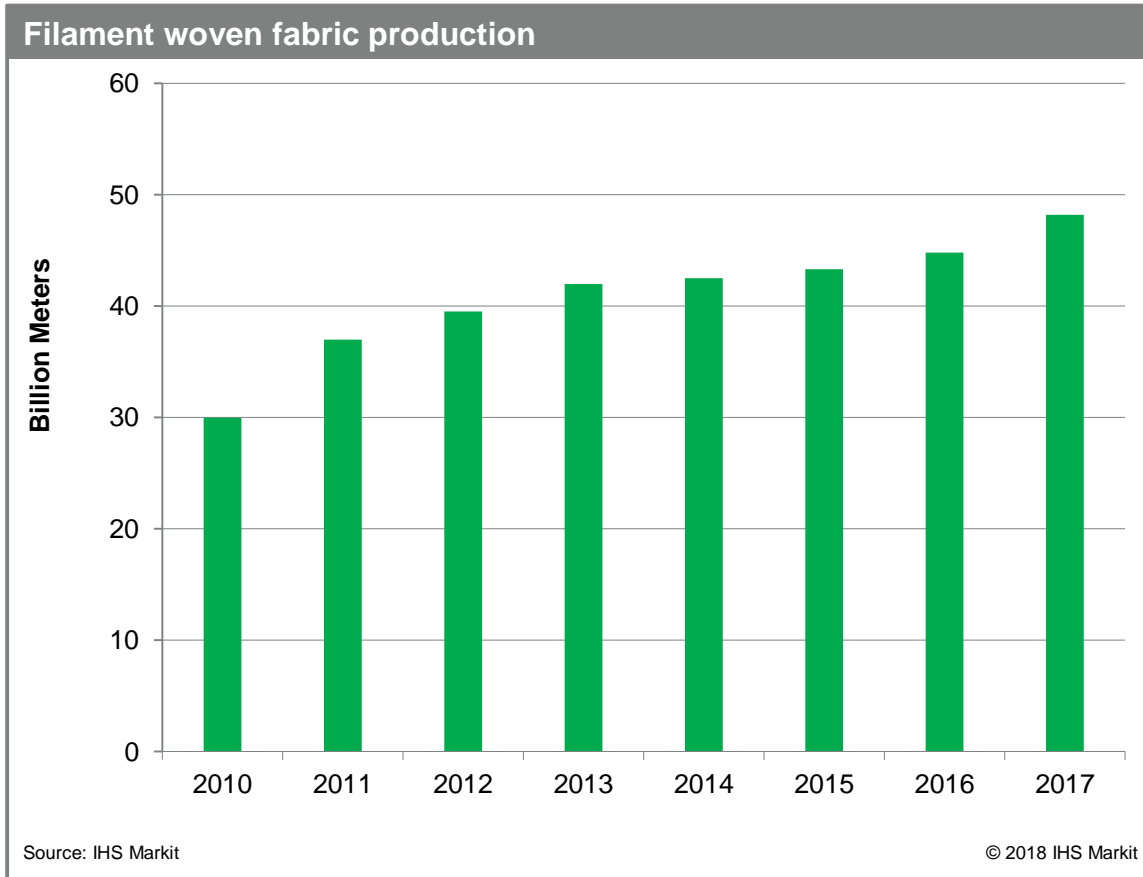
按行业分搞定资产投资



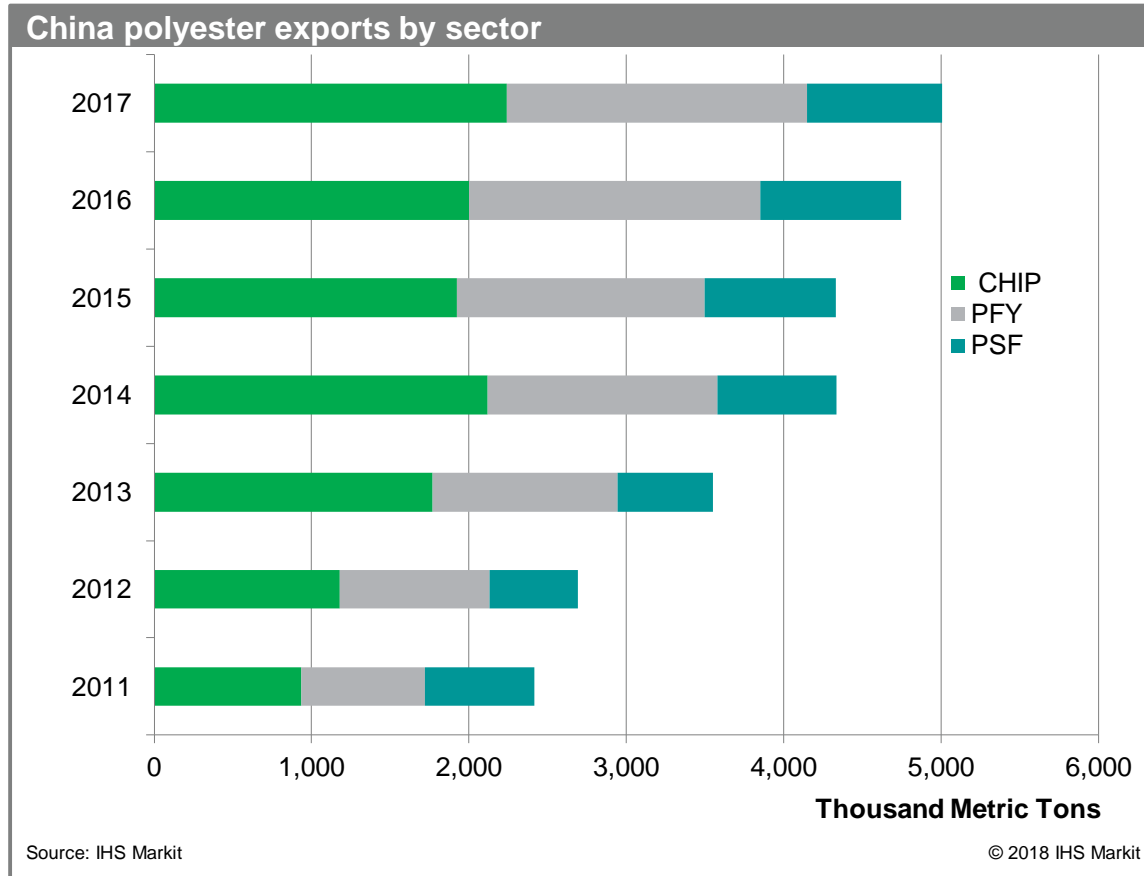
Source: China National Bureau of Statistics

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Downstream growths regained momentum

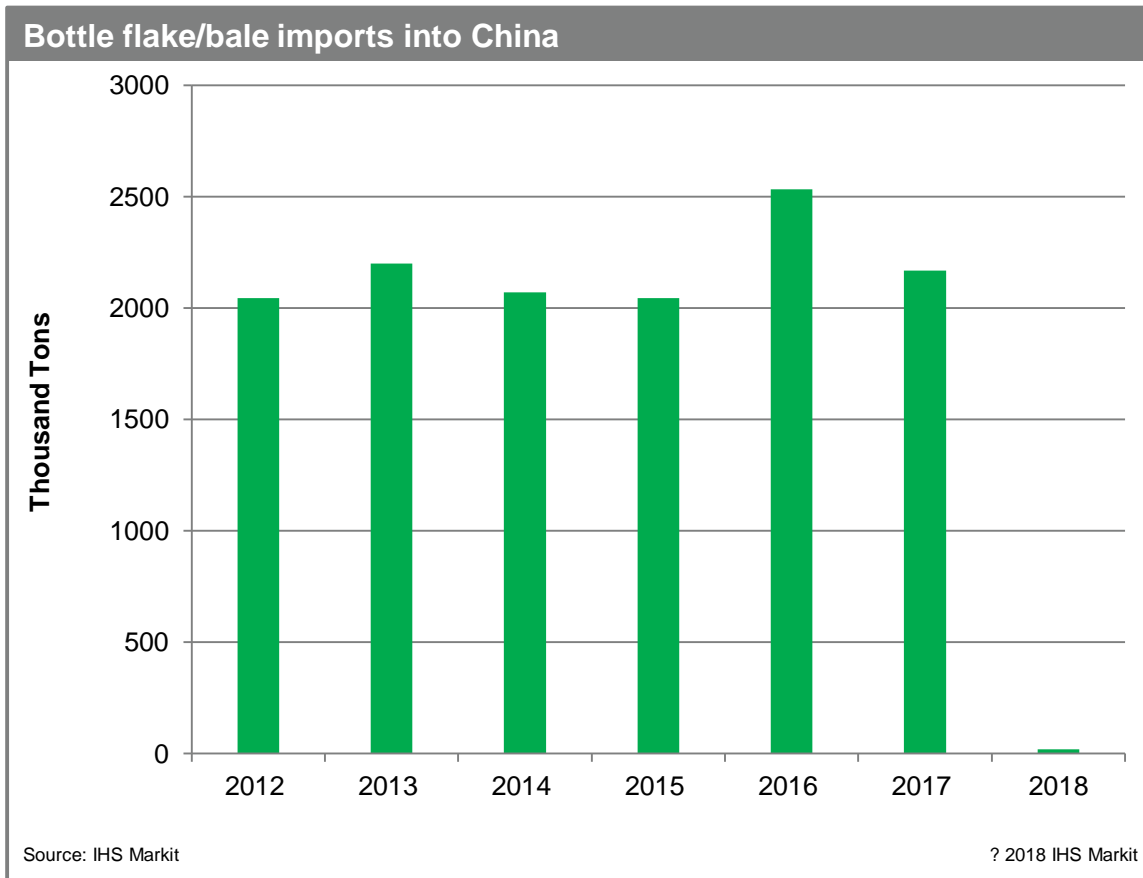


Polyester exports boost incremental production



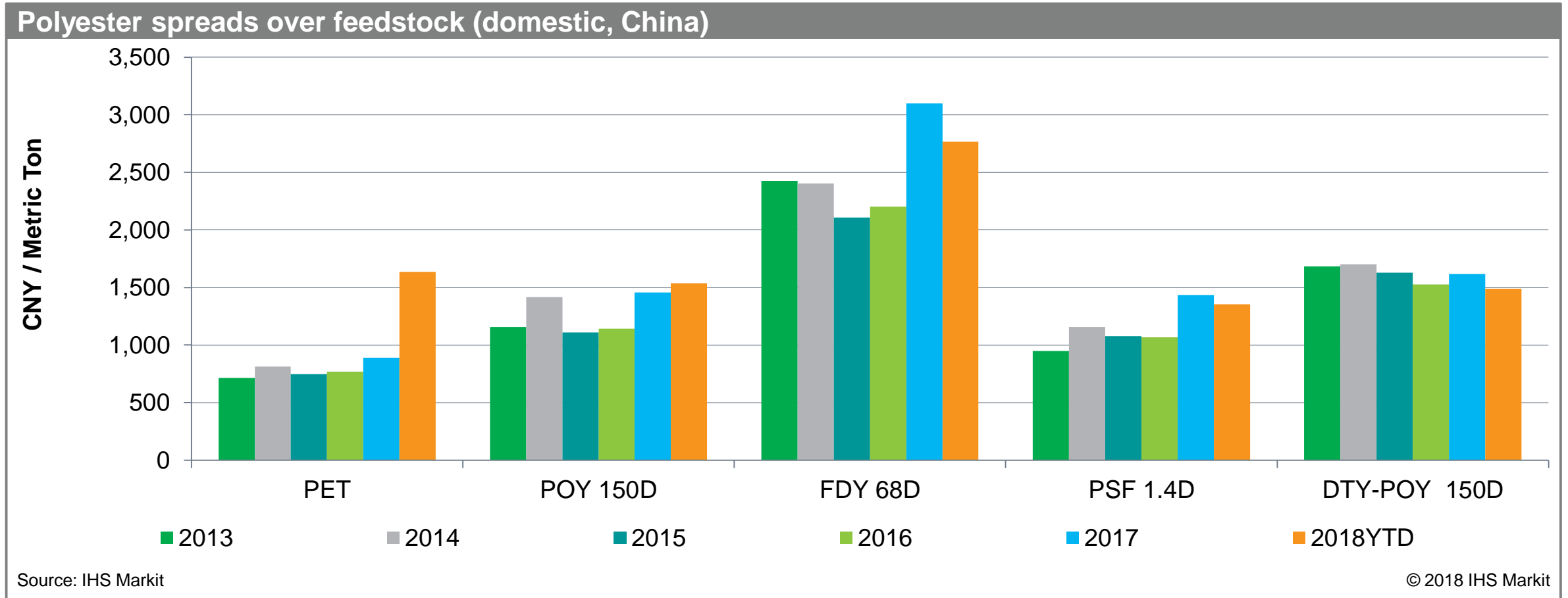
SECTOR	1H 2018	KT	YOY
CHIP	1510		+33.2%
PFY	1205		+14.5%
PSF	520		-1.1%

Virgin polyester benefits from the ban on importing solid wastes



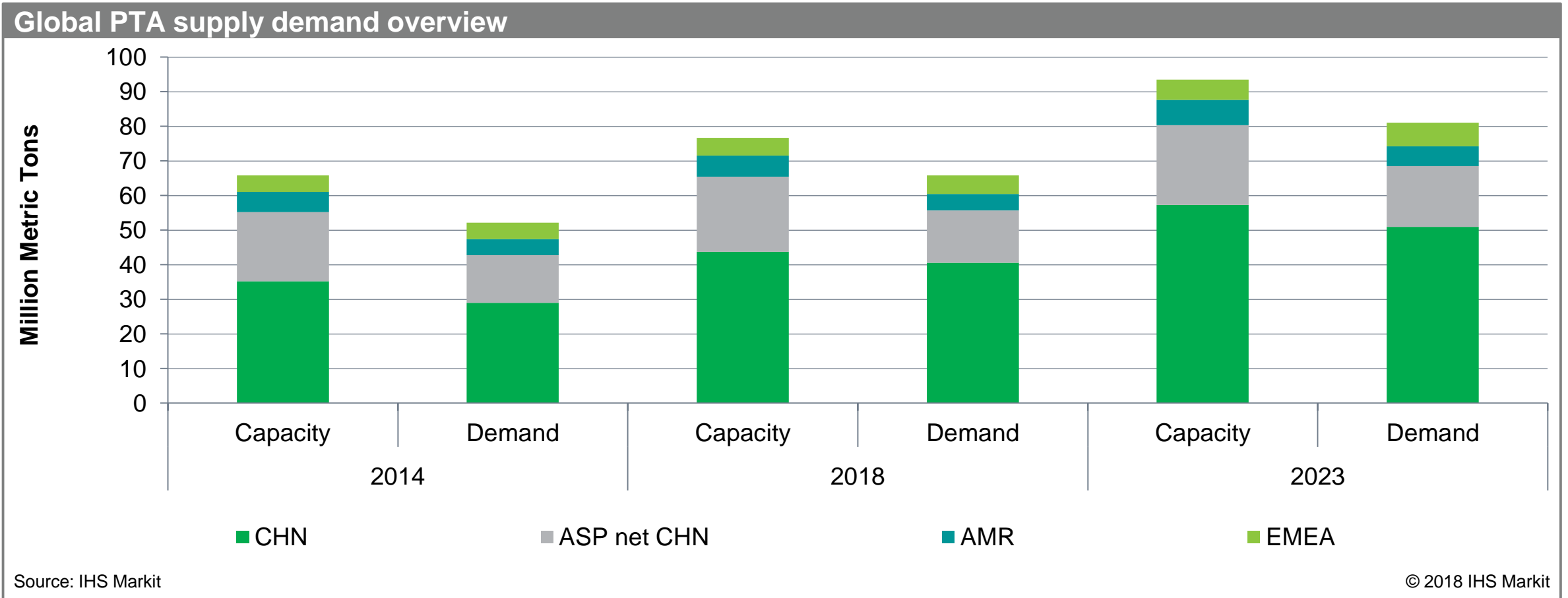
- 18 rounds of quota release this year to date with PET adding up to only 16.7KT
- Strict import inspections on recycled resin; tighter regulations in Southeast Asia
- Cleaned and sorted flakes have been exempted from the ban, but test standard needs revision
- Virgin chip and PET are being used to substitute r-PET

Margins improved for most polyester product

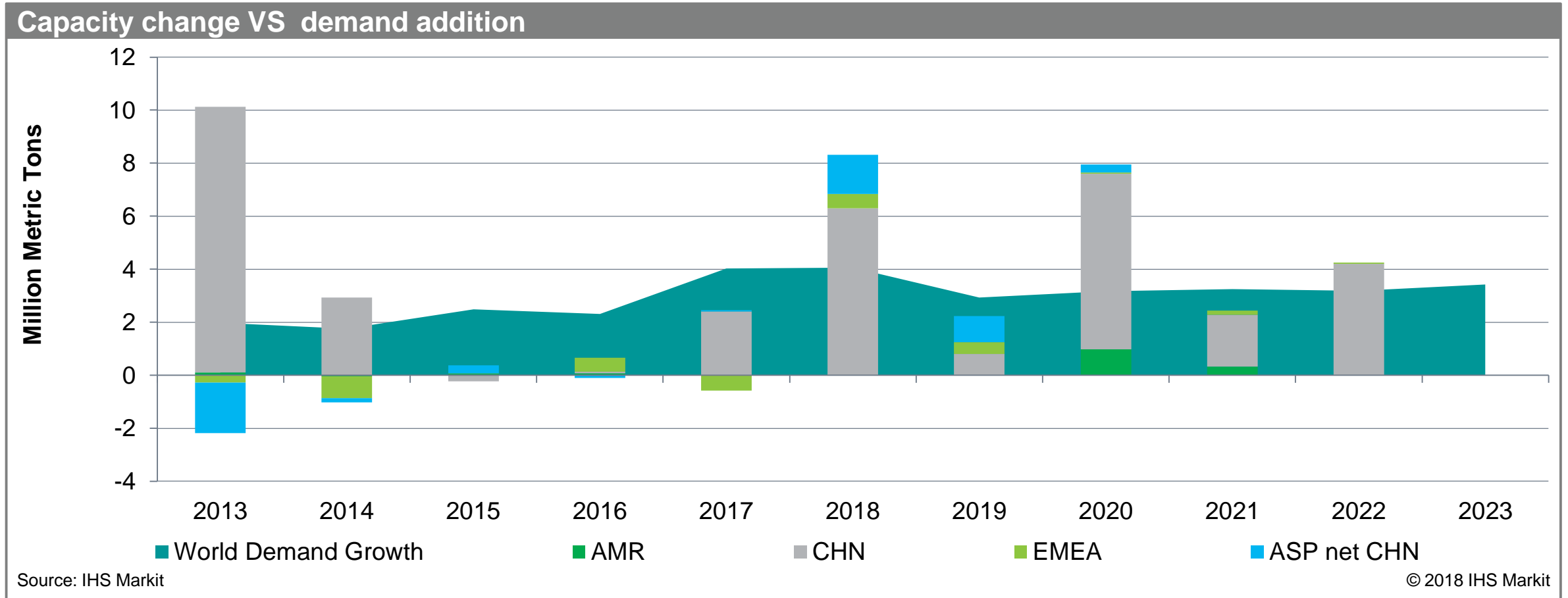


PTA: from oversupplied to tightly balanced

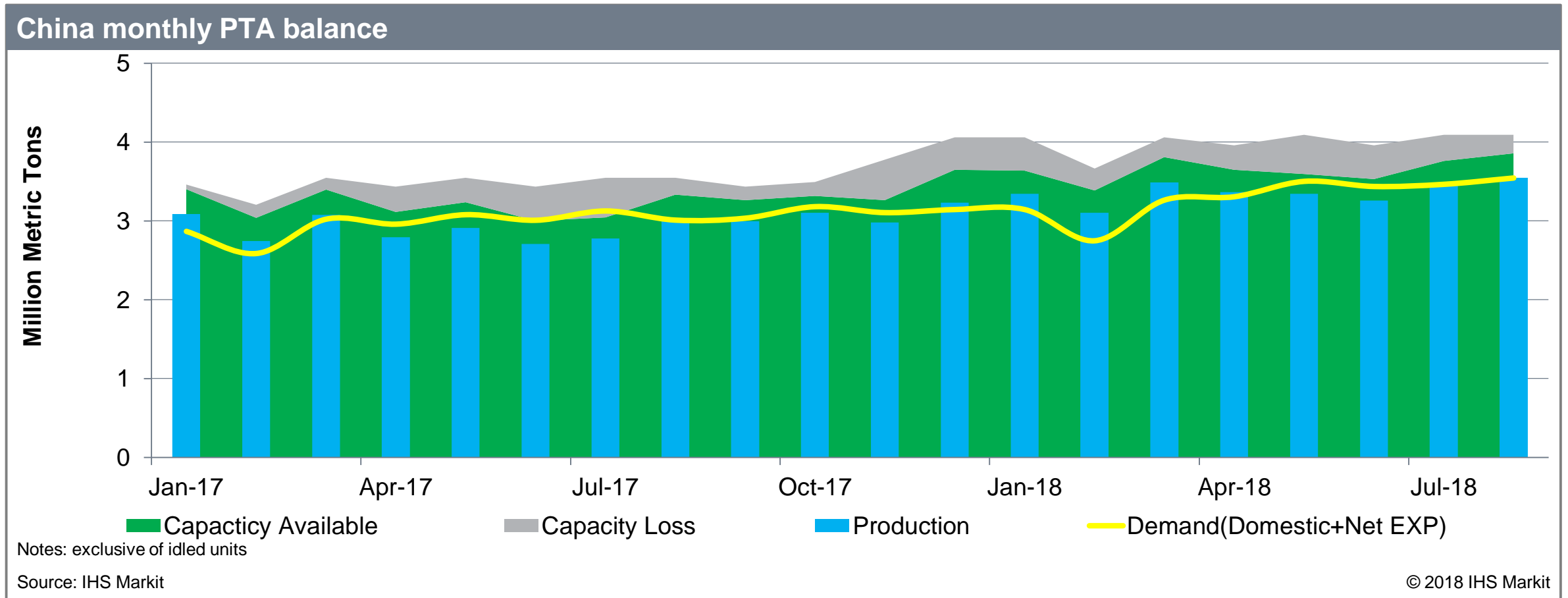
China predominates the PTA industry



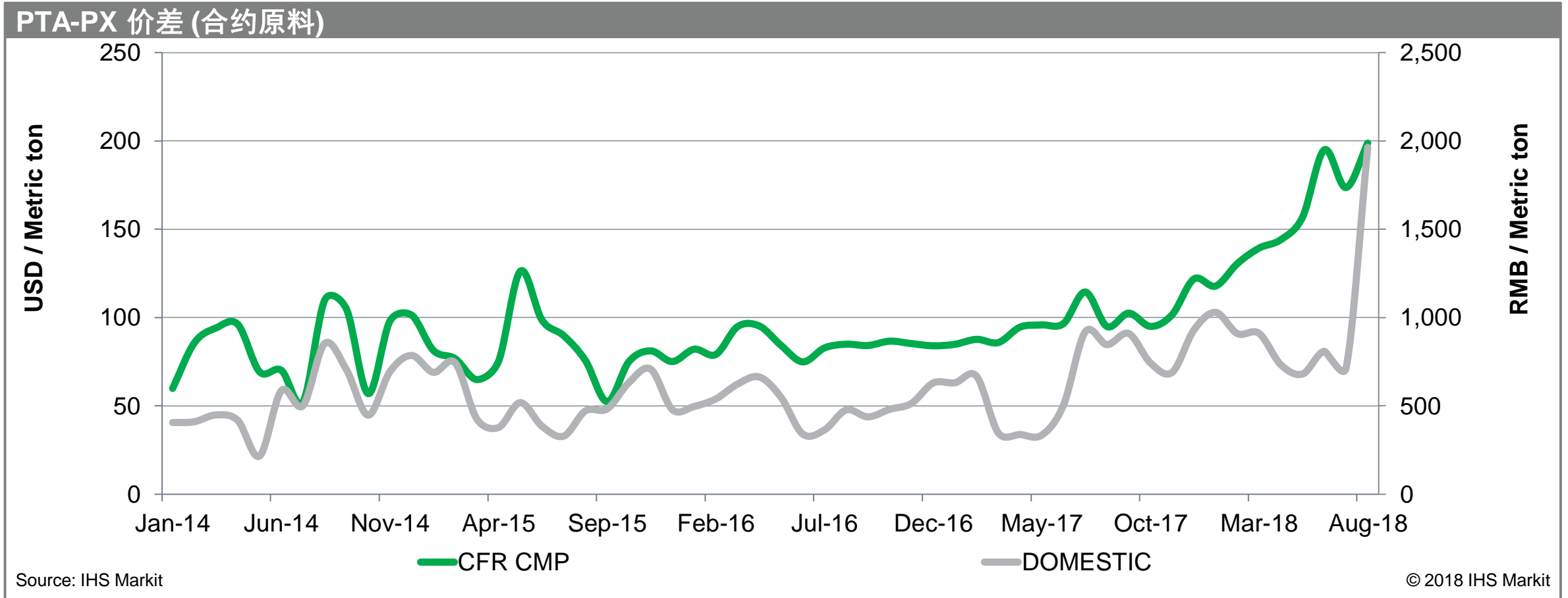
Market rebalancing: slower investment, rationalization and remarkable demand growth



Market appears balanced or even tight except for specific period

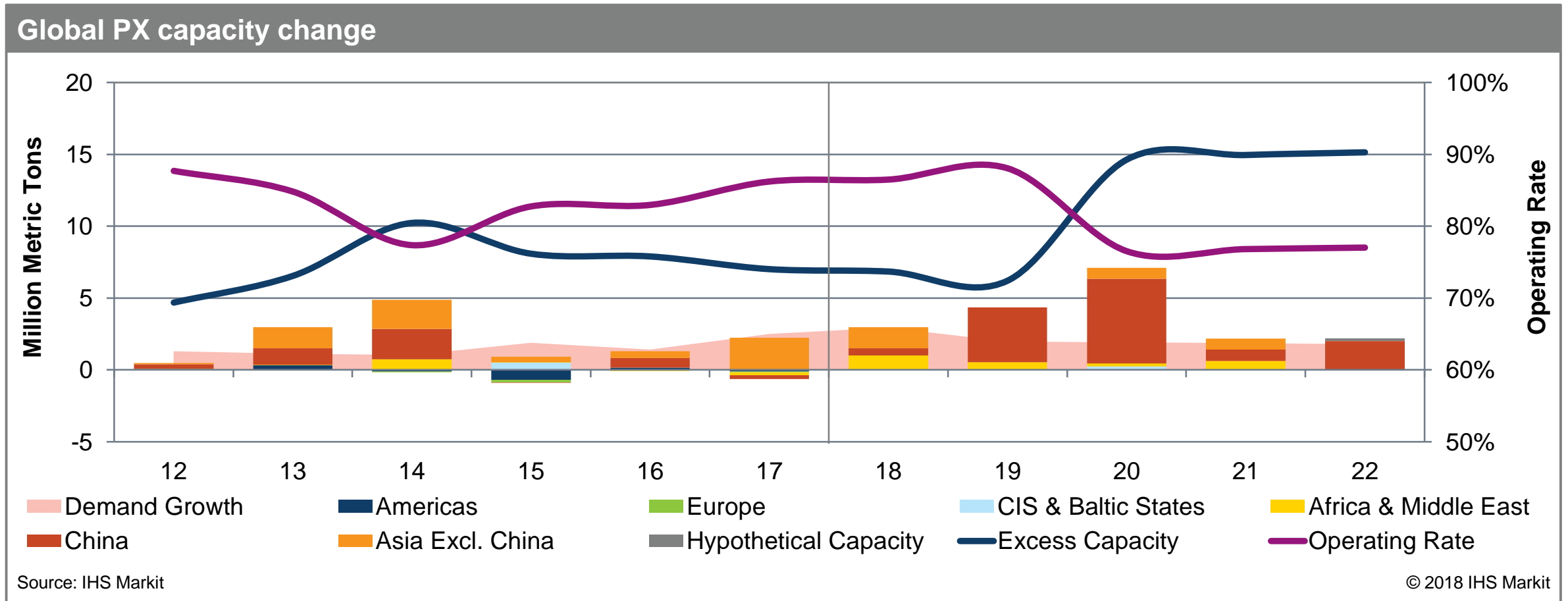


PTA-PX spreads have broken through the previous box



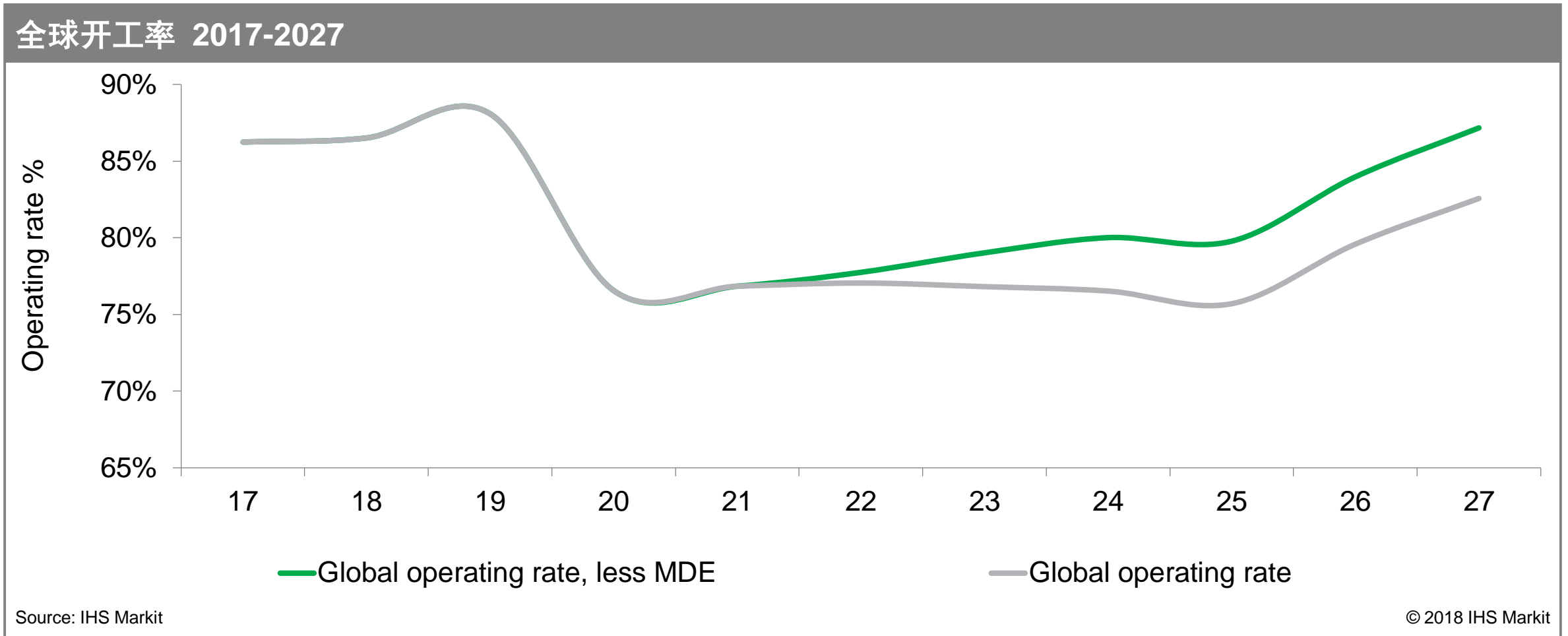
PX: drastic change on the horizon

Significant new capacity will come on-stream



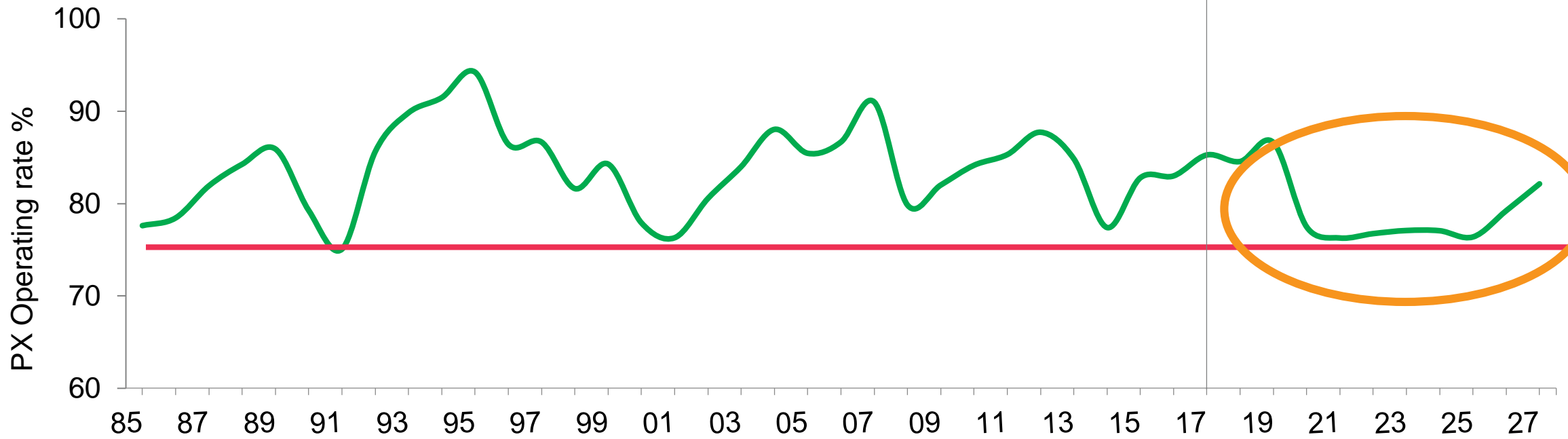
Statistically PX sits on a huge over-capacity, at levels not seen before. Question is can all these assets operate and at what cost?

Collapse in operating rate expected; recovery depends on ME hypo-capacity



PX operating rates never this bad for so long

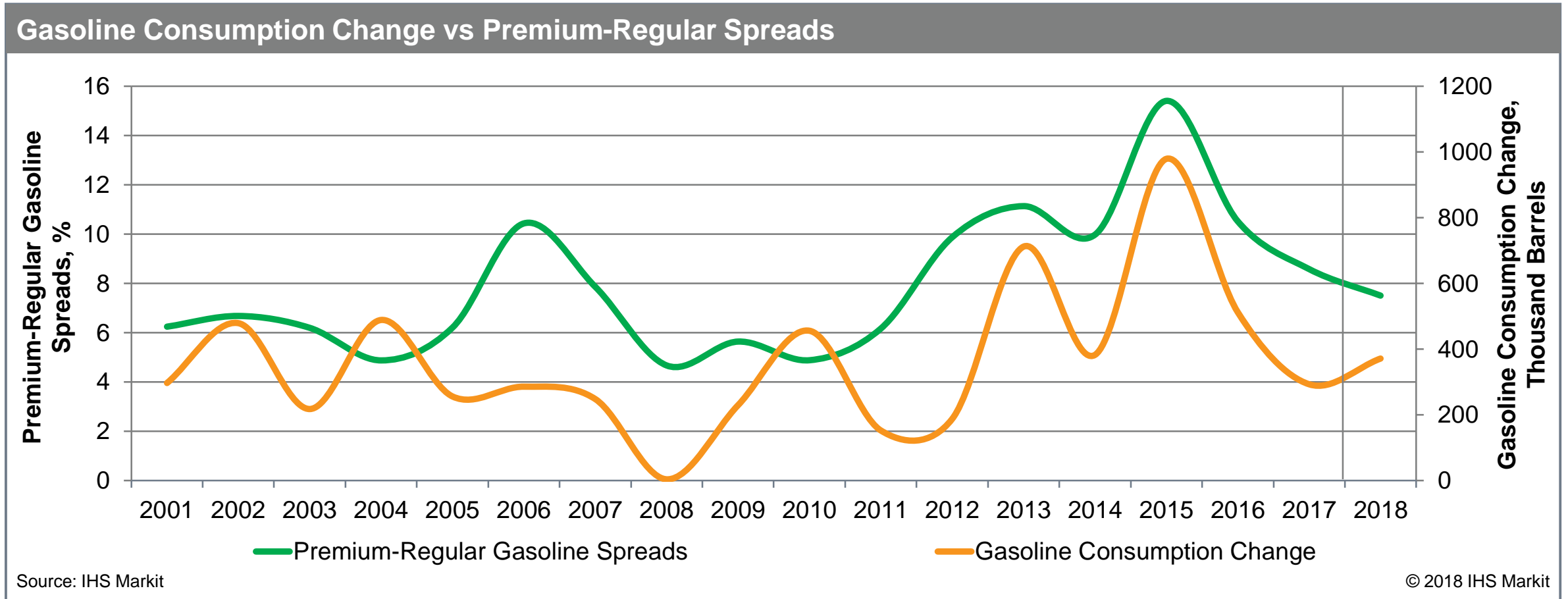
Global operating rate 1985 - 2027



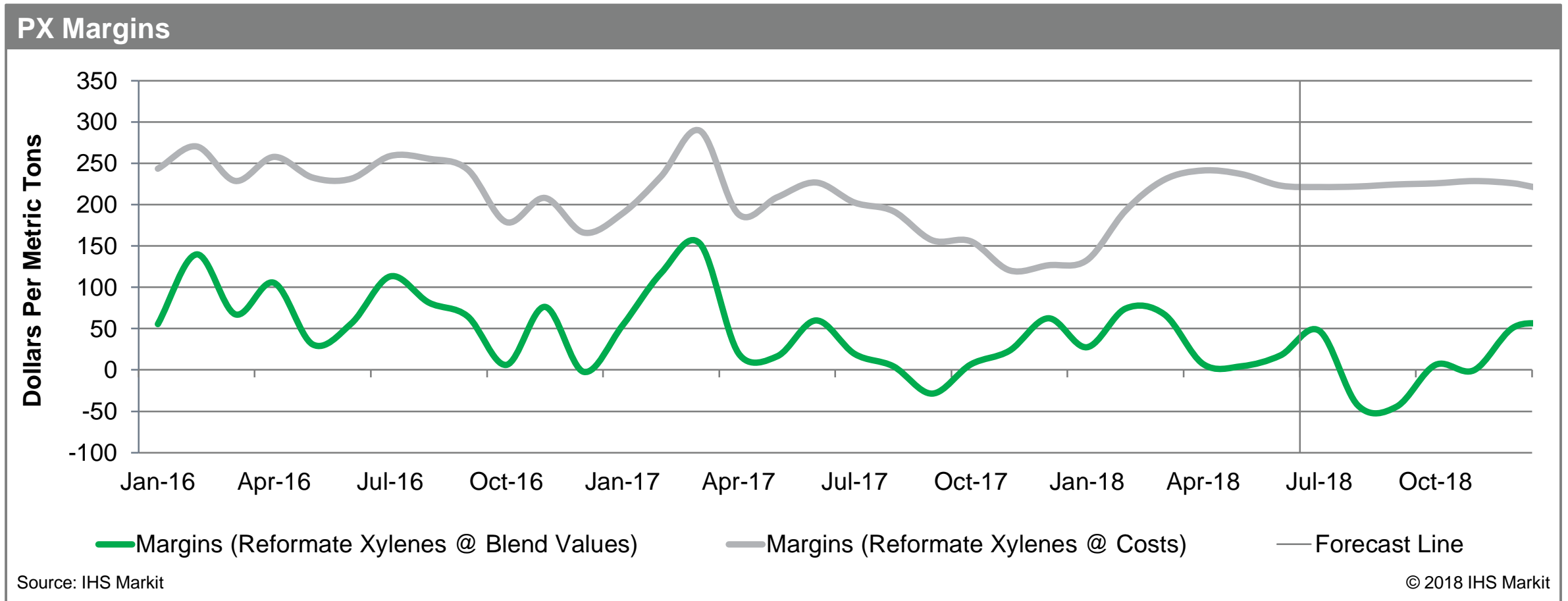
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Gasoline intermittently impacts PX



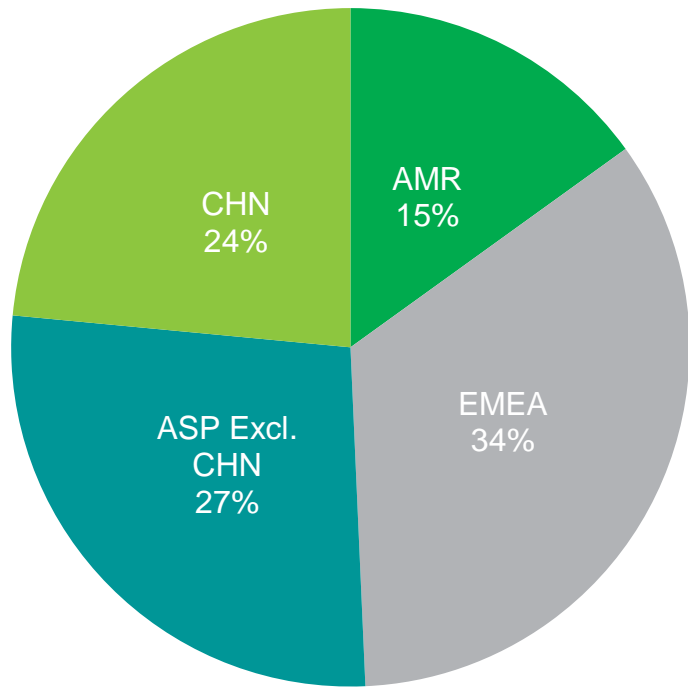
Profitability depends on how you value the feedstock



MEG: supportive demand; looming threat

China still has a huge supply gap

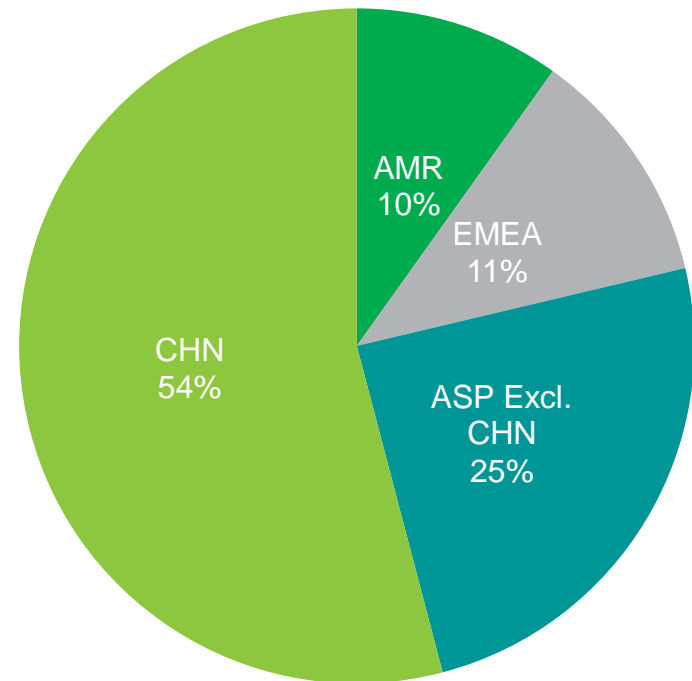
2017 Global capacity 31.53mmt



Source: IHS Markit

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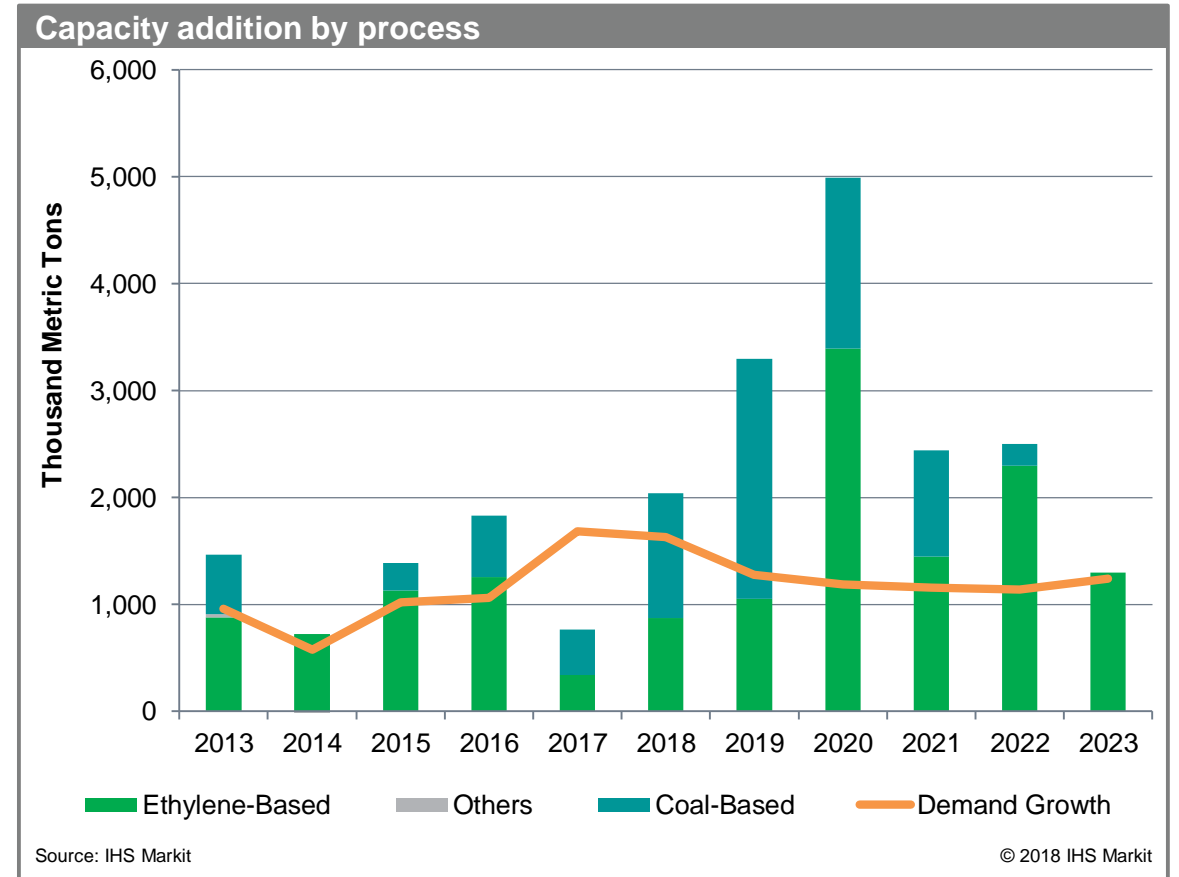
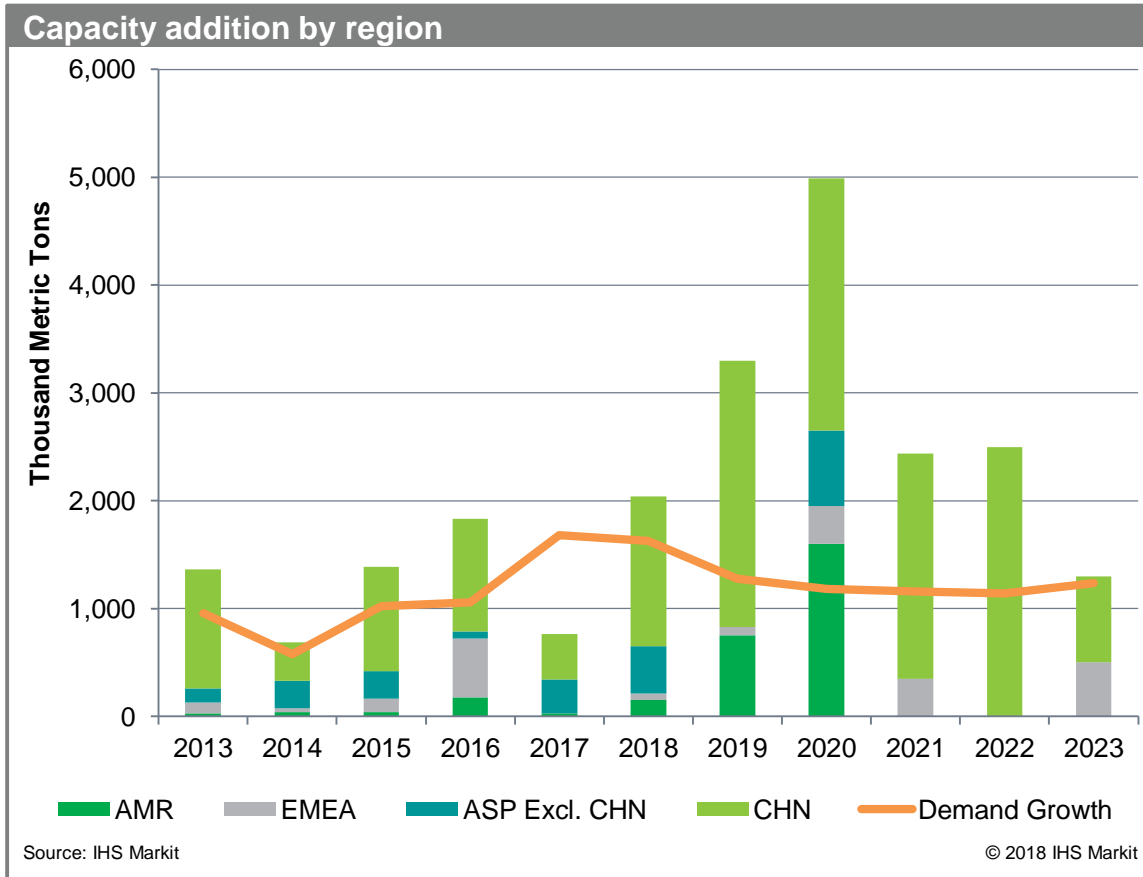
2017 Global demand 27.54mmt



Source: IHS Markit

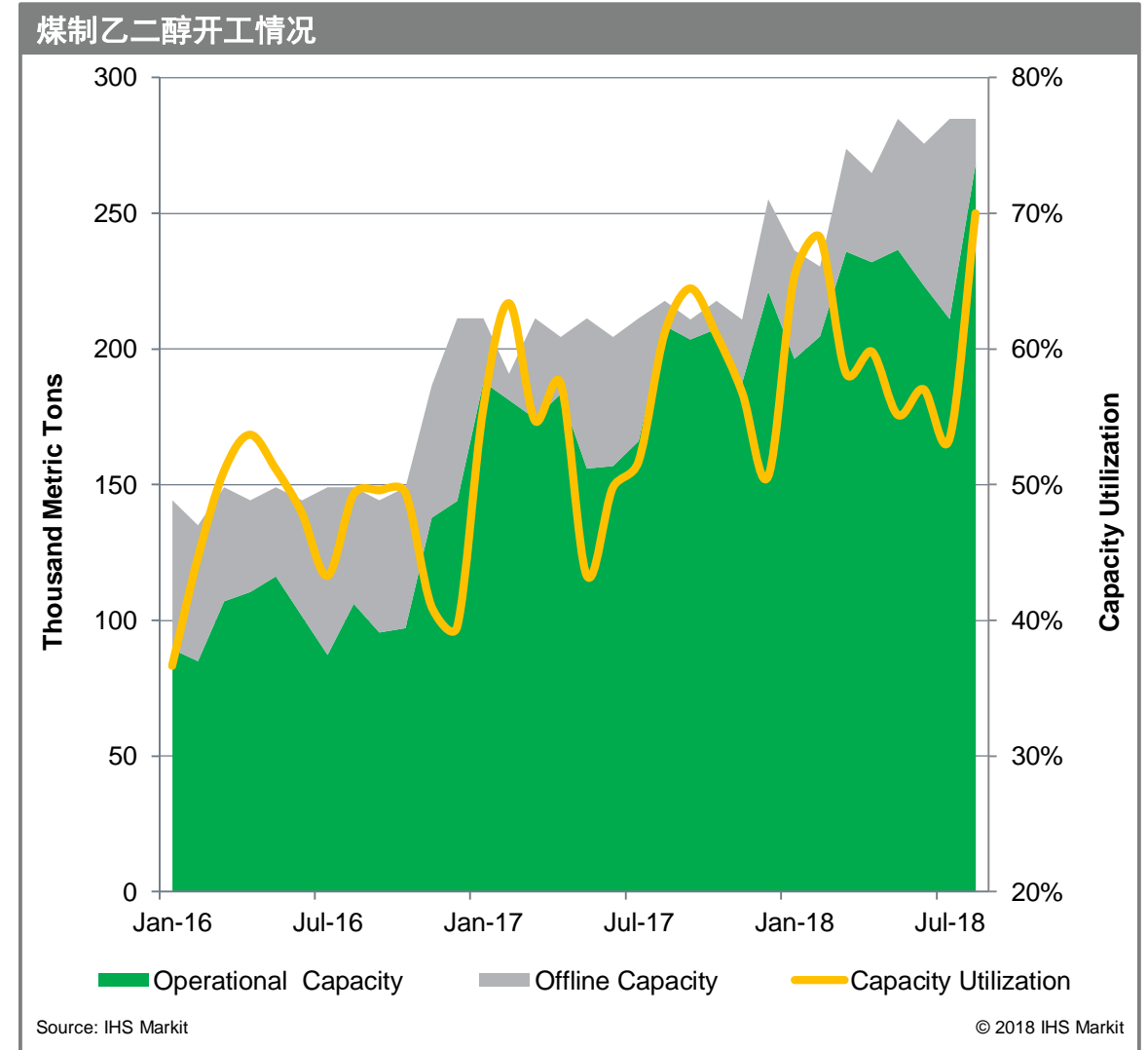
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Large investments come on-stream

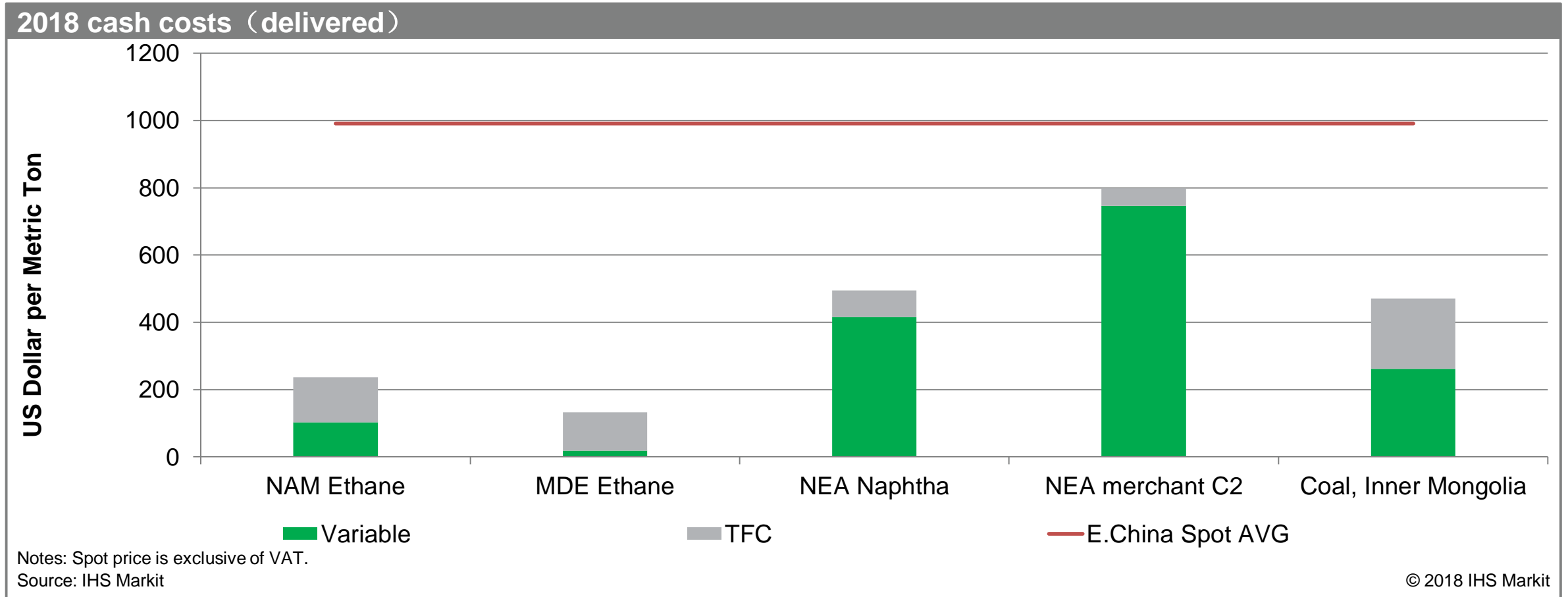


Growing impacts from Coal-based MEG

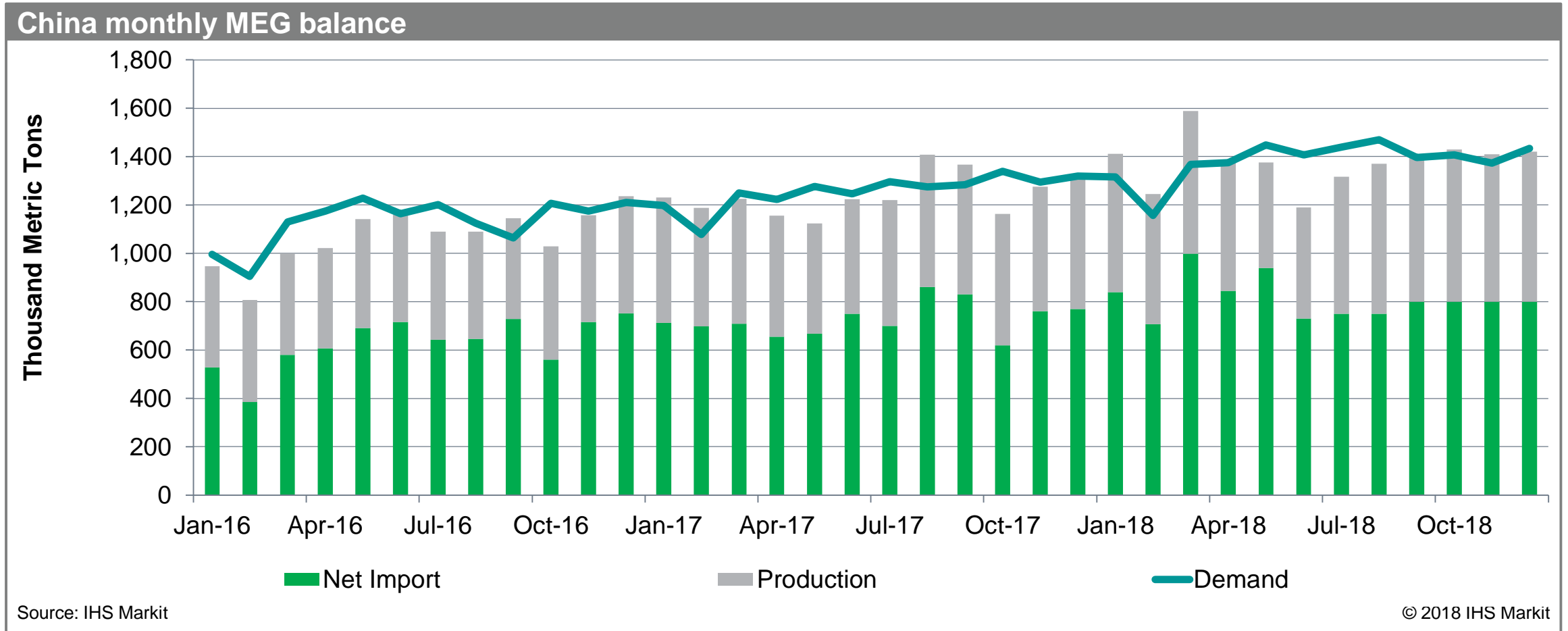
- Current operational capacity exceeds 3mmt per year; two new units may commence commercial operation this month; three trial runs expected by the end of September; 4mmt under construction with emerging new projects
- Despite frequent outages due to malfunction or environmental protection-related factors, overall operation continues to improve
- Increasing market acceptance; contract sales to polyester; will benefit from the revision of national standard



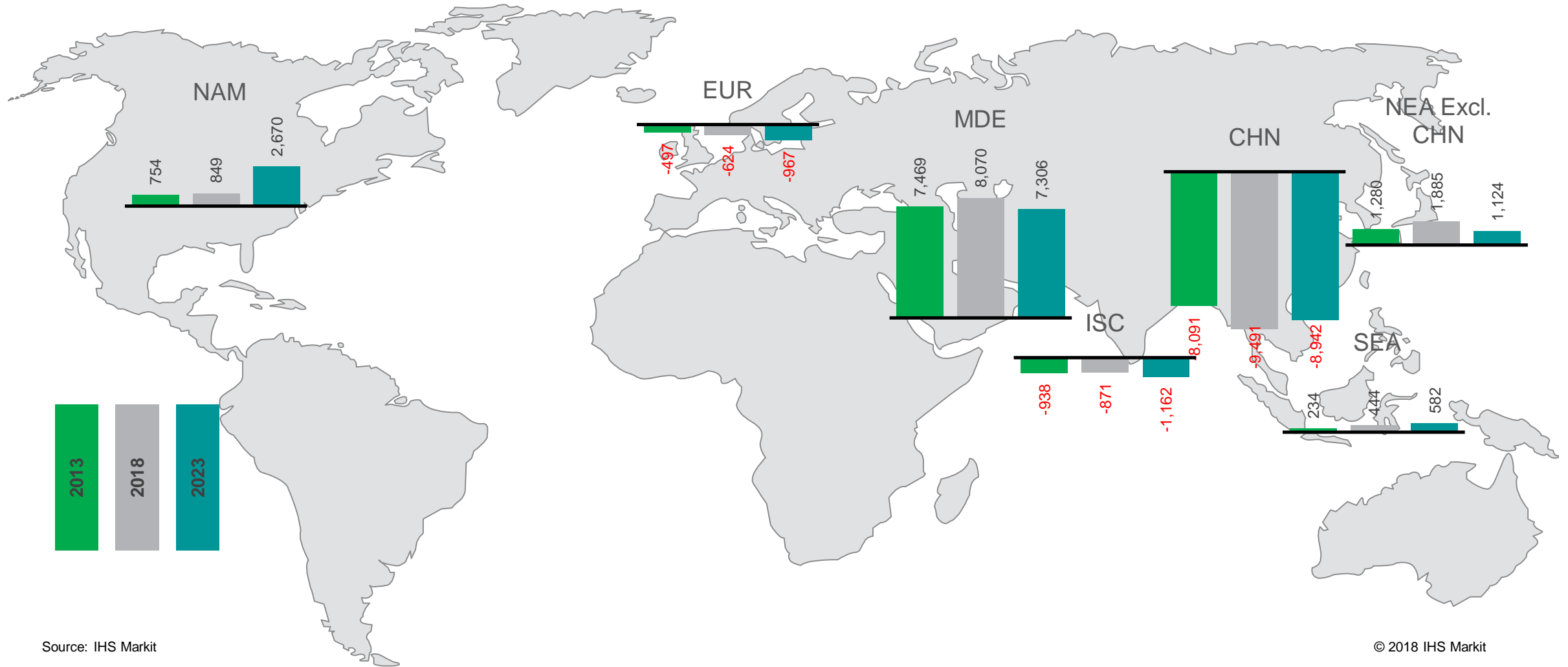
Coal-based MEG demonstrates relative cost advantage



Intermittent supply tightness



New capacity in NAM set to squeeze existing exporters



Source: IHS Markit

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Main Takeaway

- Strong polyester growth reflected a combination of supportive factors with a pullback expected
- Investments in PTA pick up but structural oversupply seems unlikely
- PX and MEG to face down cycles amid overexpansion

Thank you