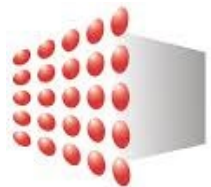


How and Why Have Patterns of China's Outbound Energy Investment Changed under BRI?



ENERGY
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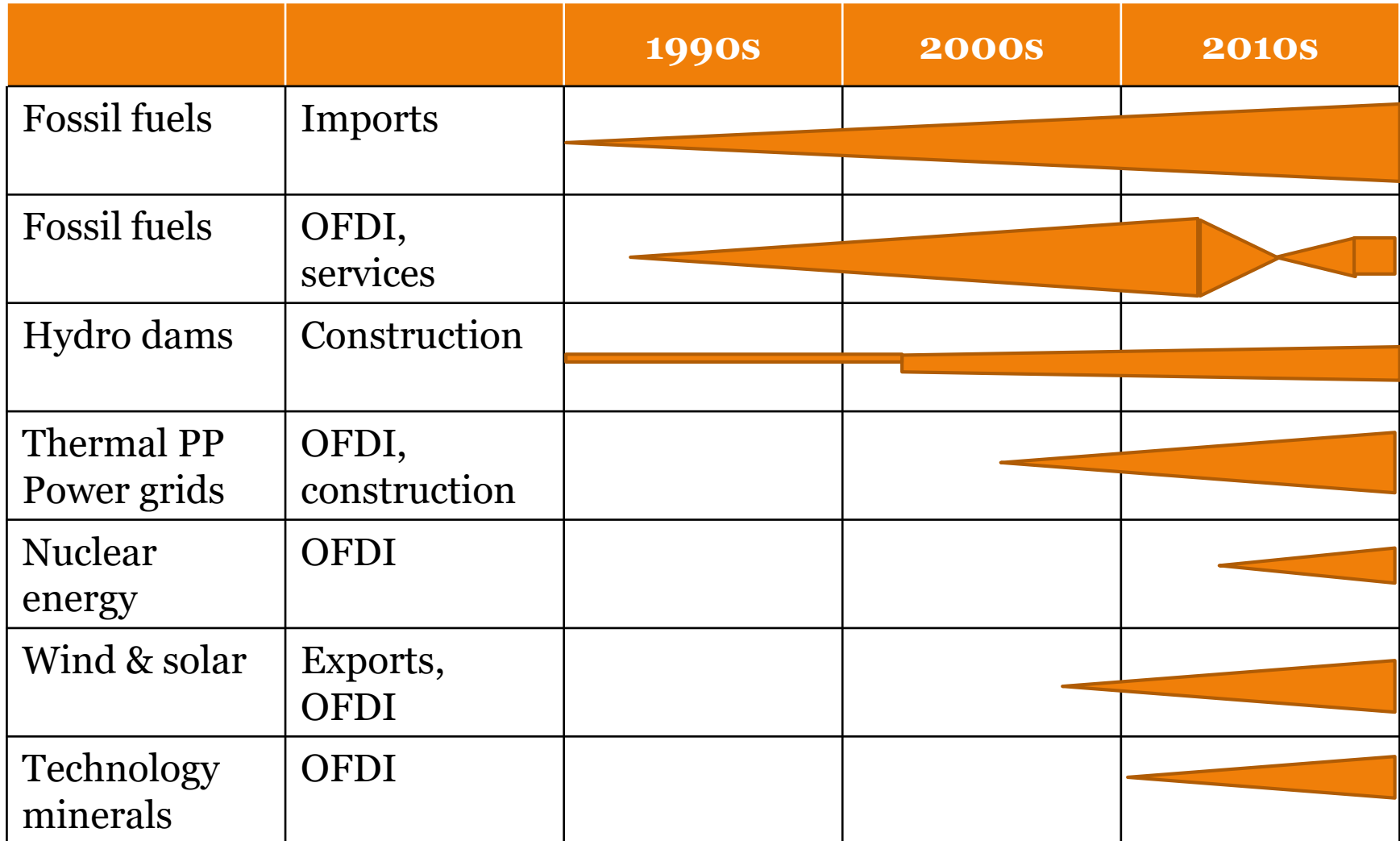
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Hong Kong University of Science & Technology

9 November 2020

1. The story in brief

China's energy industries go out



Go Out



BRI

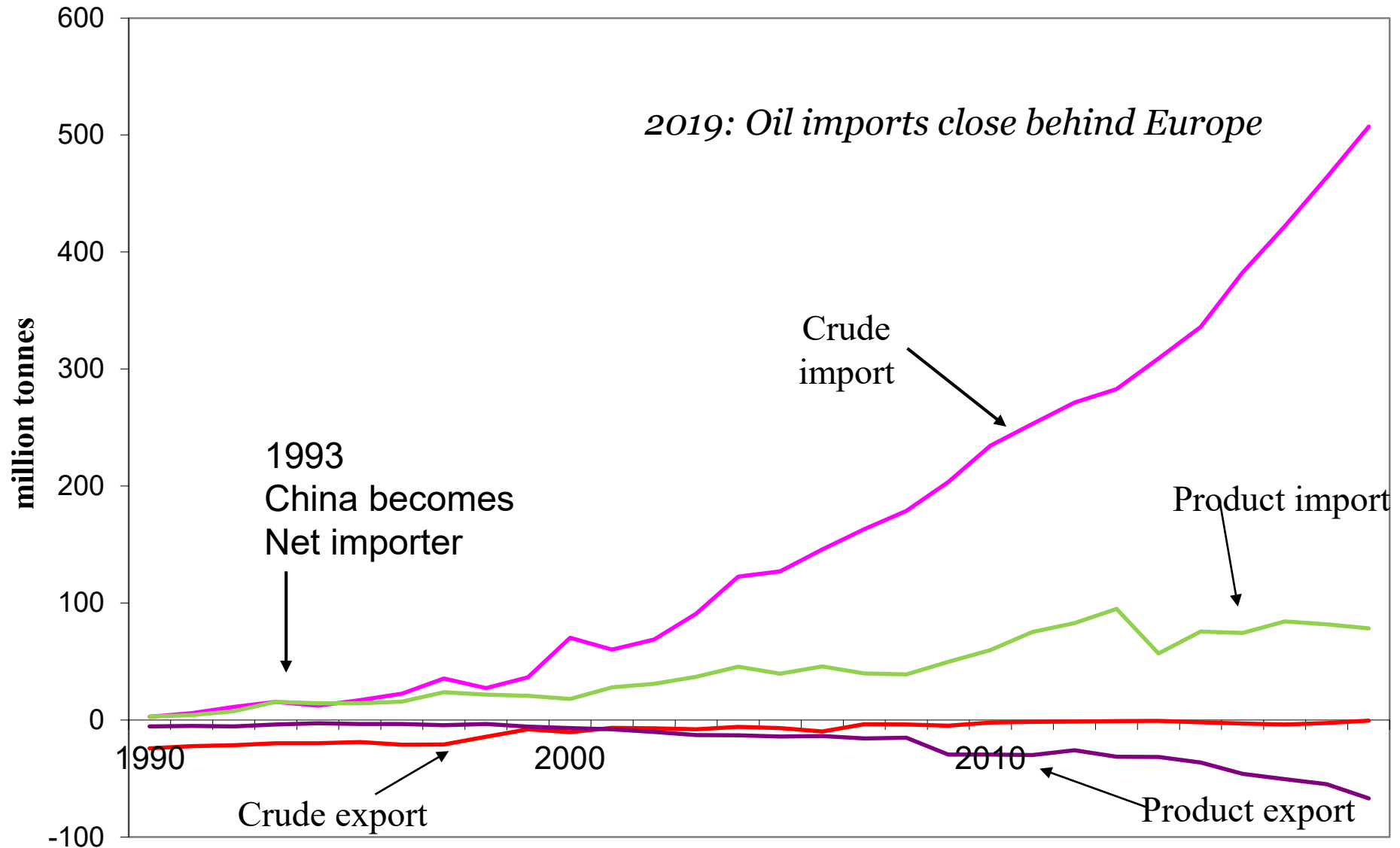


Corporate motivations for internationalisation

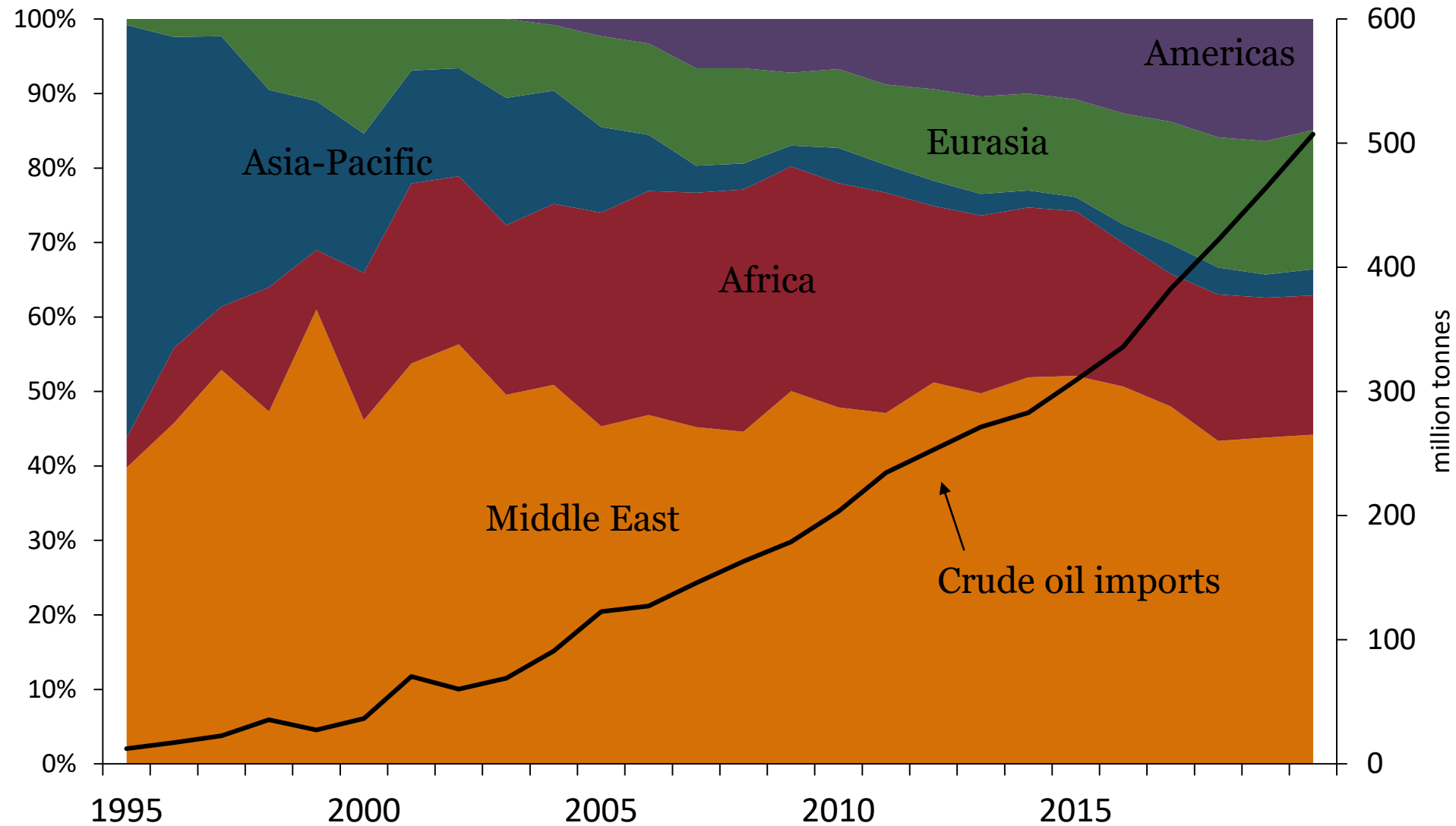
	Resource	Market: investment	Market: products/ services	Strategic assets (technology, skills)
Fossil fuels	x	X	X	x
Hydro dams	x	x	X	
Power grids	x	X	X	
Thermal PP		X	X	
Nuclear energy		X	X	x
Wind & solar		X	X	X
Minerals	X	X		

2. Fossil fuels

China's oil imports & exports

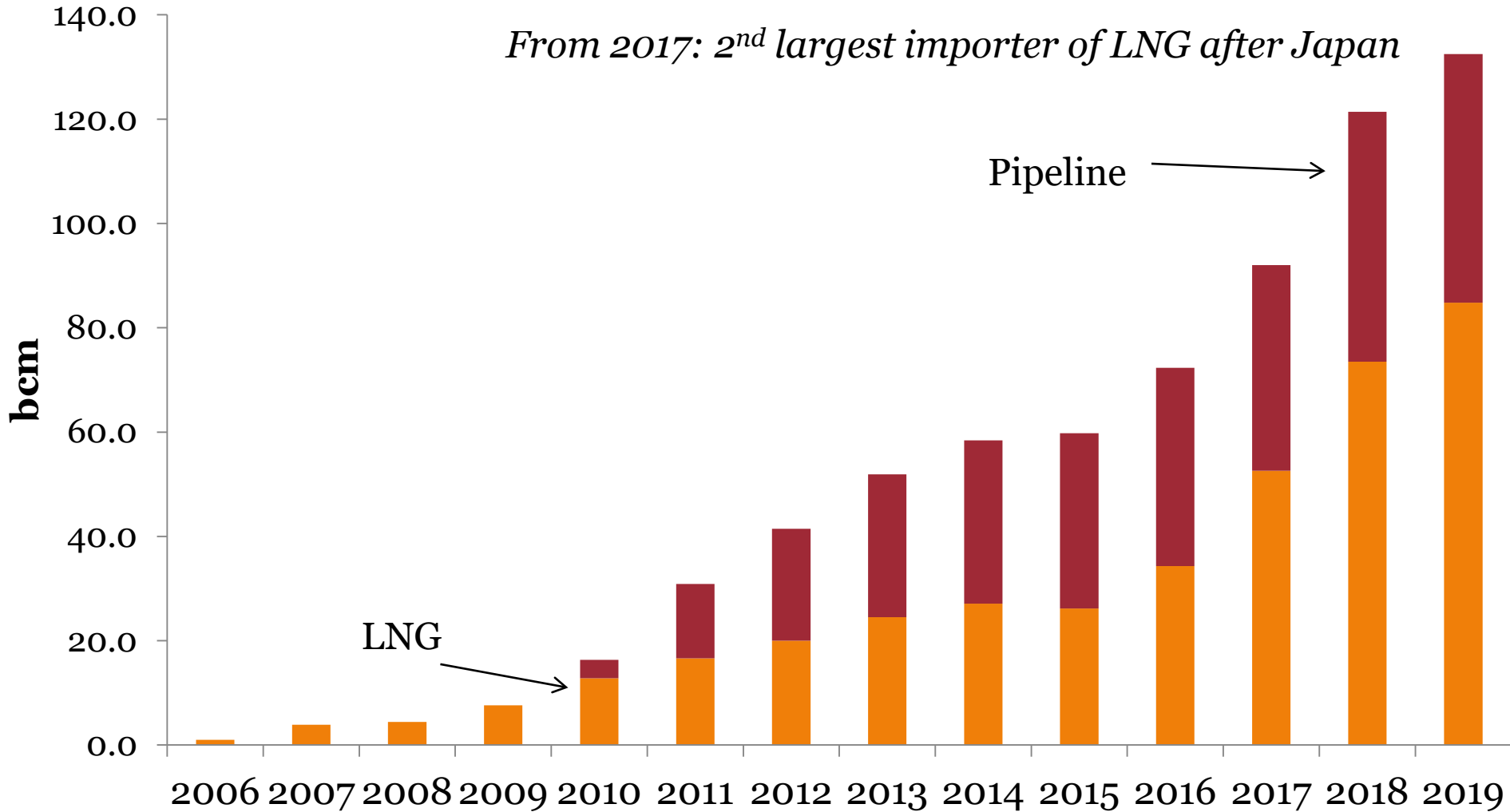


Sources of China's crude oil imports

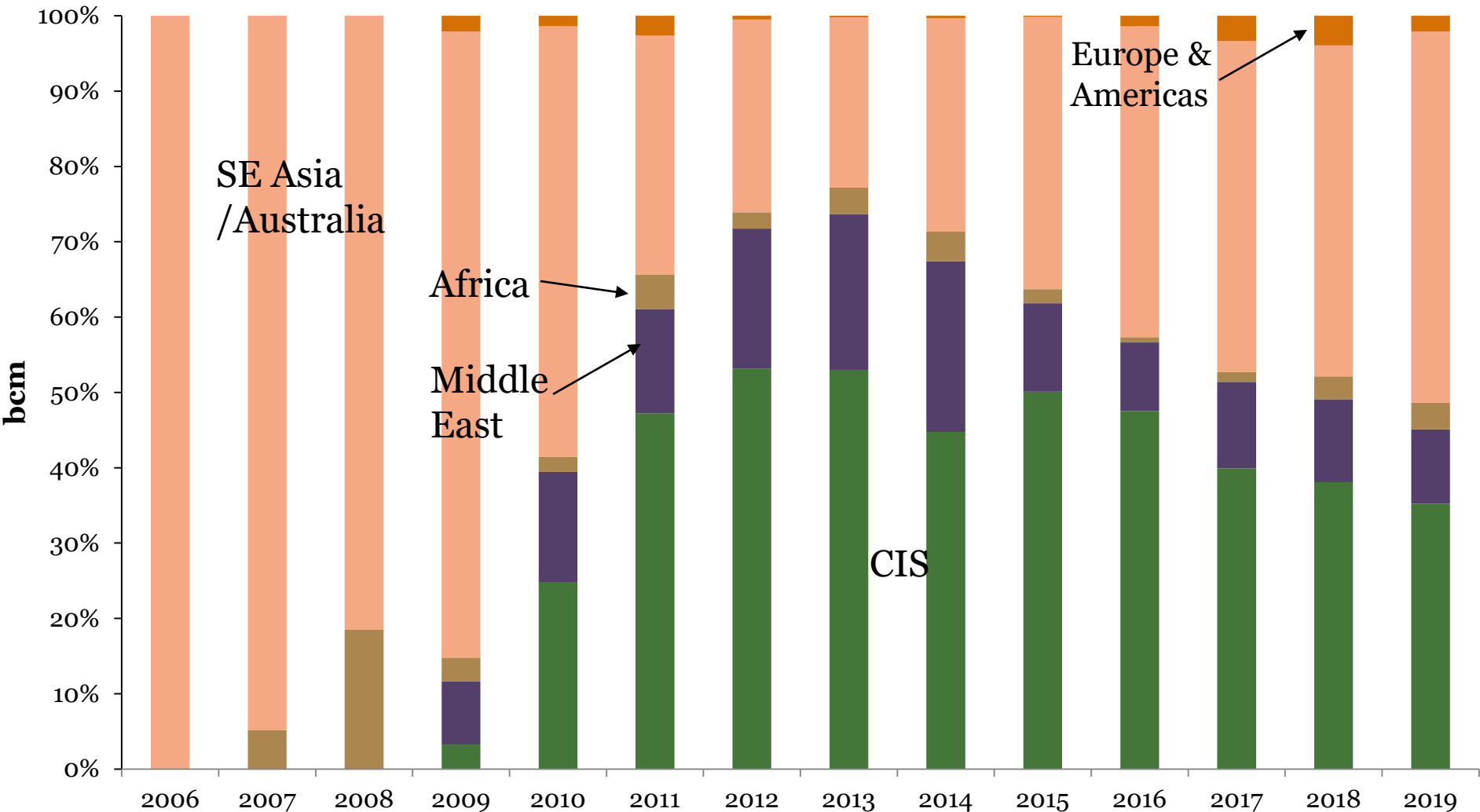


China's gas imports

From 2017: 2nd largest importer of LNG after Japan



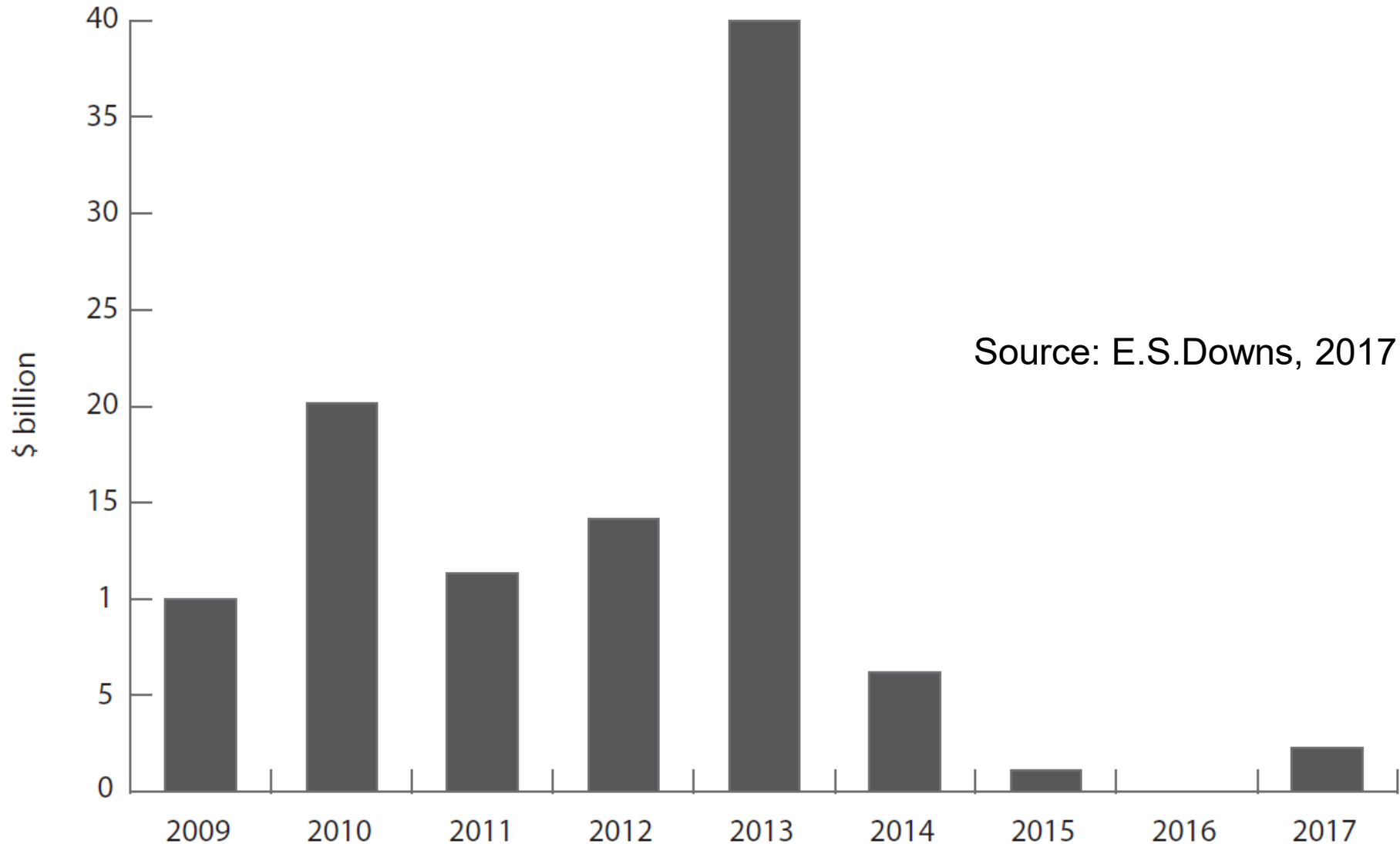
Sources of China's gas imports



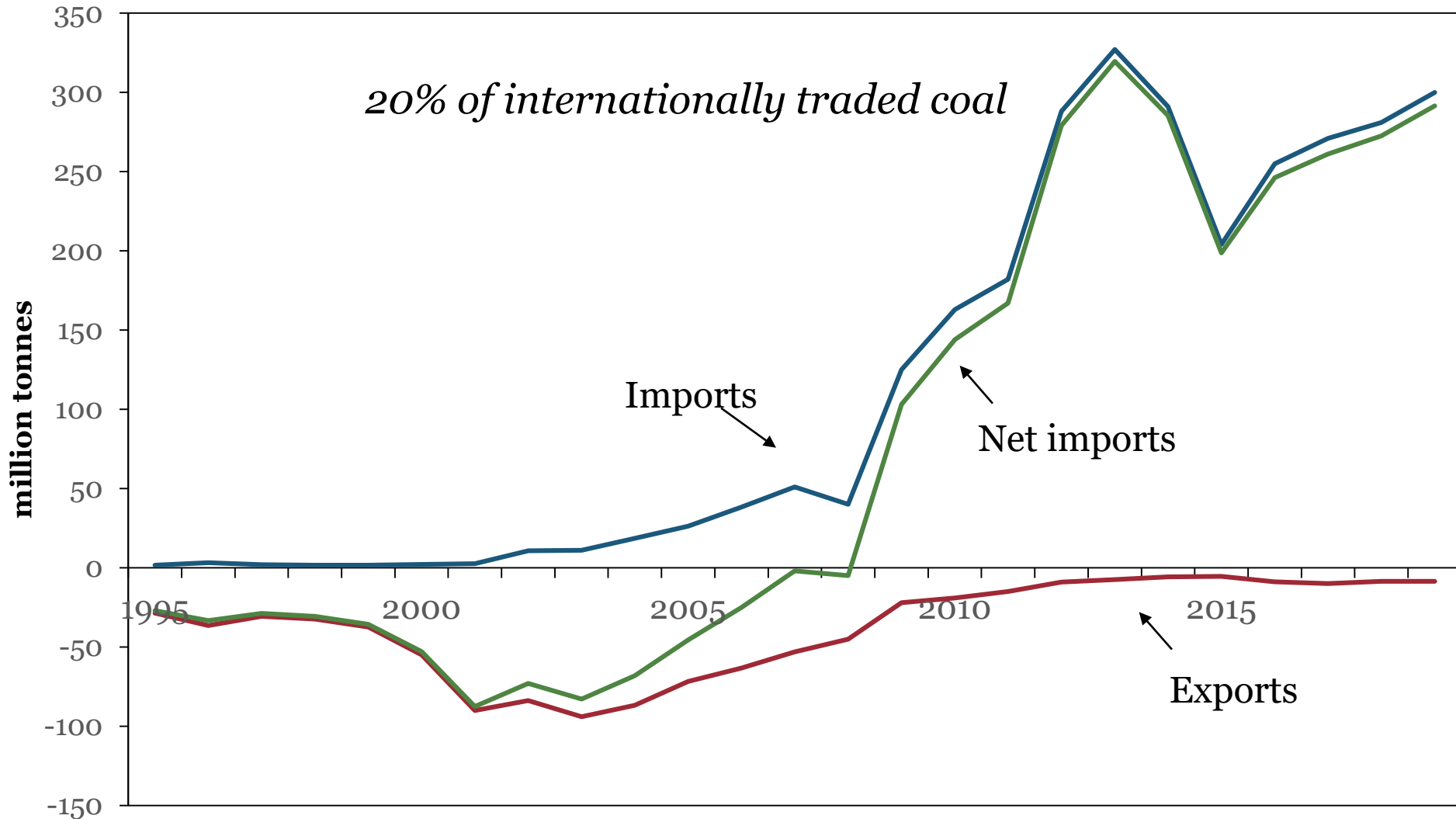
Destinations of upstream investments by Chinese NOCs

C.I.S. + Europe	Middle East & North Africa	Sub-Saharan Africa	S, SE & NE Asia, Australia	Americas
2.	4.	3.	5.	1.
Azerbaijan Kazakhstan Kyrgyzstan Russia Turkmenistan Uzbekistan United Kingdom	Algeria Chad Egypt Iraq, Iran Libya, Mali Mauritania Morocco Niger Oman, Qatar Saudi Arabia Somalia Syria, Tunisia U.A.E. Yemen	Angola Cameroon Congo Brazzaville Cote d'Ivoire Equatorial Guinea Egypt Ethiopia Gabon, Kenya Madagascar Mozambique Nigeria Sao Taome Sudan Tanzania	Australia East Timor Indonesia Mongolia Myanmar Pakistan Papua New Guinea Philippines Thailand	Argentina Bolivia Brazil Canada Colombia Costa Rica Cuba Ecuador Peru Trinidad & Tobago U.S.A. Venezuela

Chinese NOCs overseas acquisitions



China's international coal trade



3. Electrical power

Thermal and hydro power

Thermal power

- Coal-fired power plant construction
 - One of the few remaining suppliers/financiers
 - Mainly sub-critical
- Gas fired power plants
- Africa*, Southeast Asia

Hydroelectric power

- World's largest dam builder
- Very long history
- China EximBank financing + other non-Chinese sources
- Africa, Southeast Asia + Pakistan, Iran, Central Asia

Africa*: Chinese companies contracted about 30% of greenfield power plant projects during 2010-2015 (IEA, 2016)

Power grids and nuclear energy

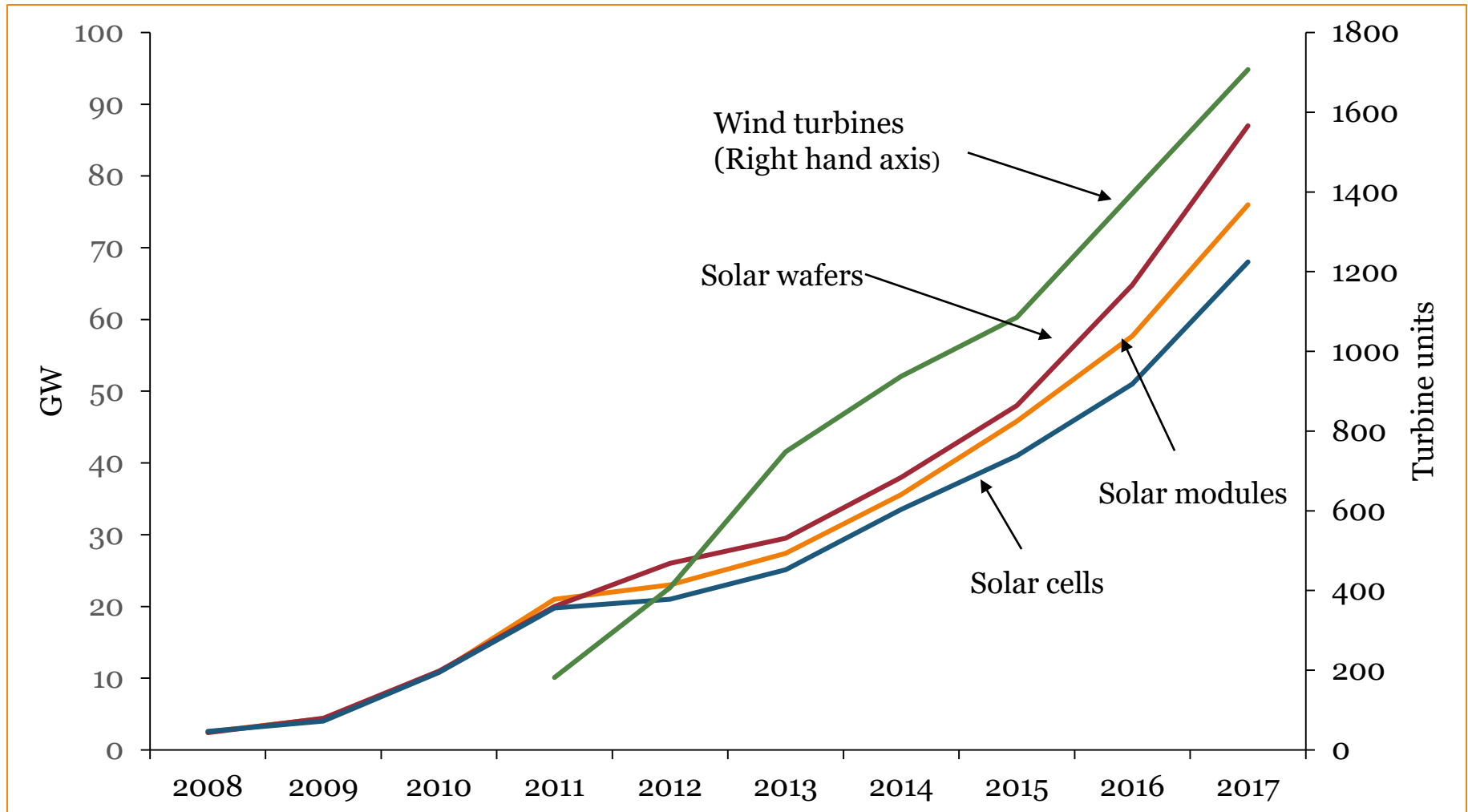
Power grid

- Acquisitions:
 - Portugal, Brazil, Australia, Philippines, Italy, Greece
- Construction:
 - Africa, Southeast Asia
- Ultra-high voltage transmission:
 - Brazil

Nuclear energy

- Under construction:
 - Pakistan
- Planned:
 - Argentina, Romania
- Potential:
 - UK, Turkey, Iran, South Africa, Kenya, Egypt, Sudan, Armenia

Exports of solar PV equipment & wind turbines



Renewable energy

Solar

- Exporting from 2004
 - **No domestic incentives**
- Trade disputes from 2011, after which:
- Sell more in domestic market
- Manufacture overseas
- Buy technology companies
- Deploy installations overseas
- Exports surge again from 2015

Wind

- 2008: Goldwind buys Vensys for technology
- 2011: supply exceeds domestic demand
- Exports grow

Technology mineral extraction

Mineral	Use	Chinese activity	Overseas locations
Rare earth metals	Motors, lighting, batteries	Market power	
Uranium	Nuclear energy	Overseas mining	Namibia, Niger, Kazakhstan
Lithium	Batteries	Overseas mining	Bolivia, Australia
Cobalt	Batteries	Overseas mining	DR Congo,
Nickel	Batteries	Overseas mining	Indonesia

4. Conclusions

How and Why Have Patterns of China's Outbound Energy Investment Changed under BRI?

- How? More discerning investment in oil and gas
- Why:
 - Low oil prices, experience, anti-corruption drive
- How? Changing balance:
 - between fossil fuel *and* electrical power industries
 - import of energy raw materials *and* export of technology, construction services & manufacturing
- Why?
 - Growing technological expertise
 - Excess manufacturing and construction capacity

Conclusions

- 25+ year programme of internationalization
- Mainly SOEs, strong state support
- Main motivation is business development
 - Investment, equipment, services
- Main driver has been changes in domestic market, combined with technological development
 - >>> fossil fuels first, then electrical power industries
- BRI has probably had only modest influence on corporate decisions and behaviours