World's energy outlook and its possible consequences for the shipping industry

Selected energy drivers influencing shipping

Jakub Walenkiewicz
1st of June 2011

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Content

Petroleum products – new refineries

Crude oil supply - offshore

Role of coal in power generation

Renewable energy – offshore wind

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Refineries

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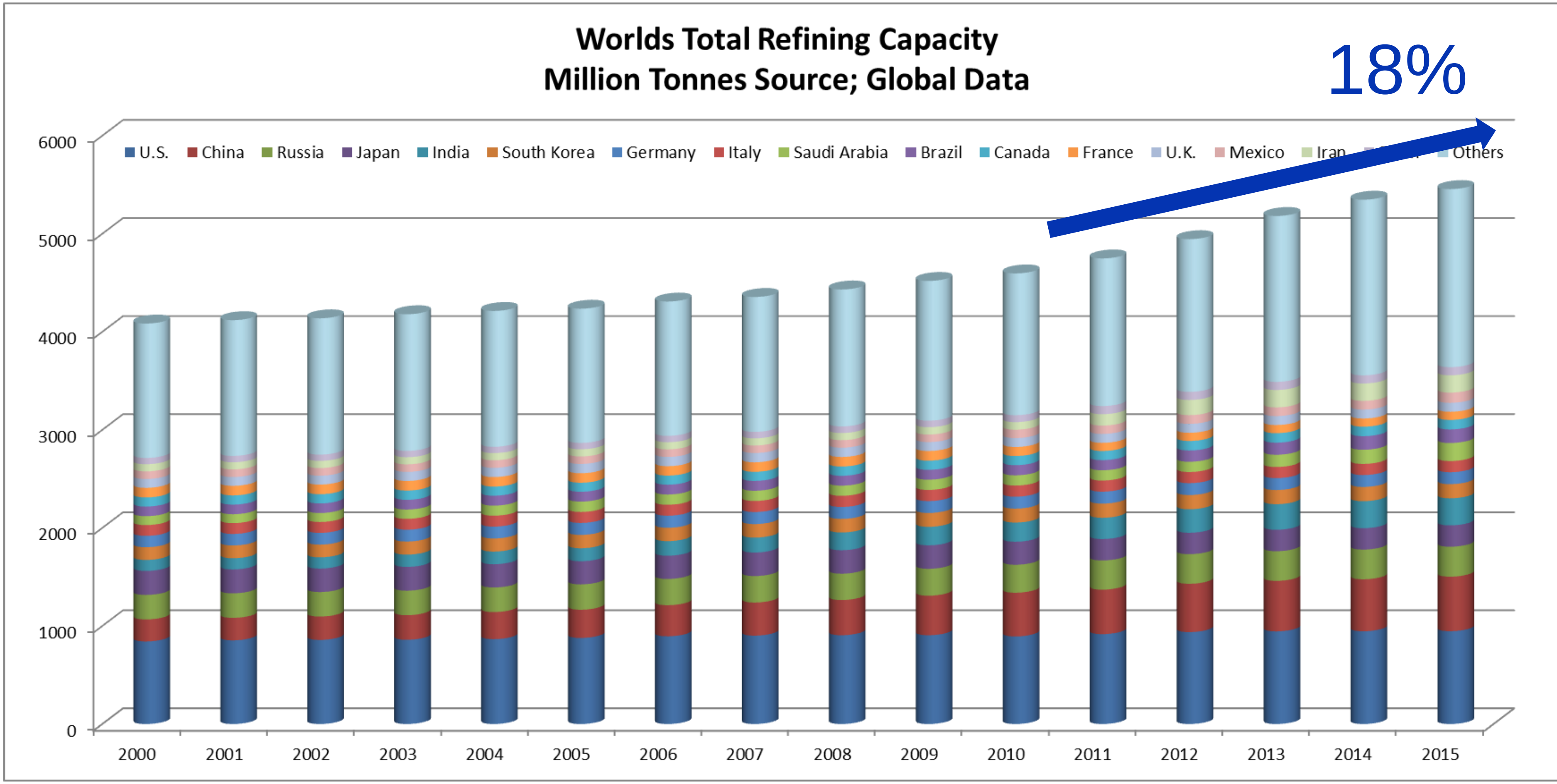
Refining capacity development



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Some facts…

Nearly 20% growth in capacity until 2015 – 620 MMTPA (68 new refineries)

51 new refineries are planned in Asia Pacific, Middle East and Africa

Middle East refineries will primarily focus on export (370 MMTPA)

Asia Pacific (except from India) focused more on domestic markets (240 MMTPA)

Very little expansion in Europe and North America due to environmental regulations

Top 5 countries (Saudi Arabia, Iran, India, China, Brazil) – 43% of the total growth

High demand for petroleum products increases competitiveness of the industry

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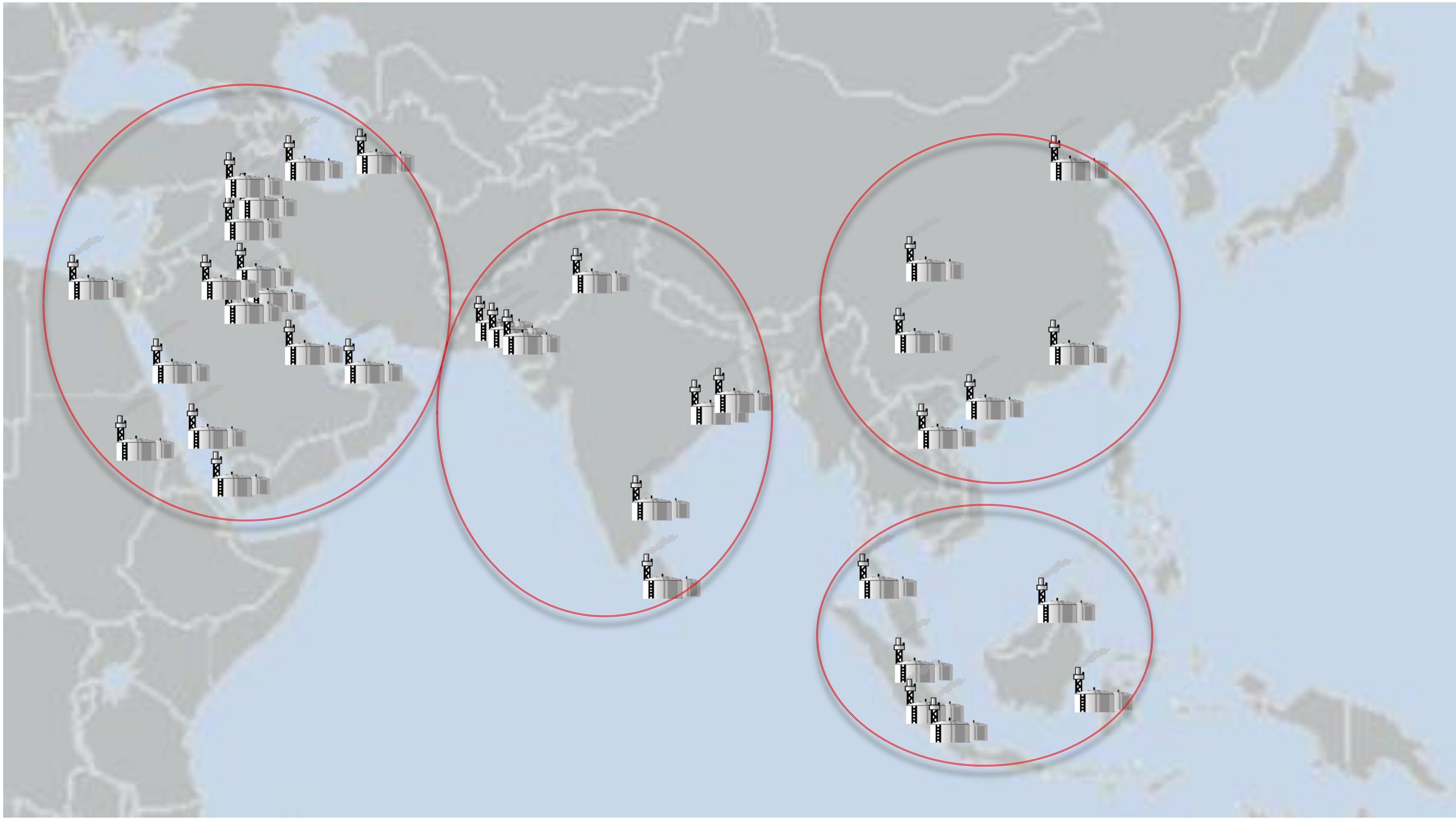
Planned refineries in the Middle and Far East region 2010-15



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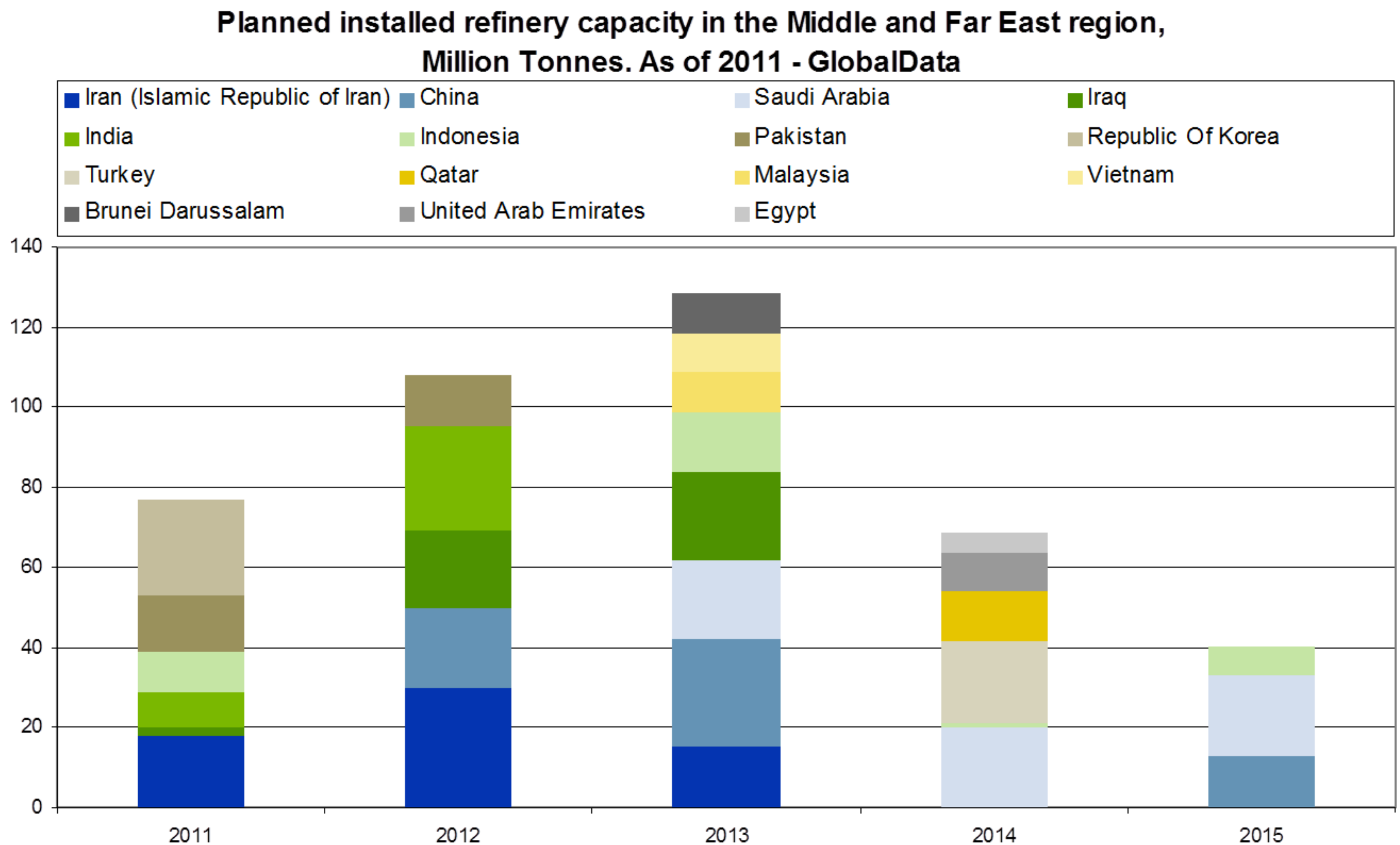
Refineries



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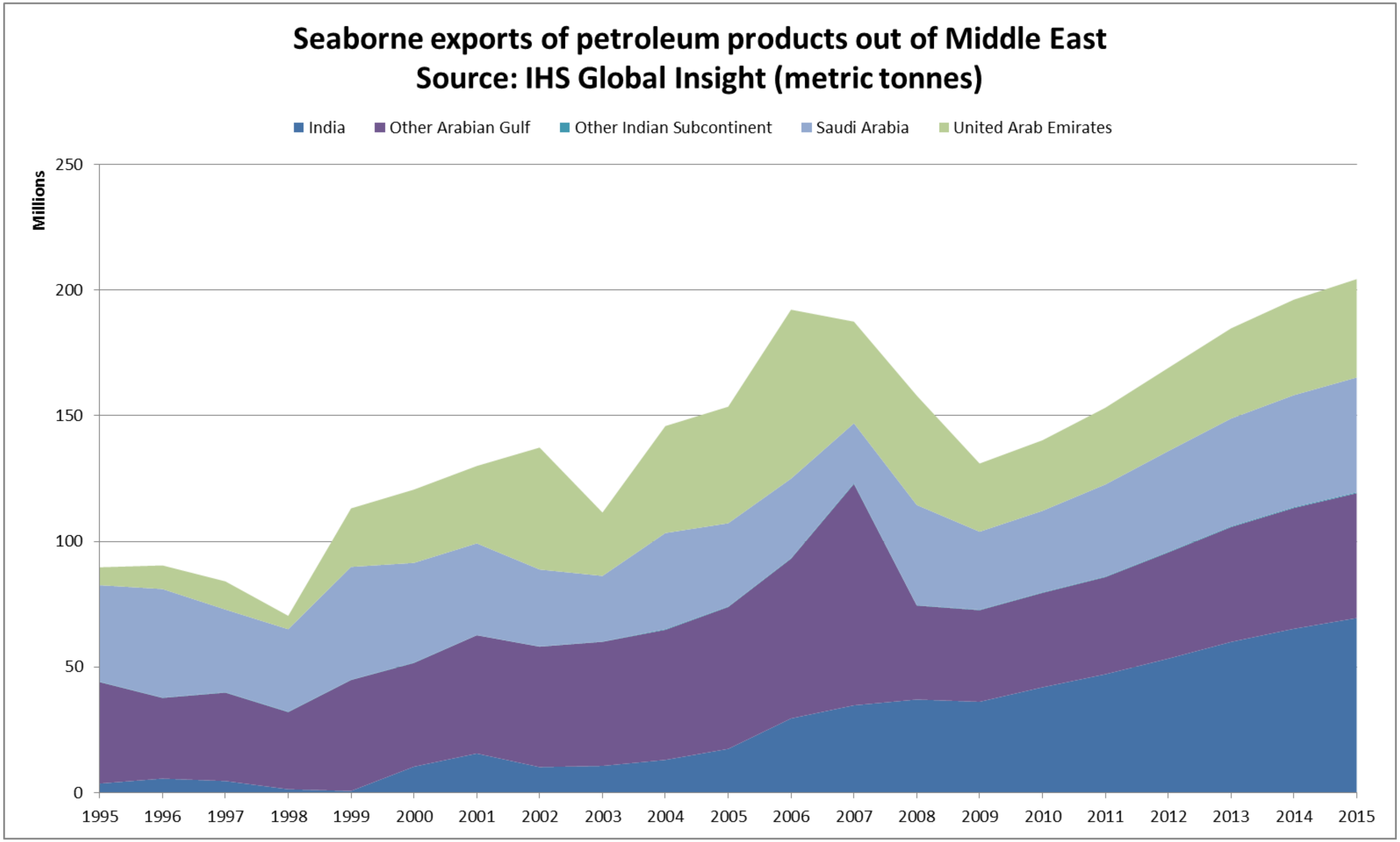
Middle East – petroleum seaborne export



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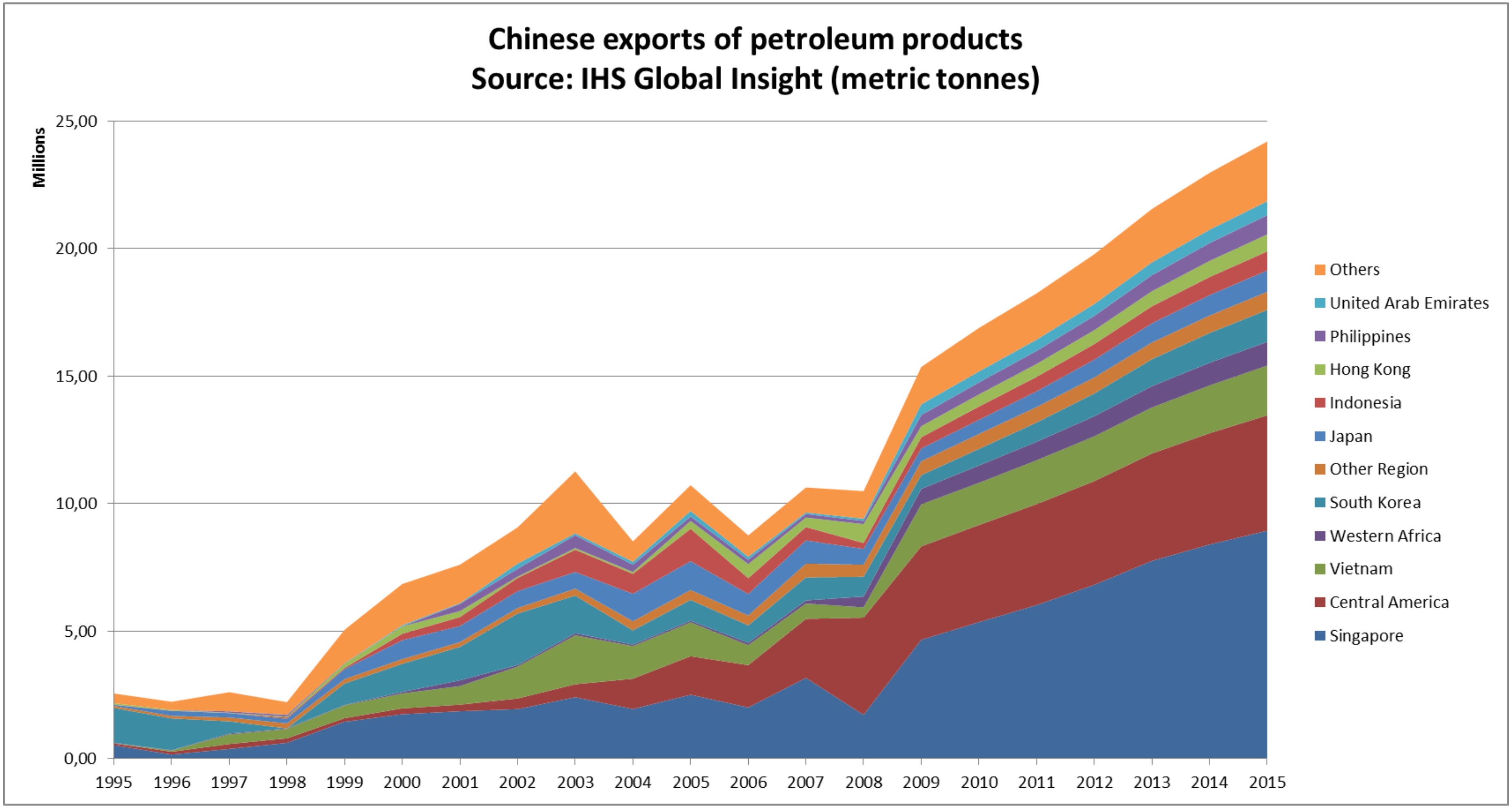
China – petroleum seaborne export



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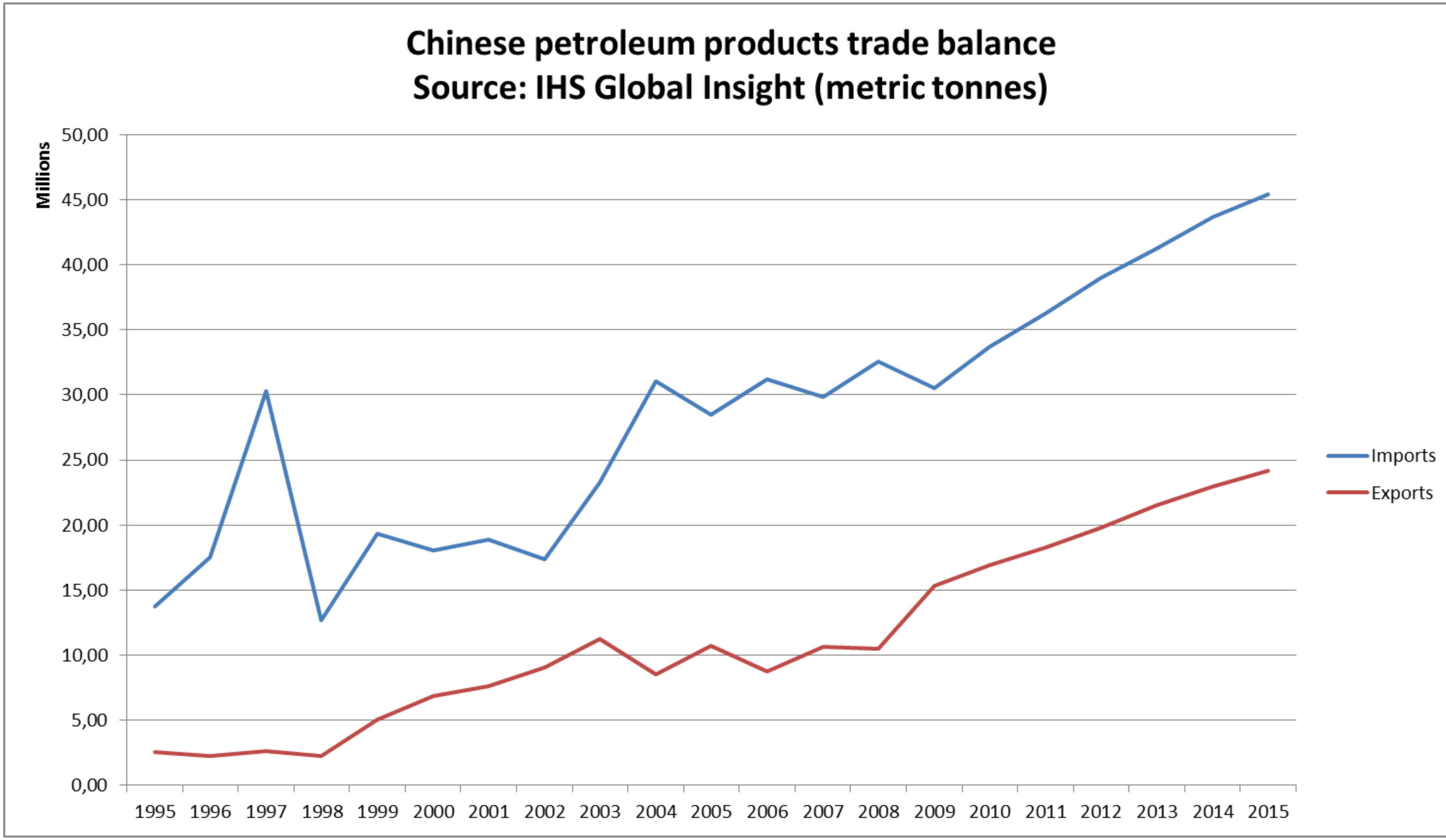
China – import/export



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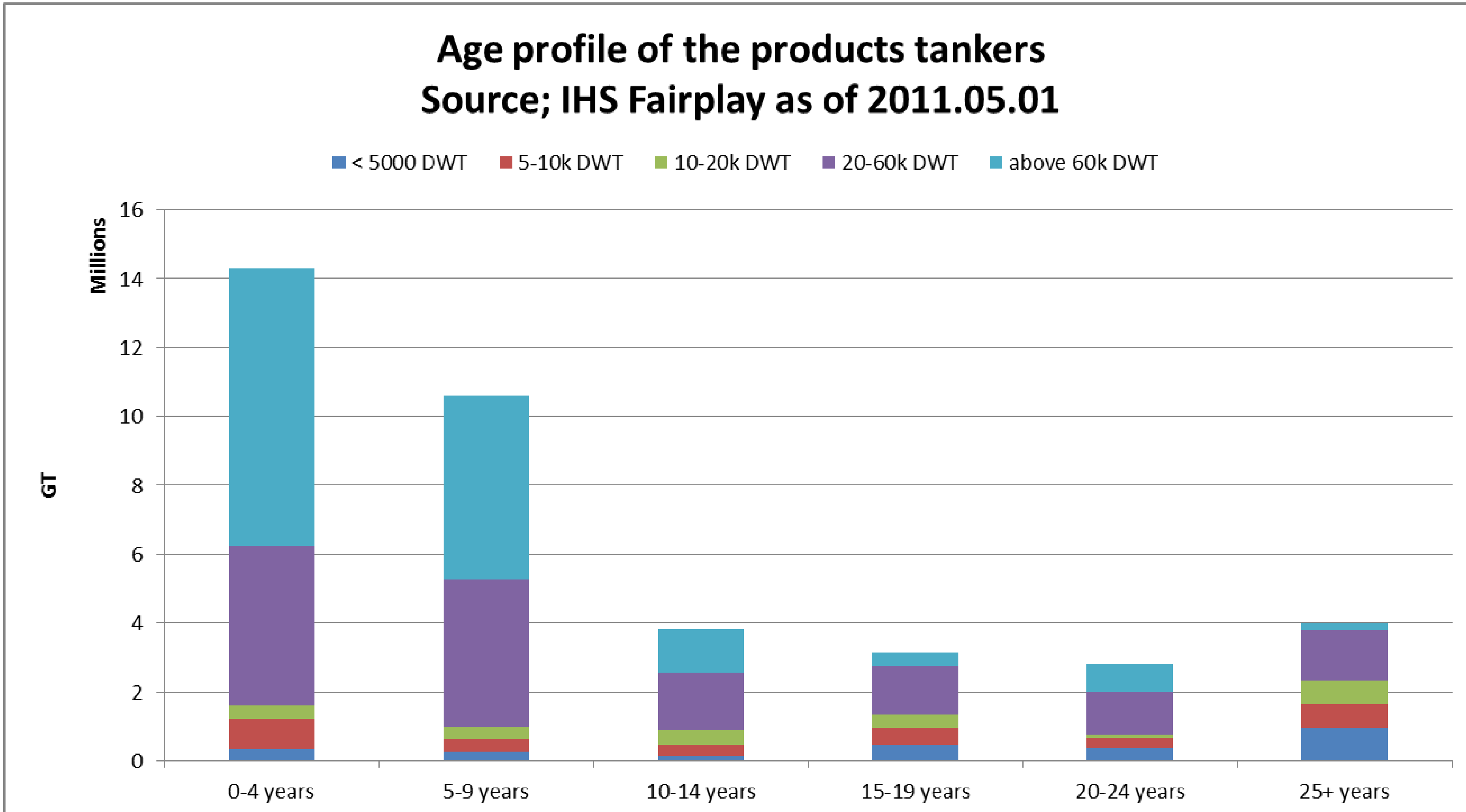
Age profile



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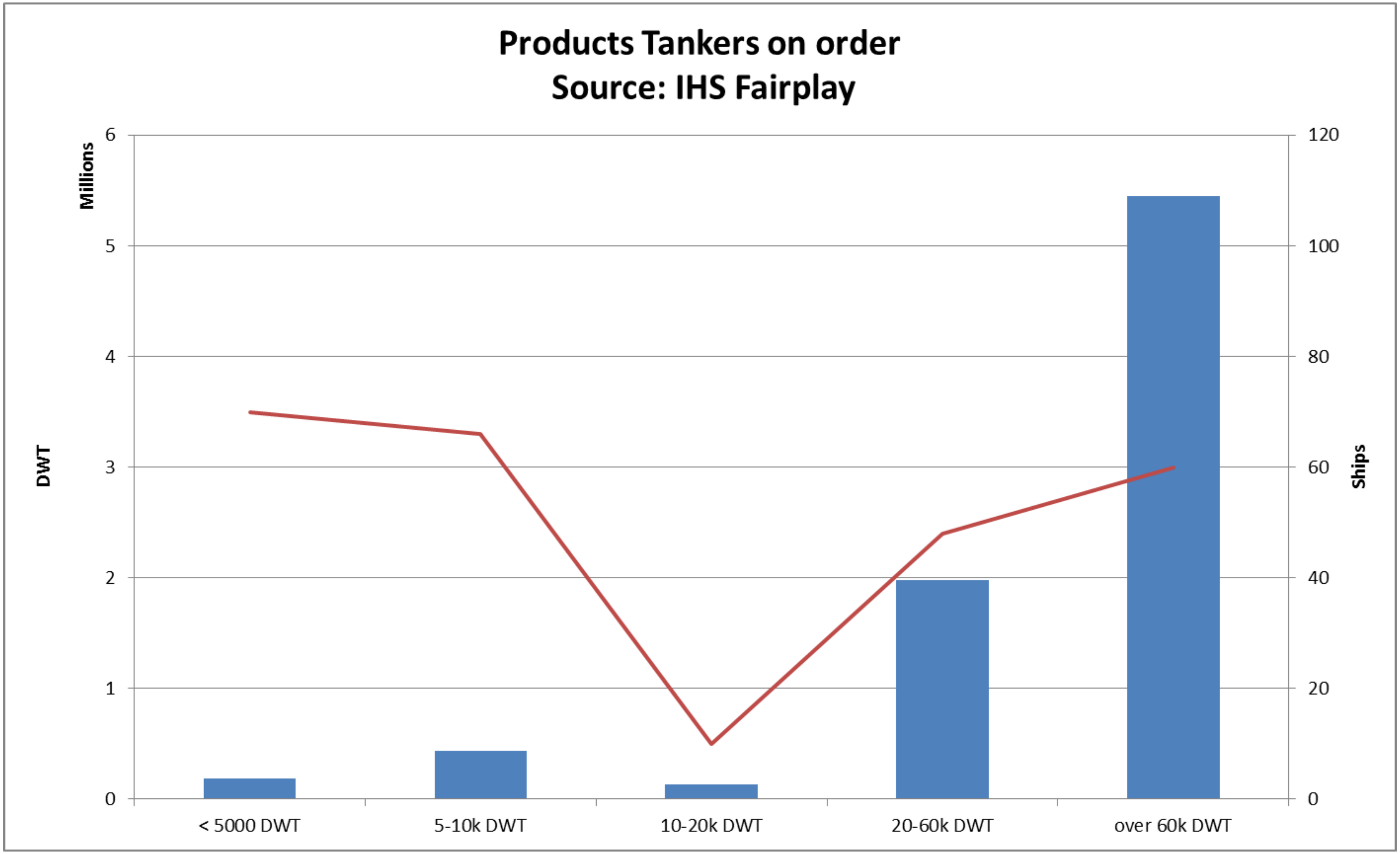
Orderbook



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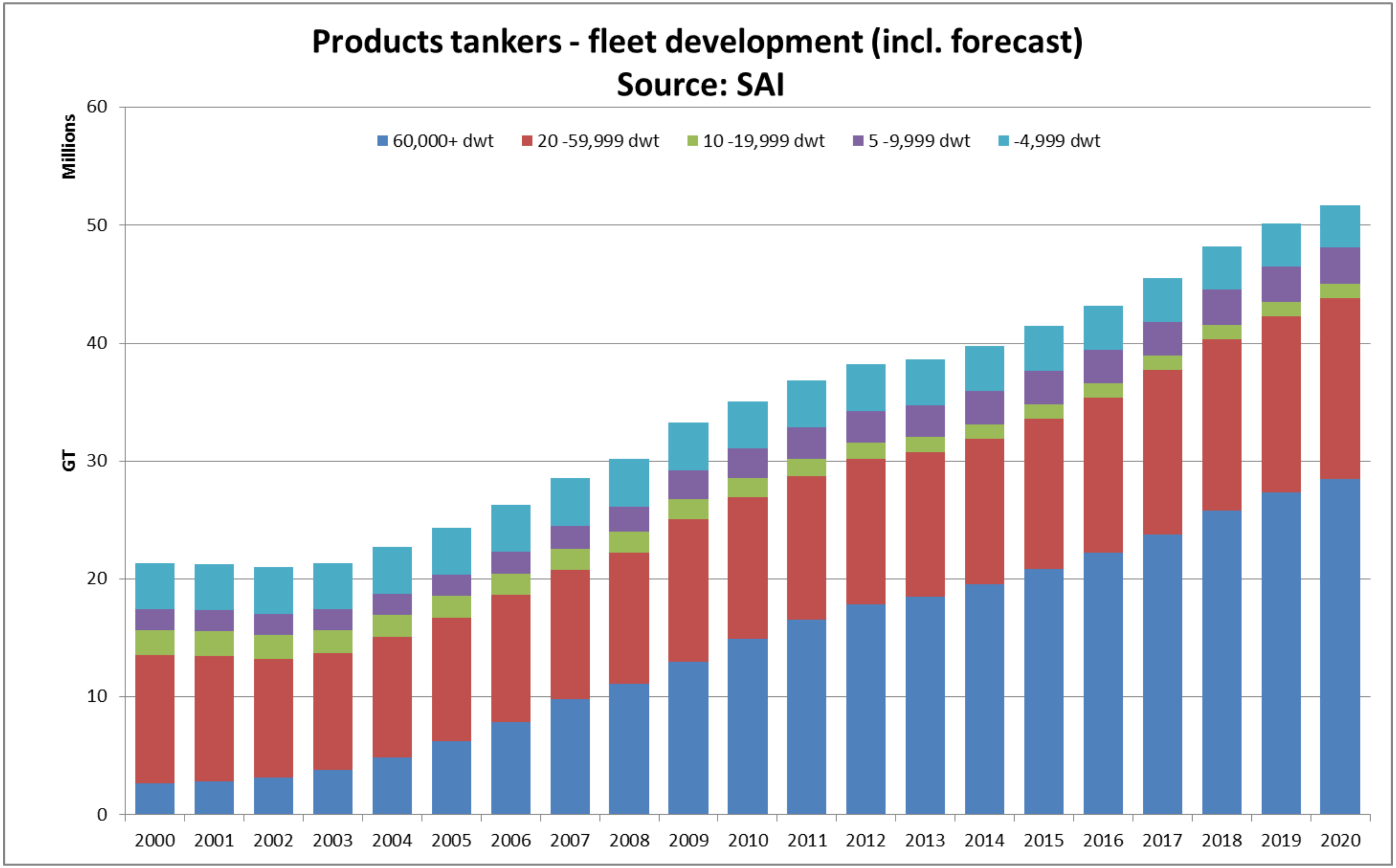
Products tankers



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Crude oil supply - offshore

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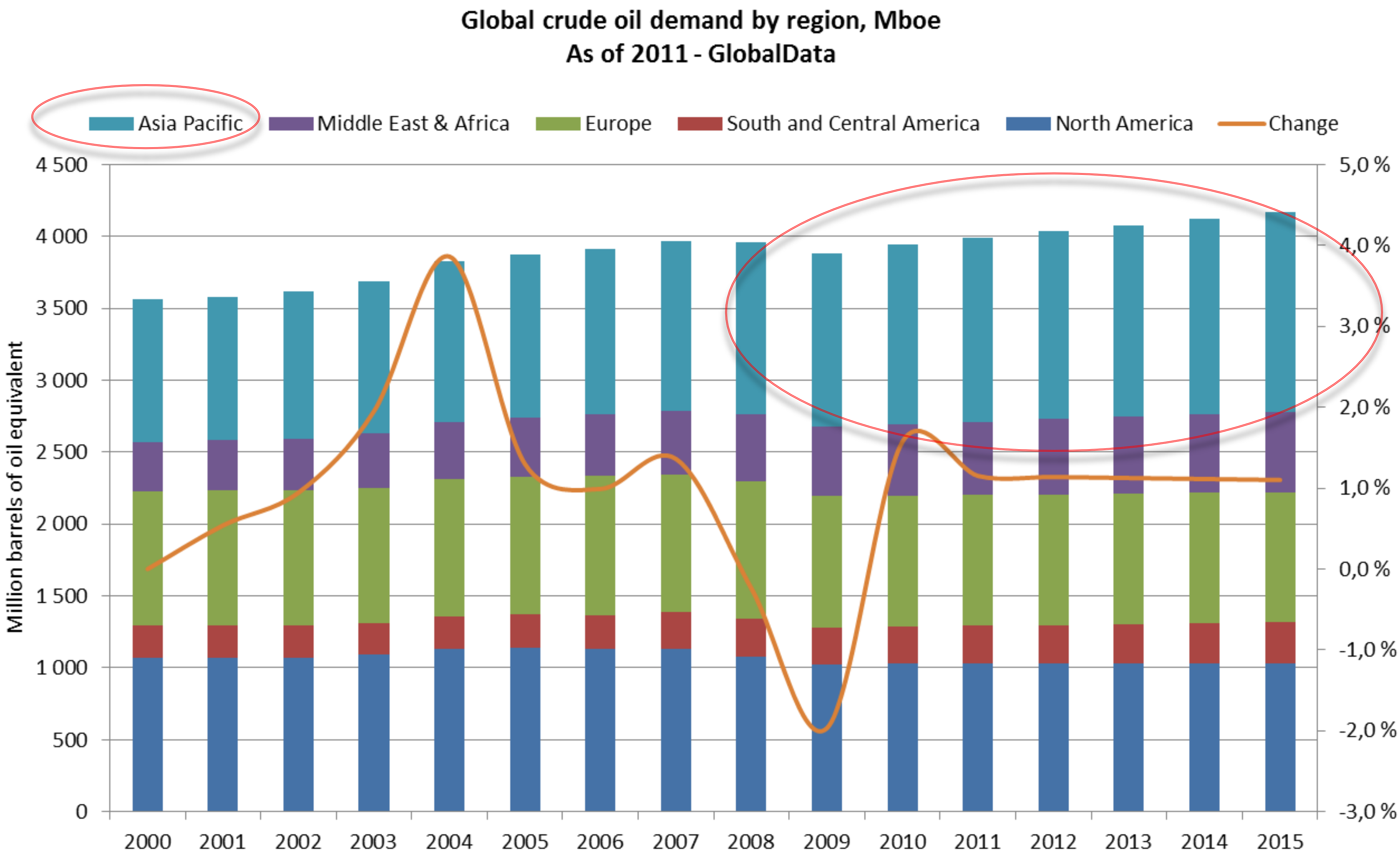
Crude Oil demand



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Some facts…

Growth in oil demand predominantly from non-OECD countries

Since the year 2000 more than 50% of oil&gas discoveries found offshore

Over 60% of offshore discoveries located in deep or ultra-deep waters

Offshore Capex expected to grow on average by 15% per annum

Leading regions – Latin America, SE Asia, West Africa, India and Caspian

Declining regions – Middle East, North America, North Africa, Europe

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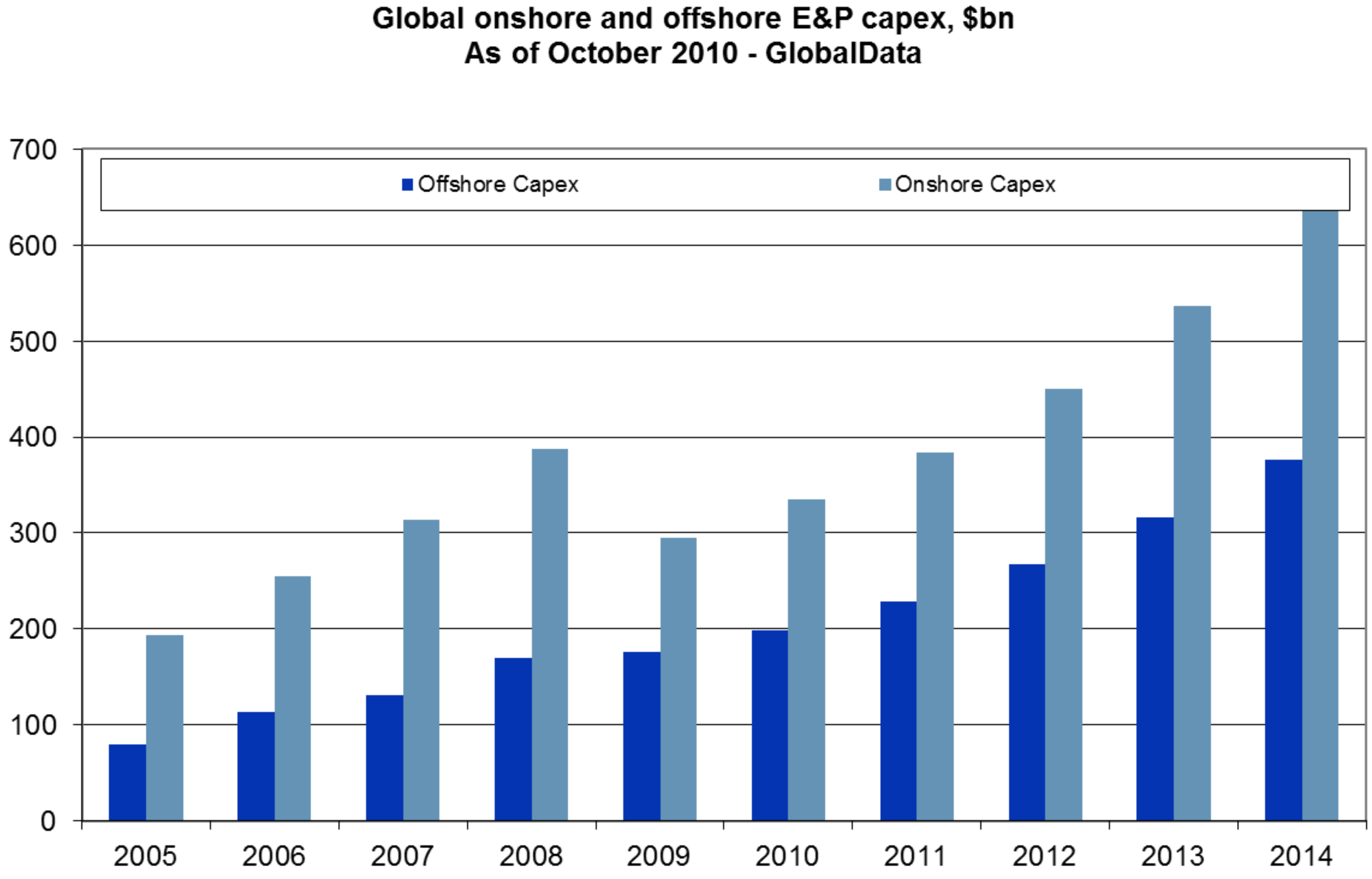
E&P Expenditures



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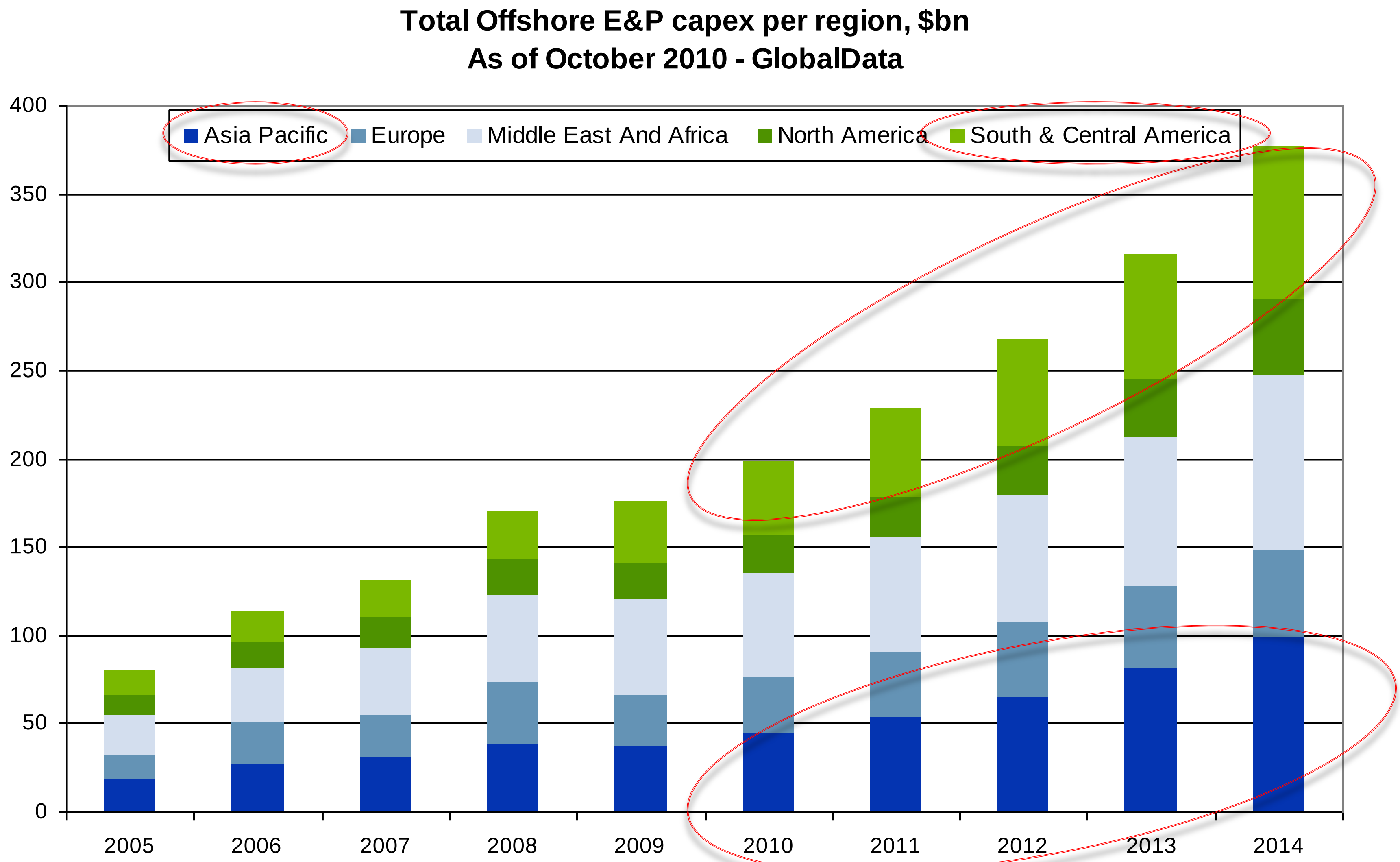
E&P capital expenditures



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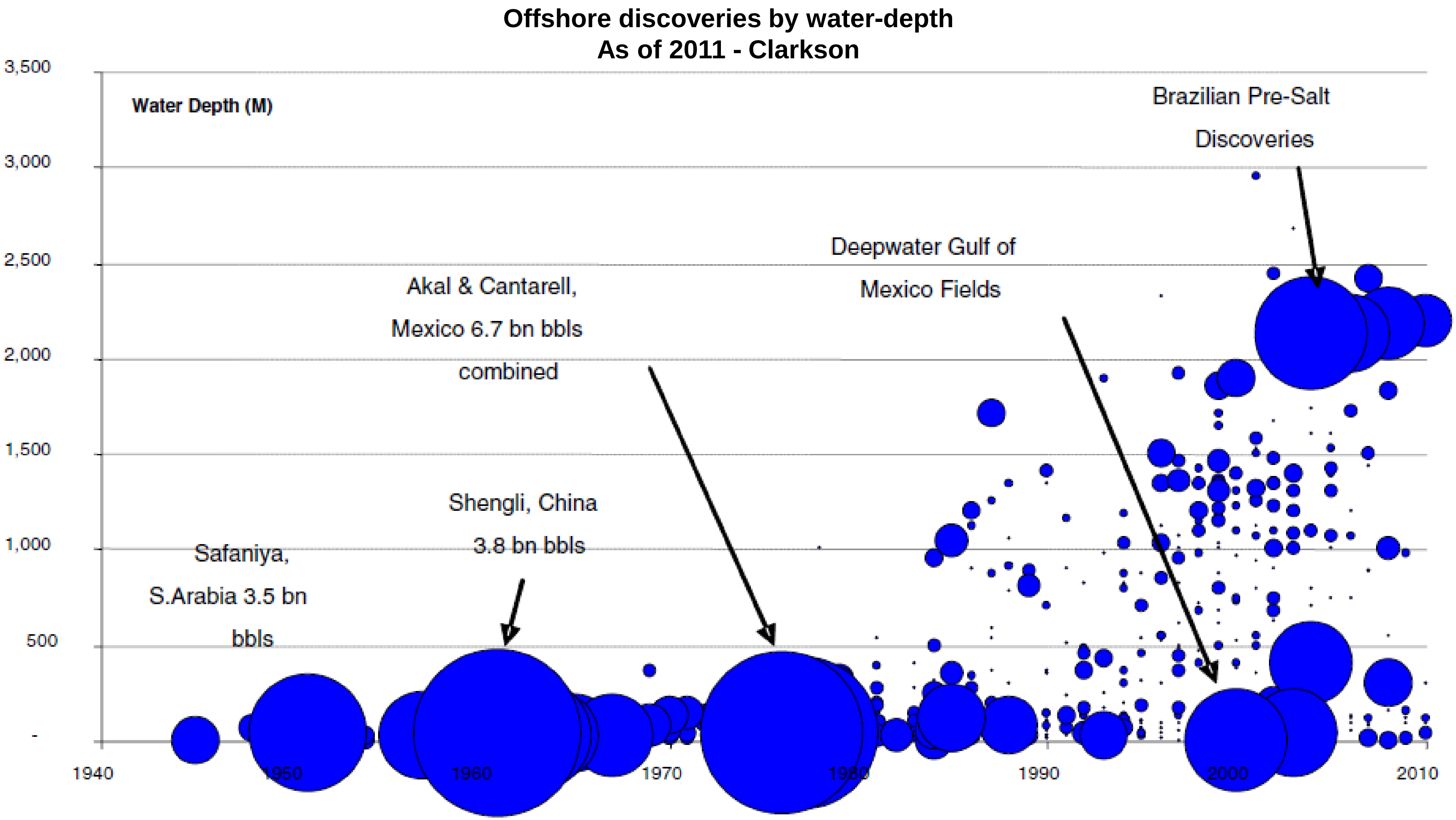
Discoveries



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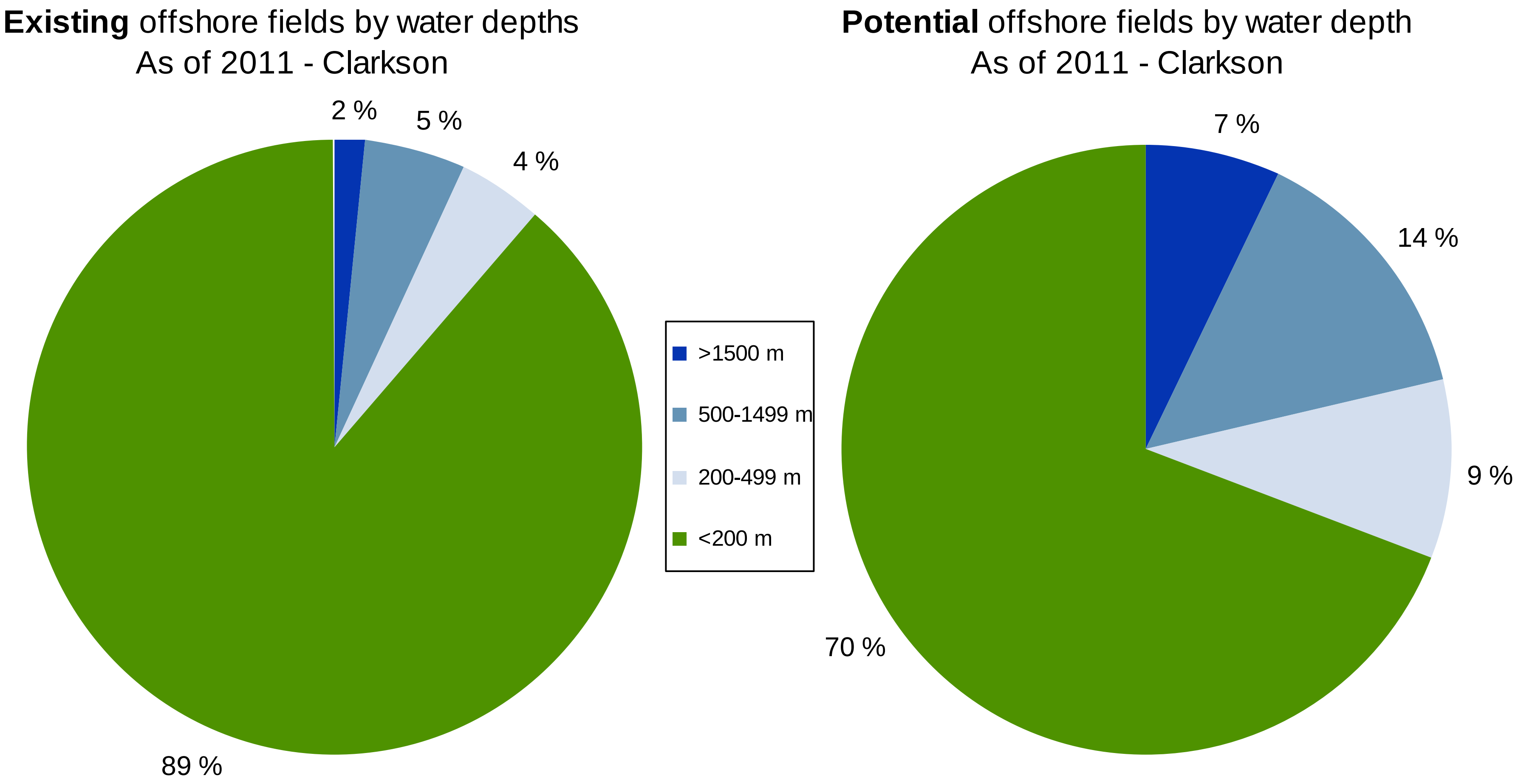
Existing versus potential offshore fields



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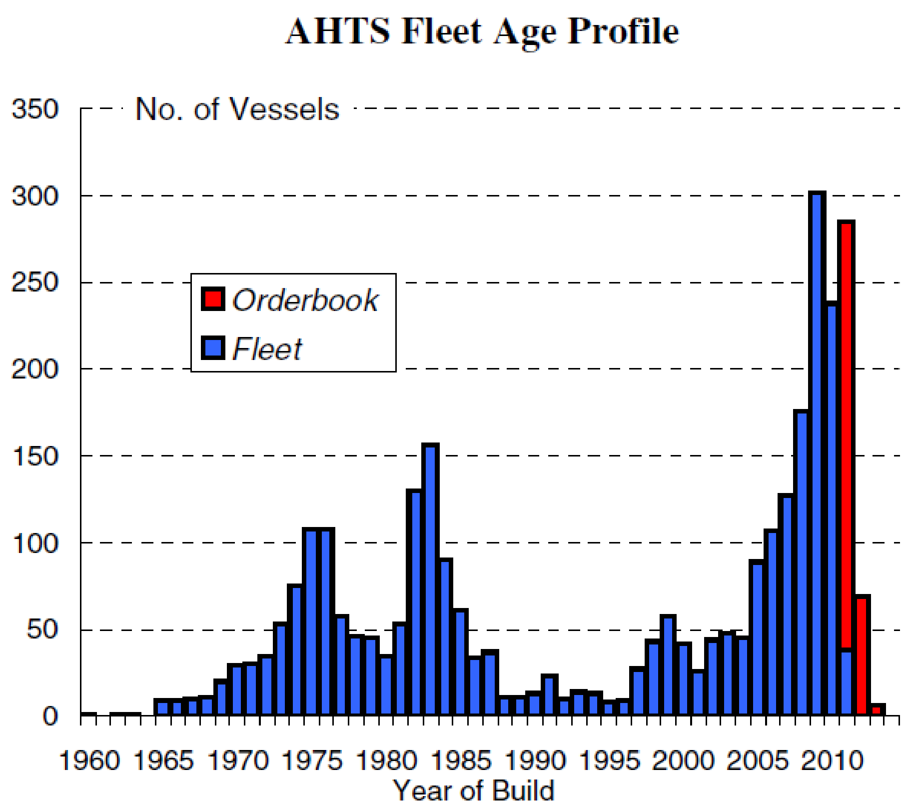
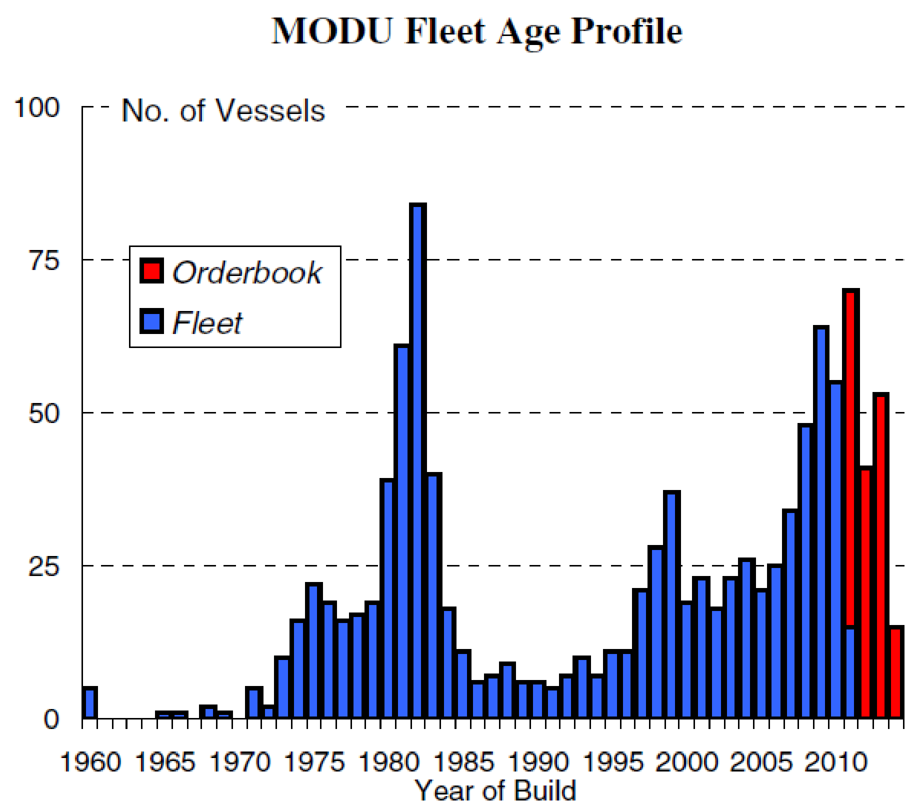
Age profiles; Source Clarksons





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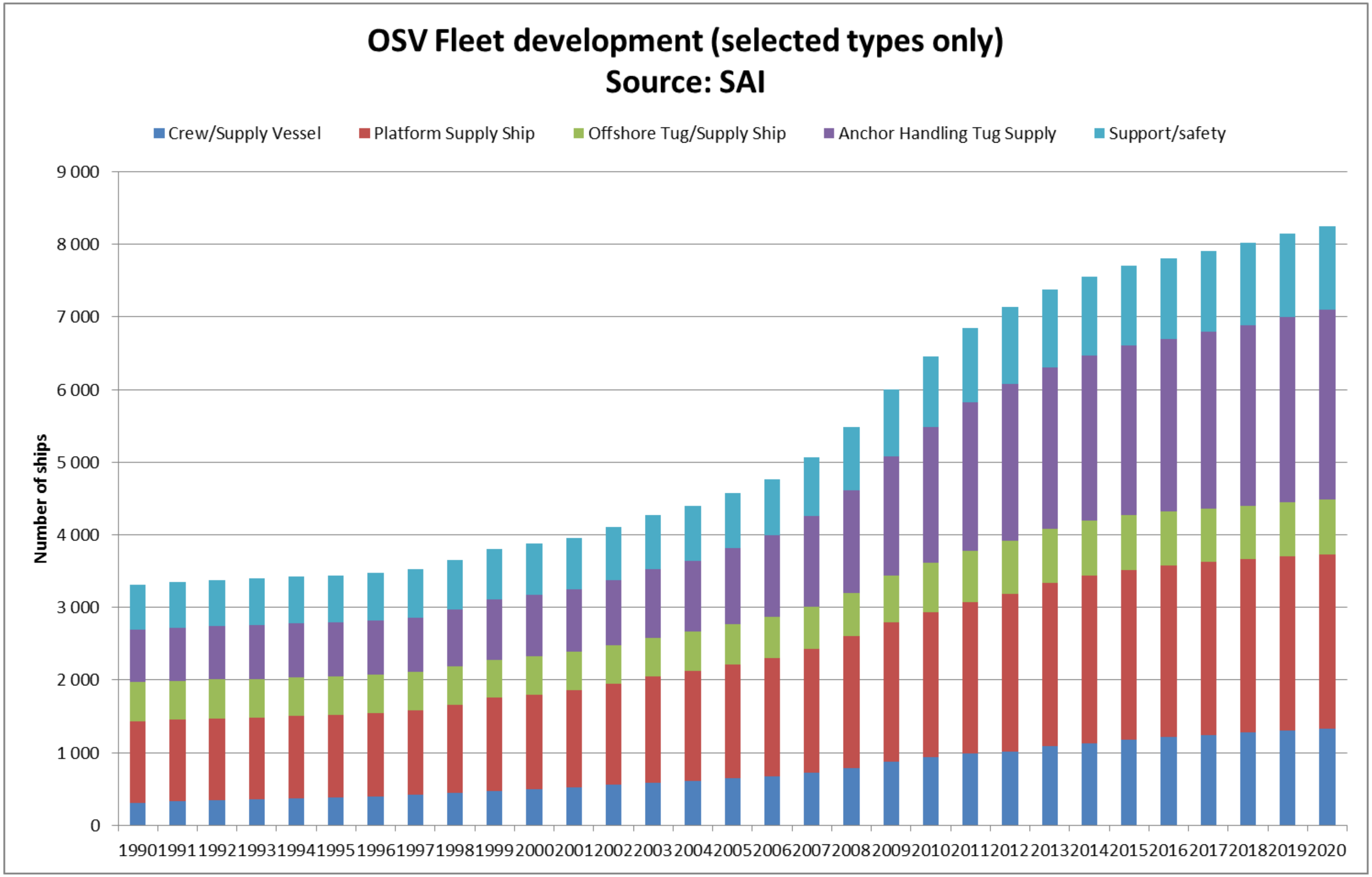
Fleet development



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Role of coal in power generation

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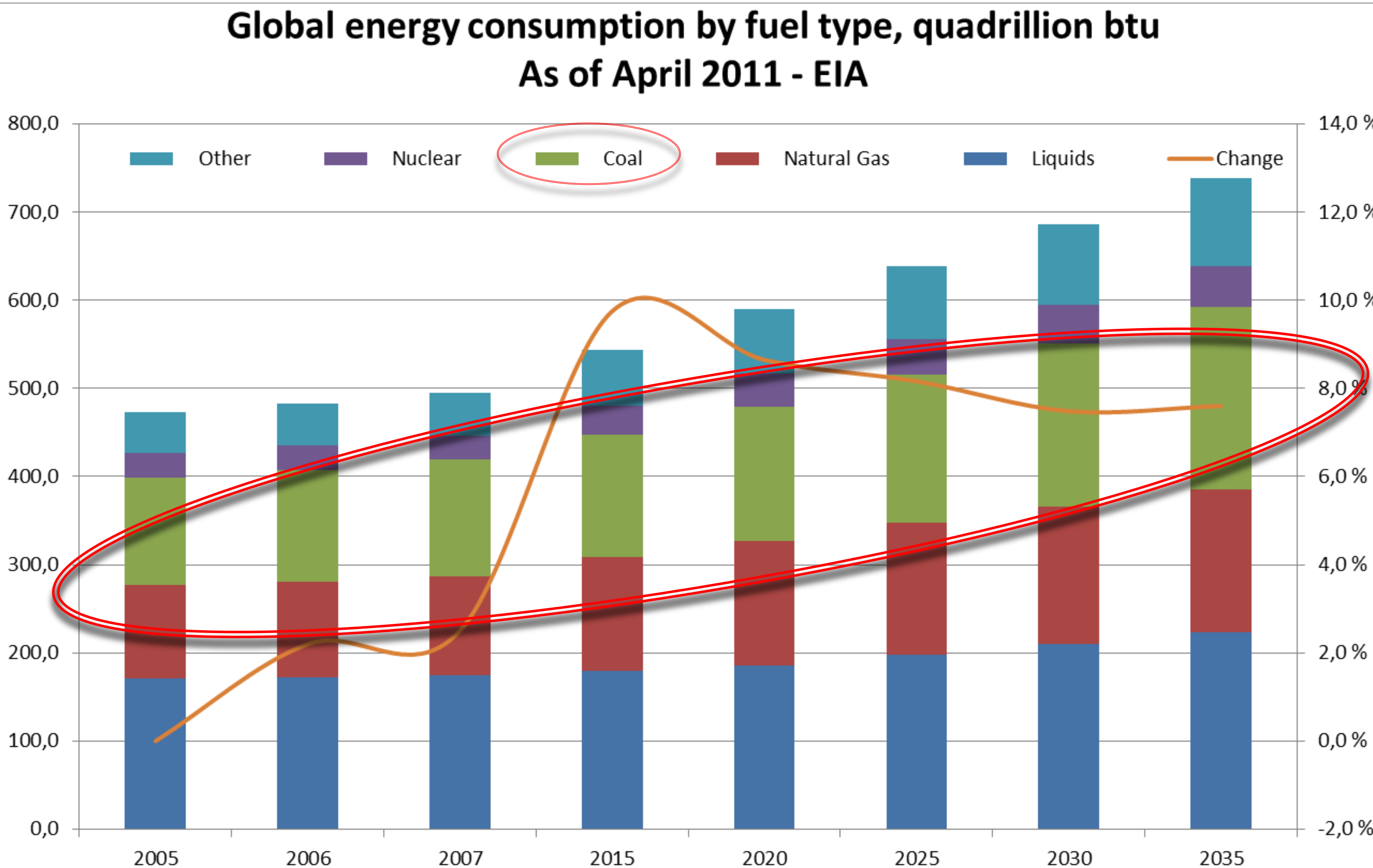
Energy demand



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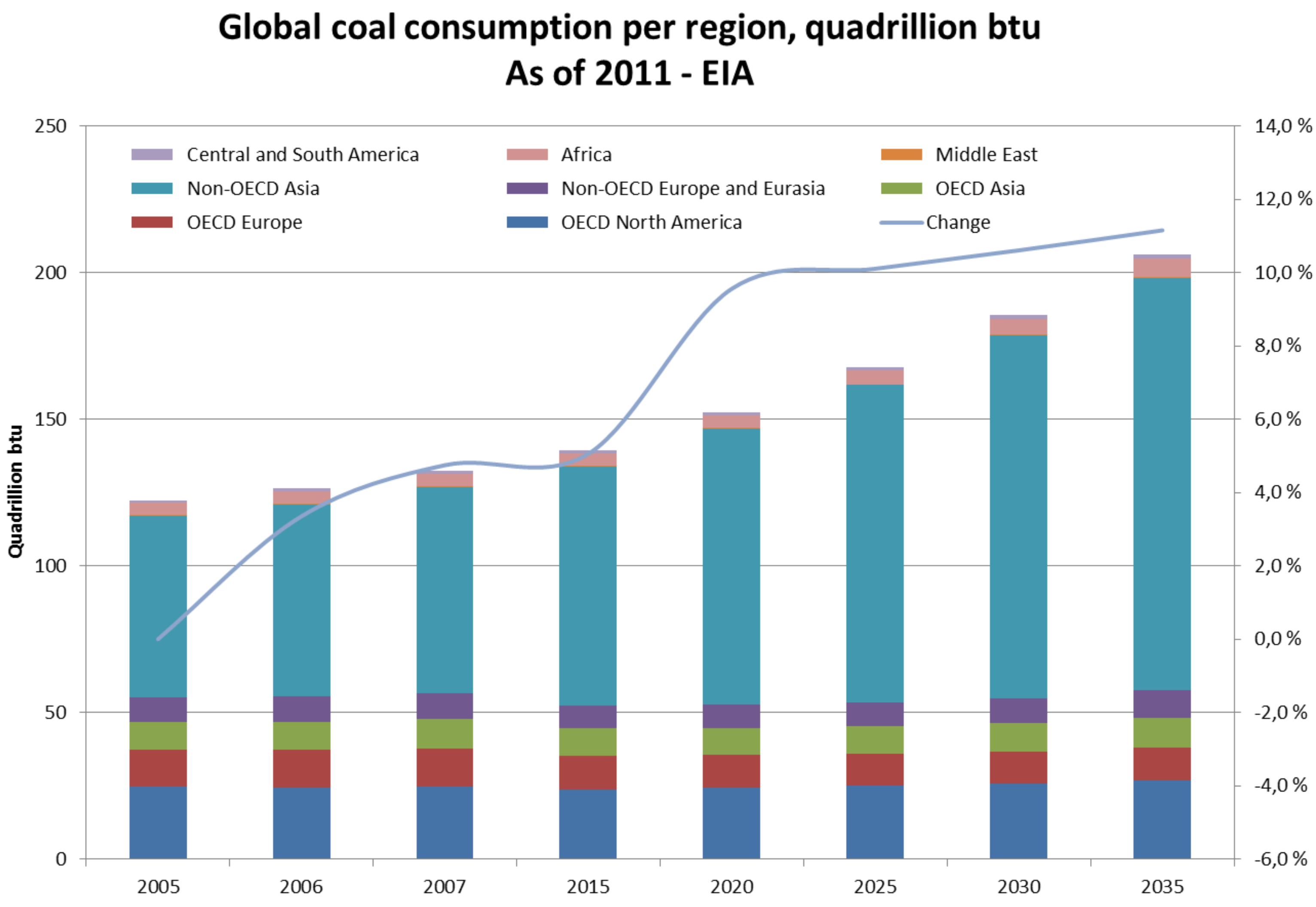
Coal consumption



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Some facts…

Growth in coal demand predominantly from non-OECD countries

Coal accounts for 35% of the power generation mix

Around 7 billion tonnes consumed last year

China uses coal for 80% of their power generation

No other fuel can replace coal in a foreseeable future

Consumption will grow - CCS

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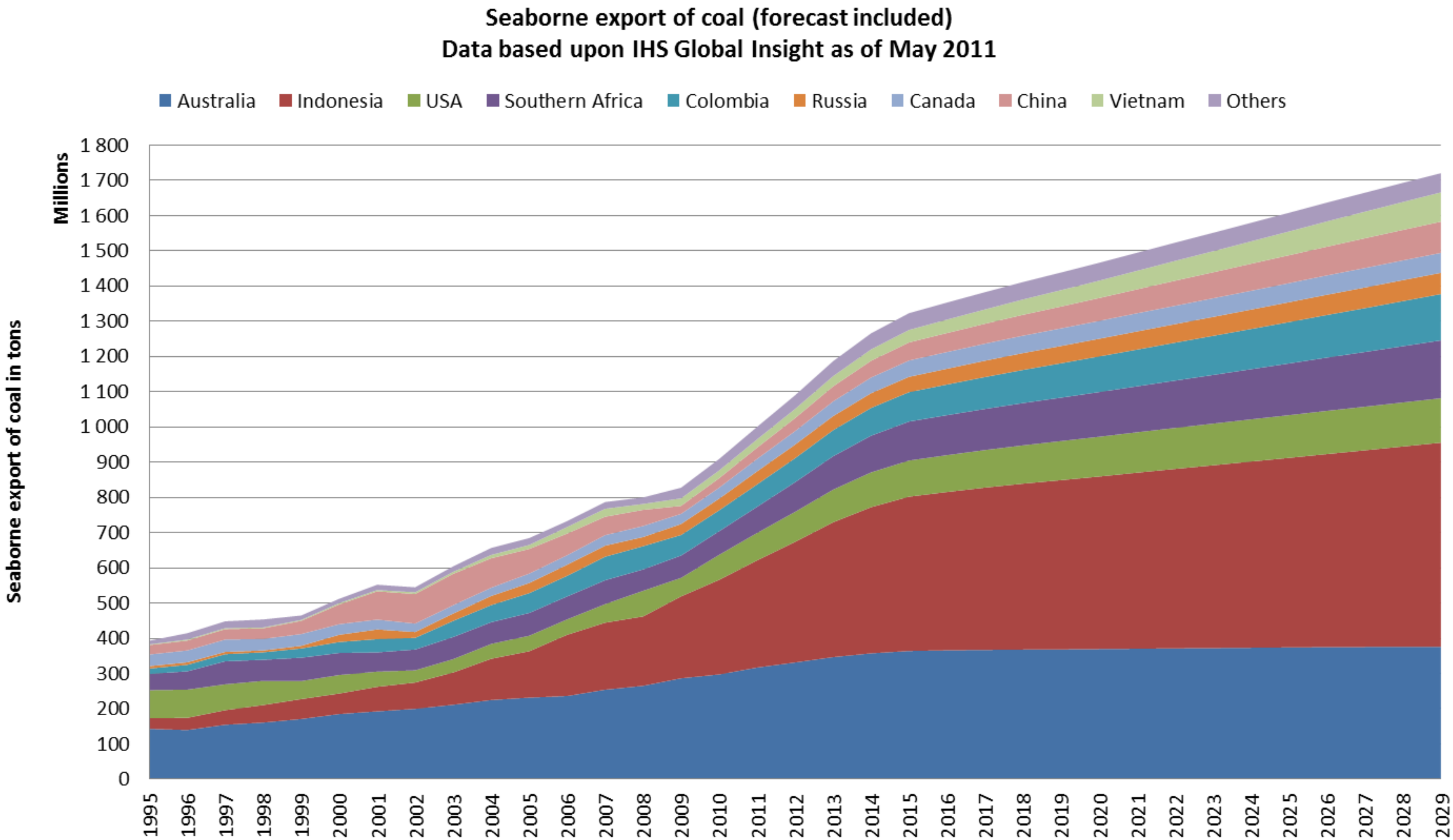
Seaborne trade



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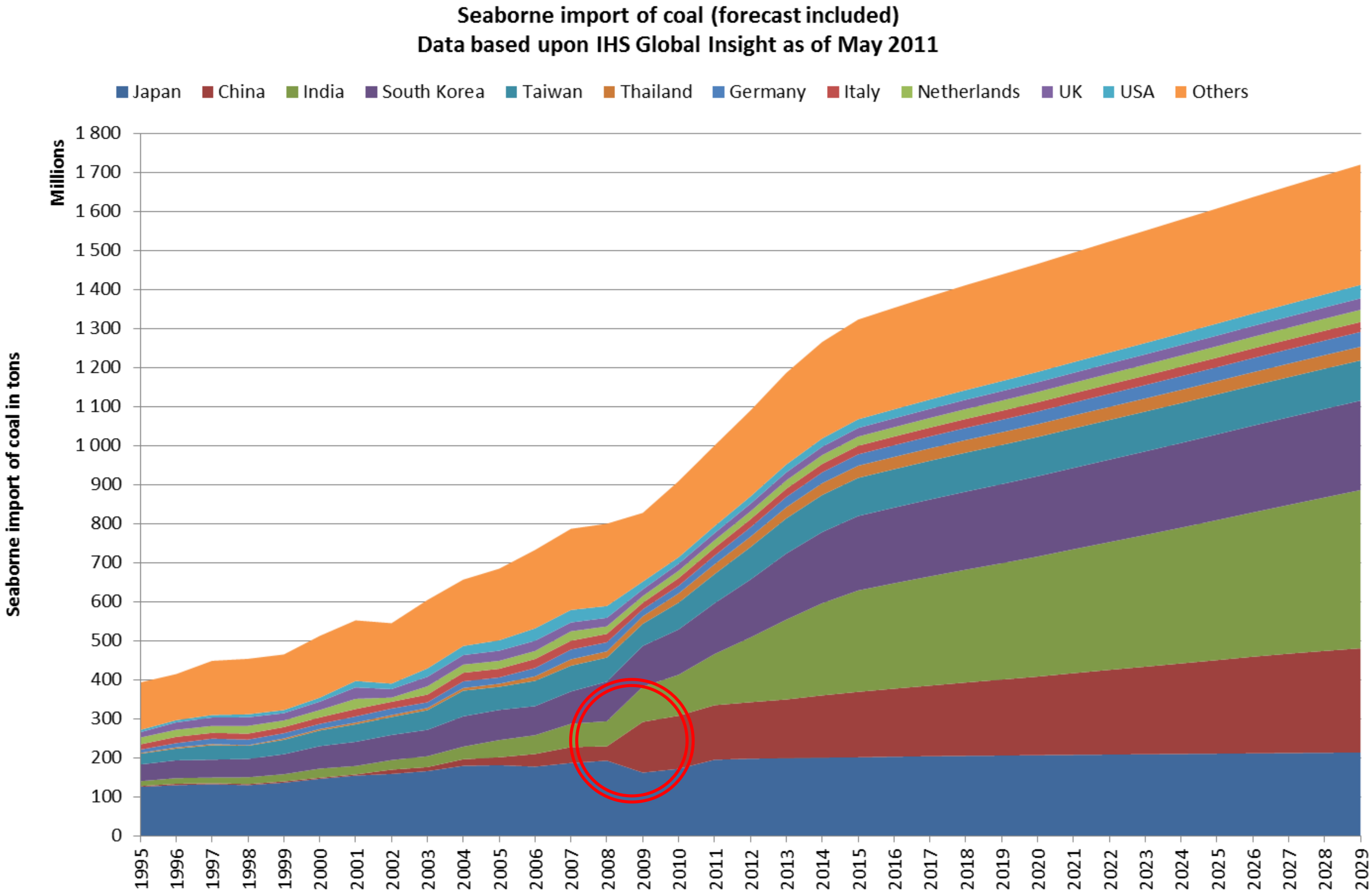
Seaborne trade



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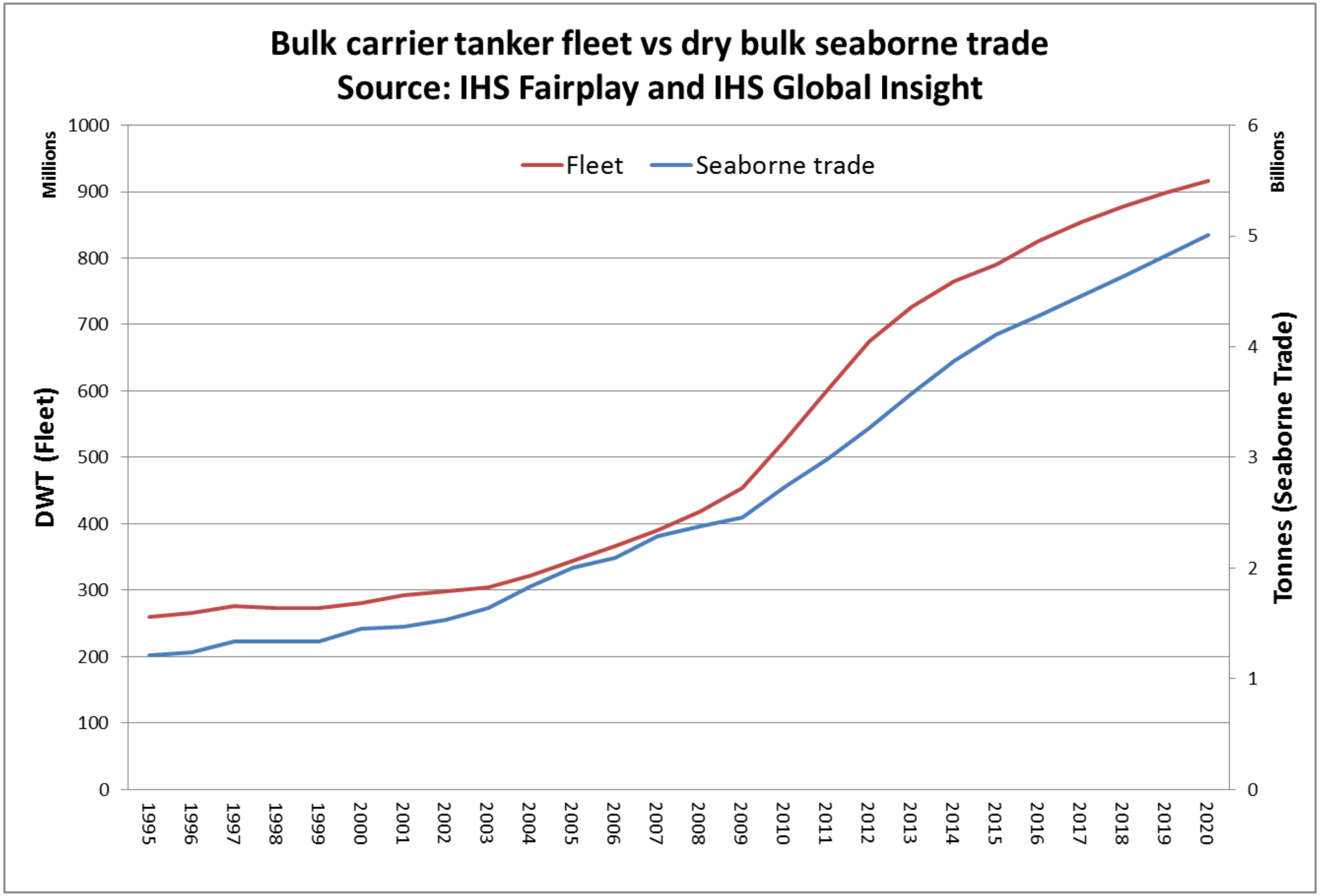
Supply vs demand – dry bulk



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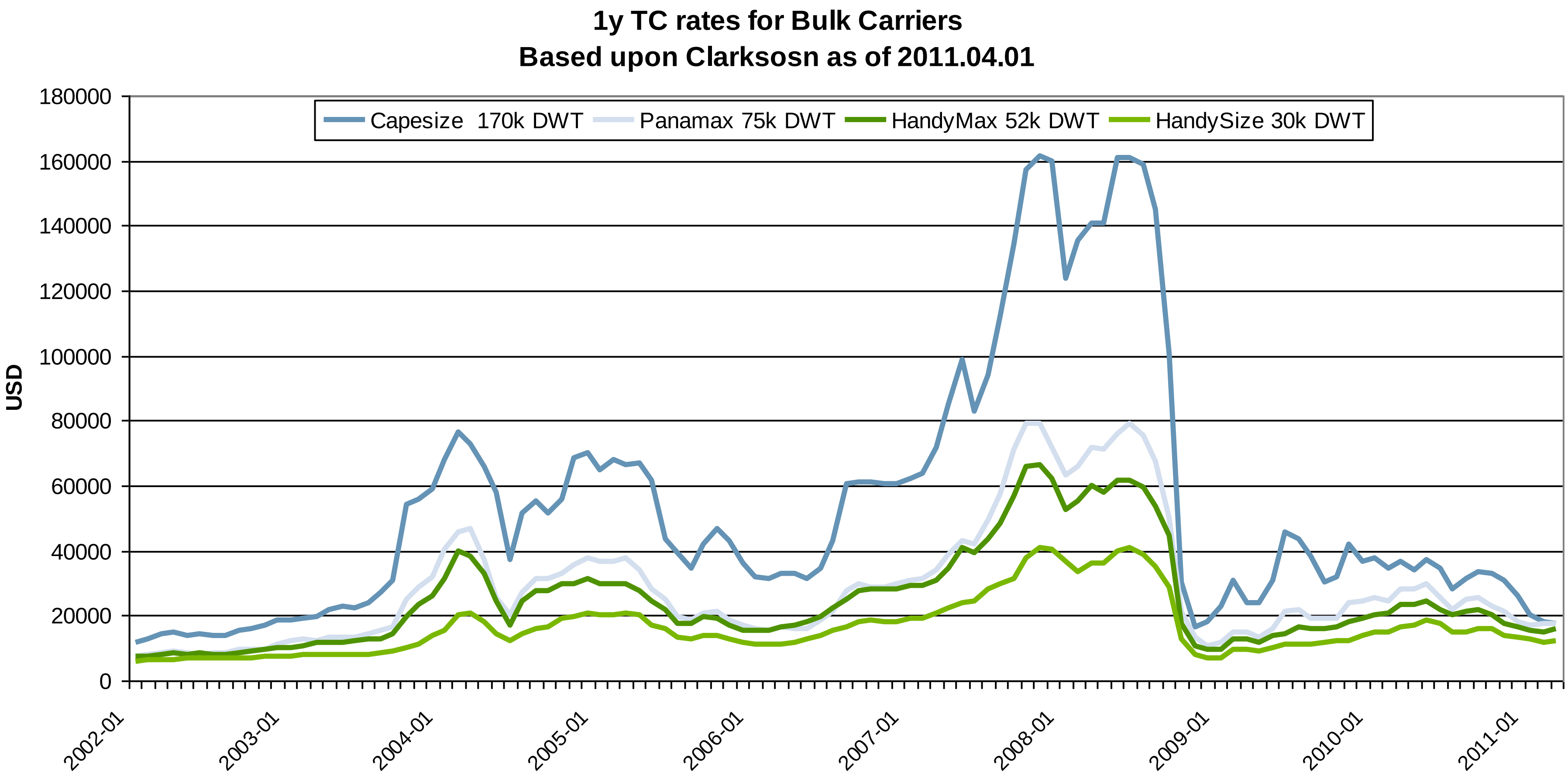
1 year TC rates for Bulkers



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Renewable energy – offshore wind

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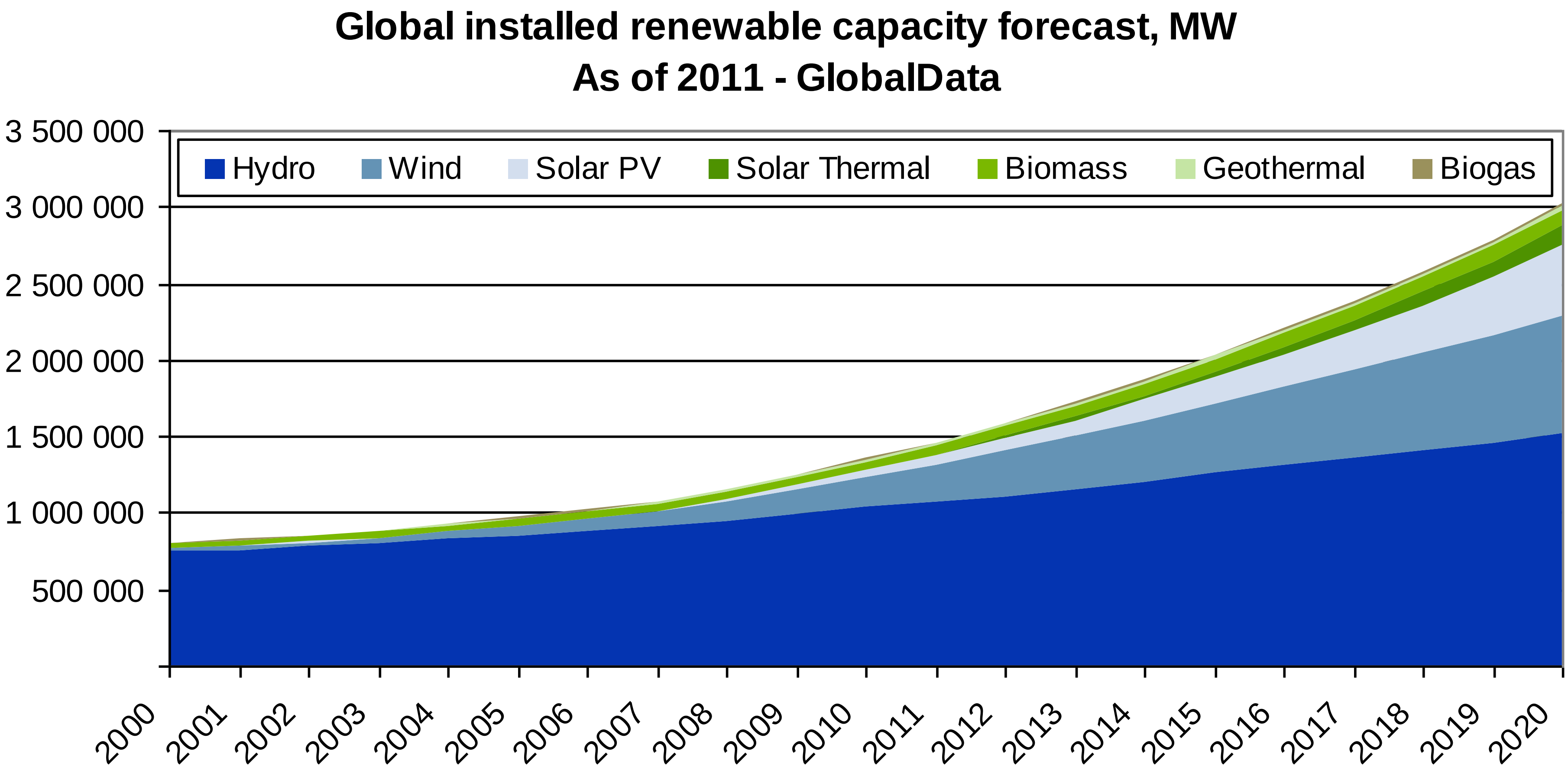
Renewable capacity



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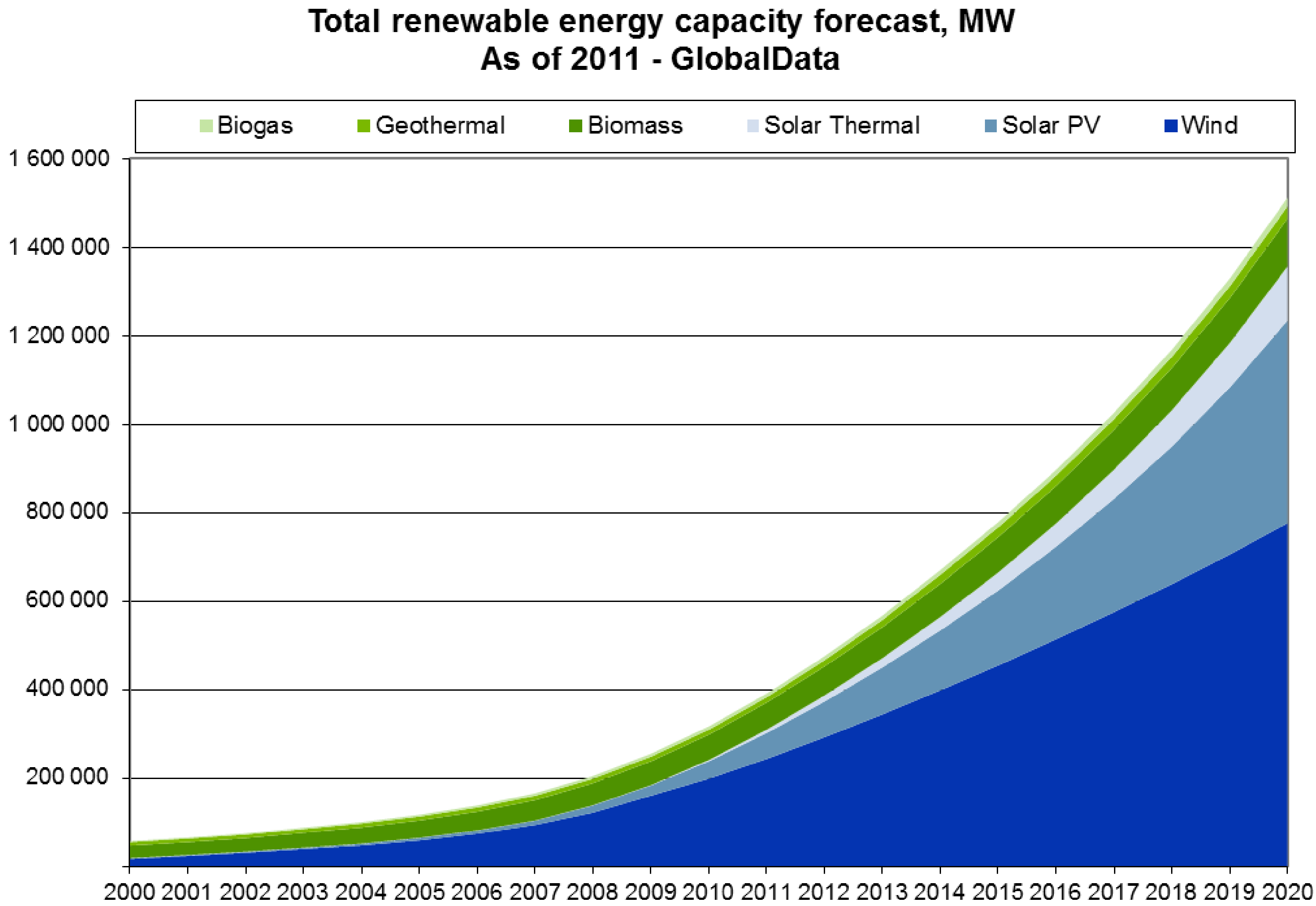
Renewable capacity



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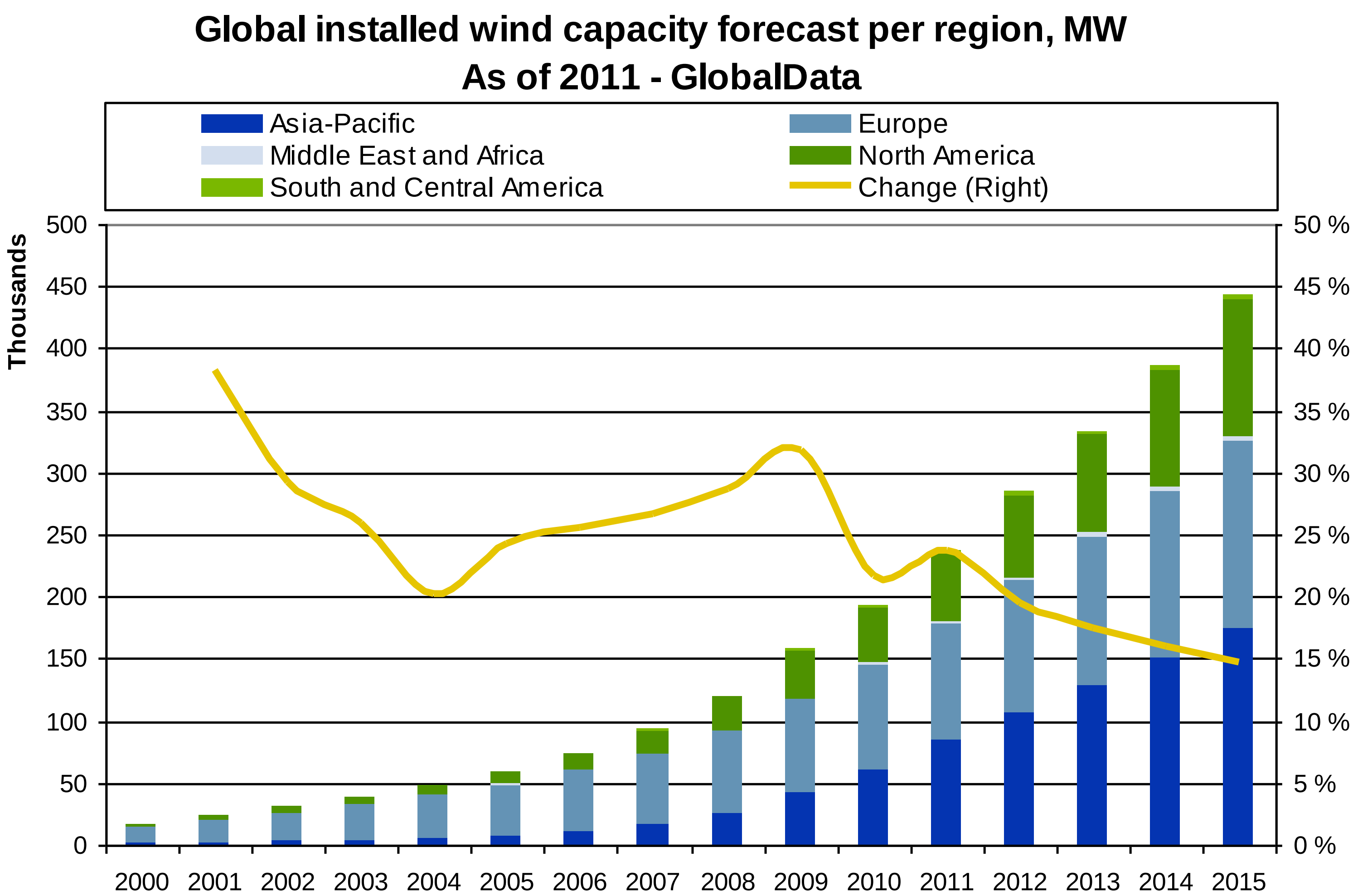
Installed capacity



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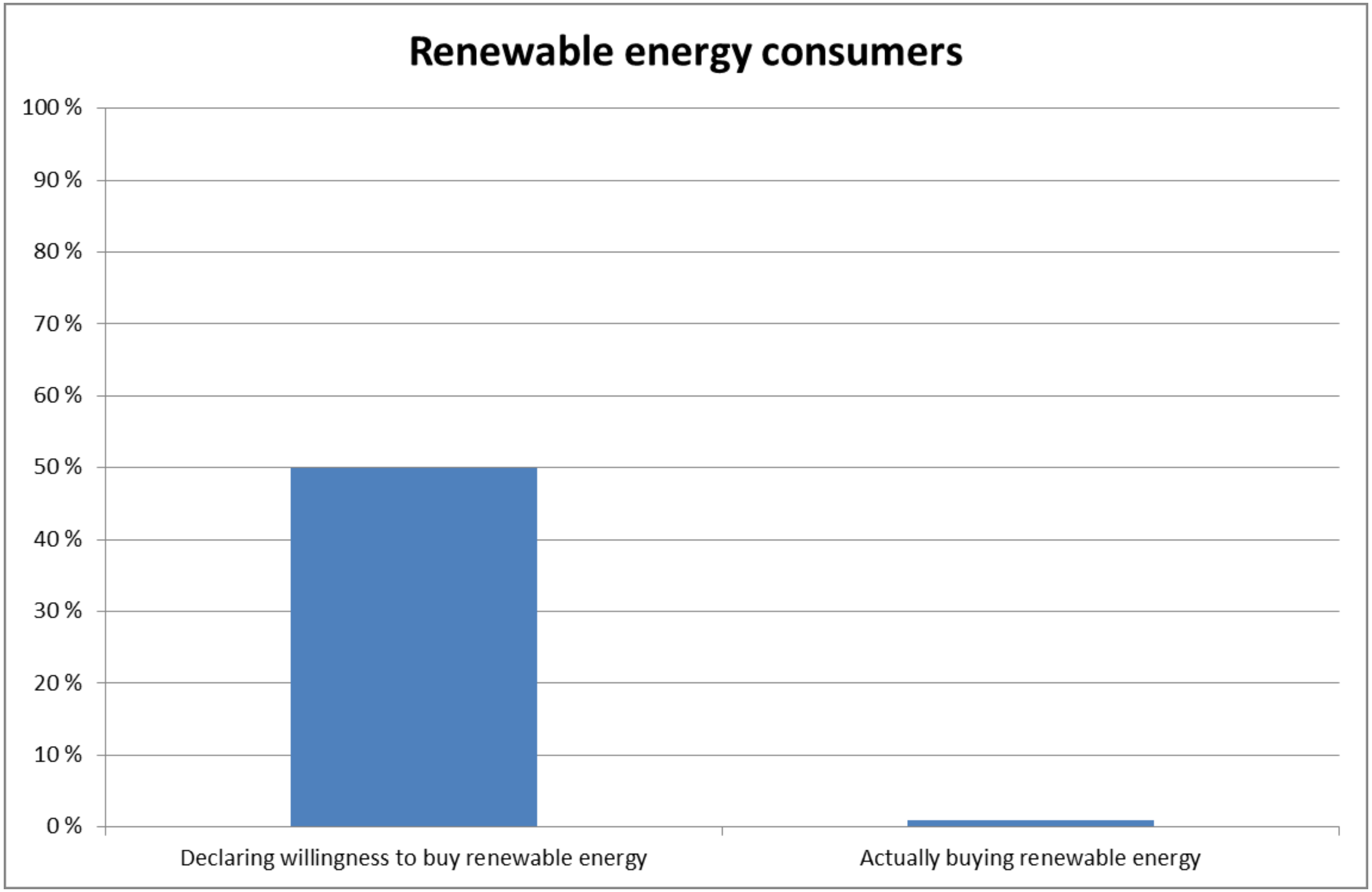
Consumers



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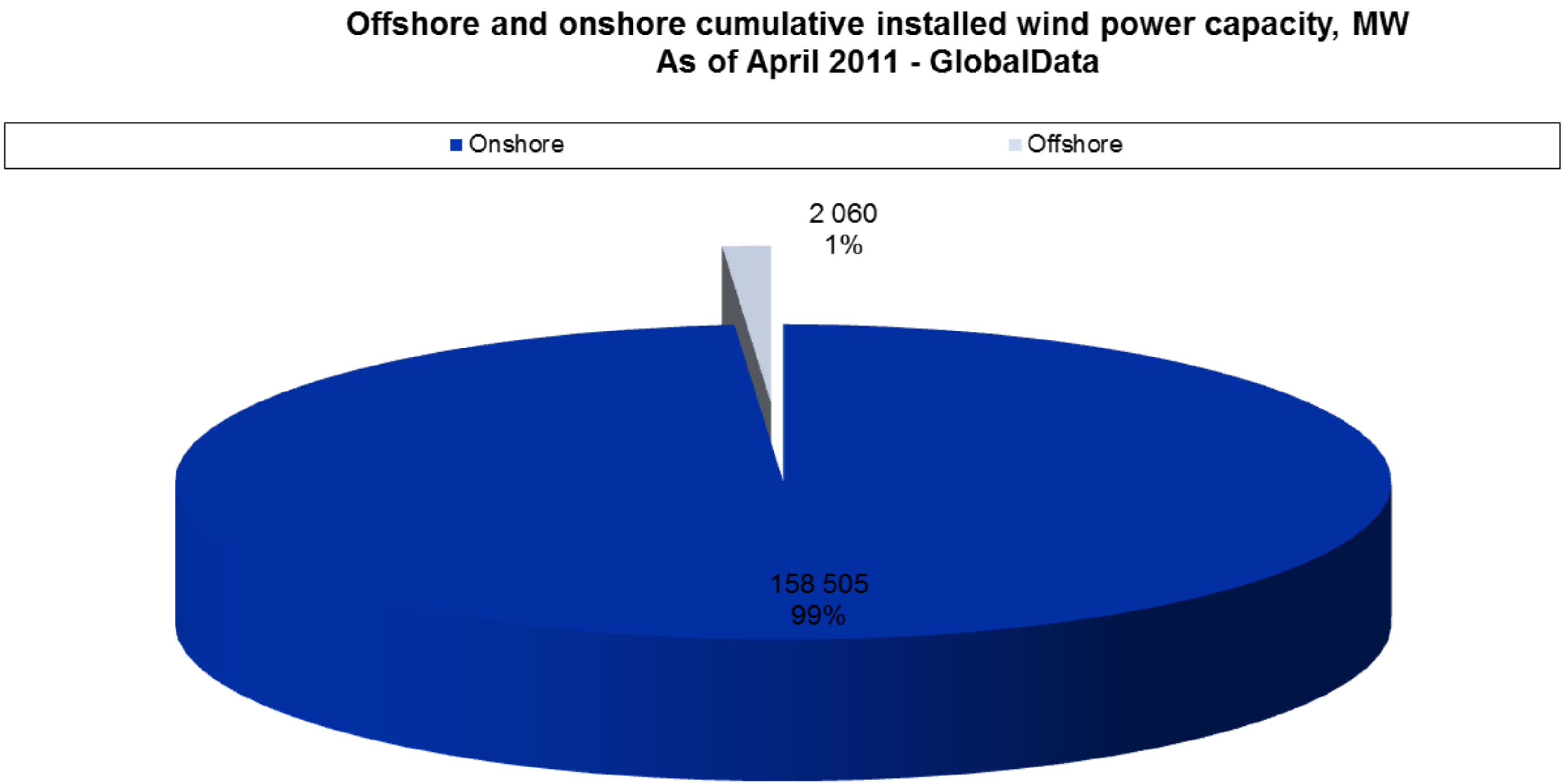
Onshore vs. Offshore capacity



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Some facts…

Massive double digit, everlasting growth

Accounts for only 2% of the total power generation (without hydro)

It is more expensive than conventional energy

Extremely capital intensive

Heavily subsidised

Leading regions: Europe, North America, China

Is moving towards offshore

Offshore wind technology still needs to be developed

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