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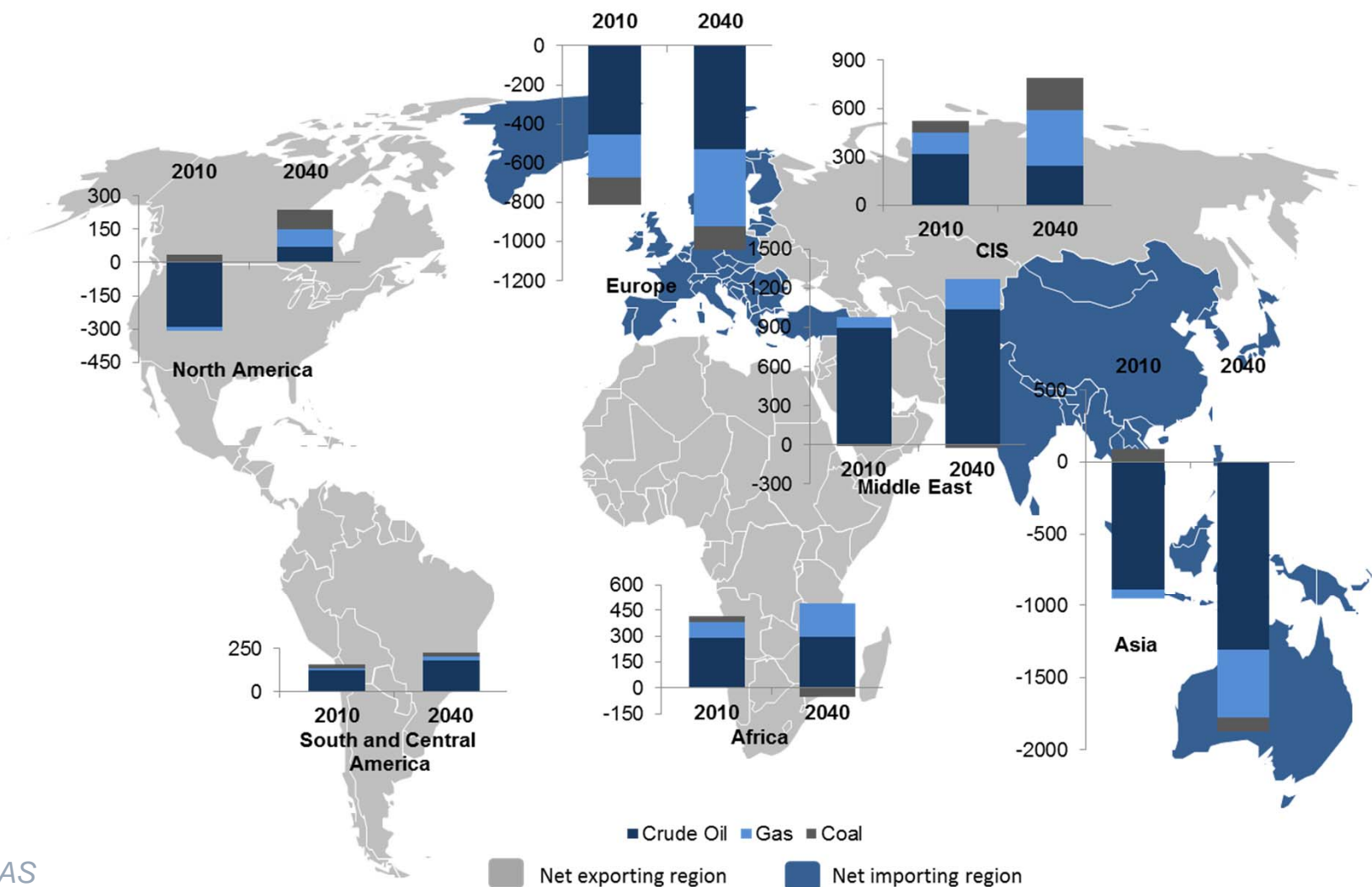
**Long-term Prospects of the international hydrocarbon Trade Development:
The Role of LNG**

**Долгосрочные перспективы развития международной торговли
углеводородами: роль СПГ**



Directions of the international energy trade are changing considerably

International energy trade, mtoe

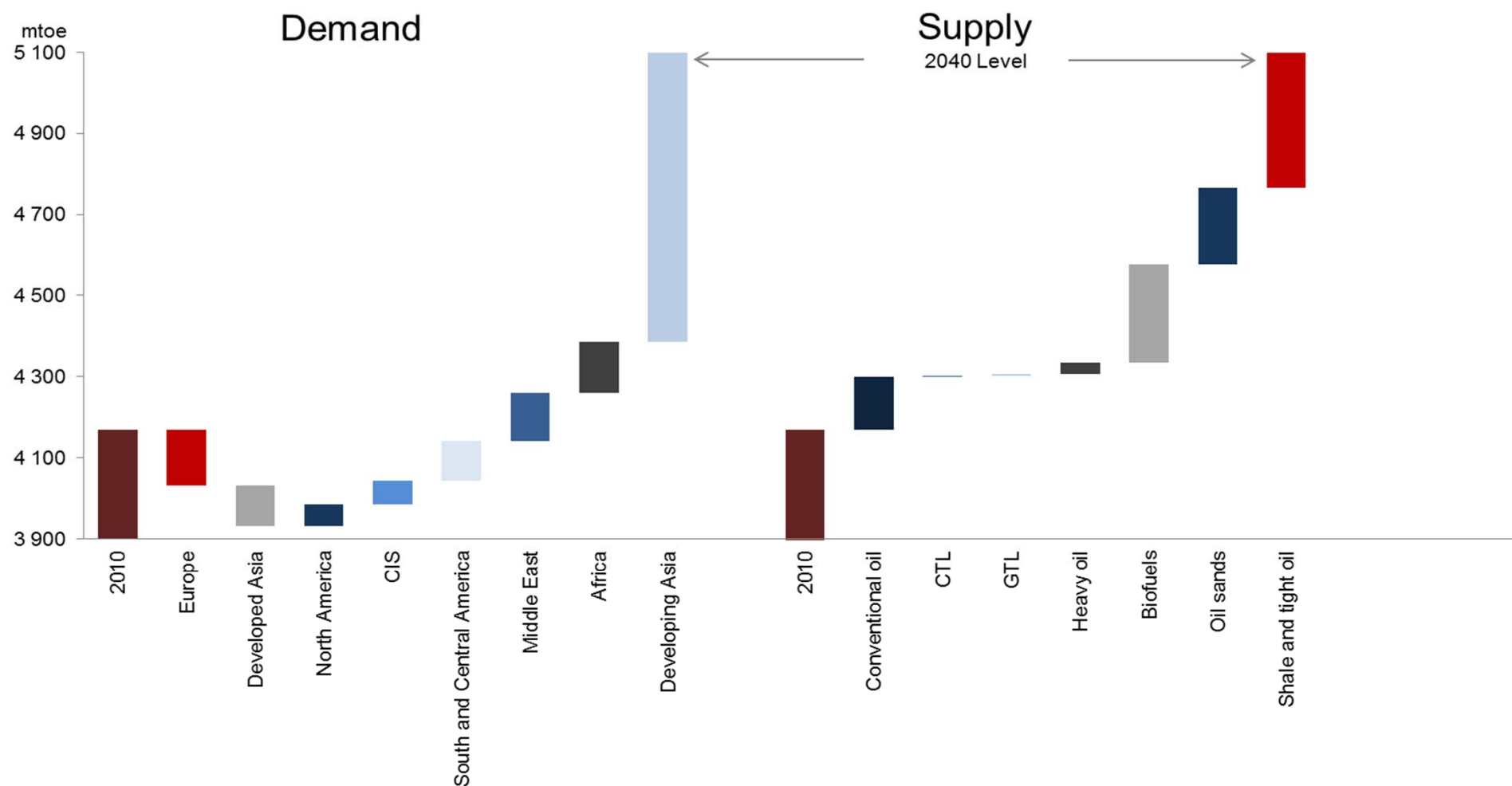


Source: ERI RAS



Tremendous shifts on the liquid fuels market

Liquid fuel supply and demand balance by 2040, Baseline Scenario

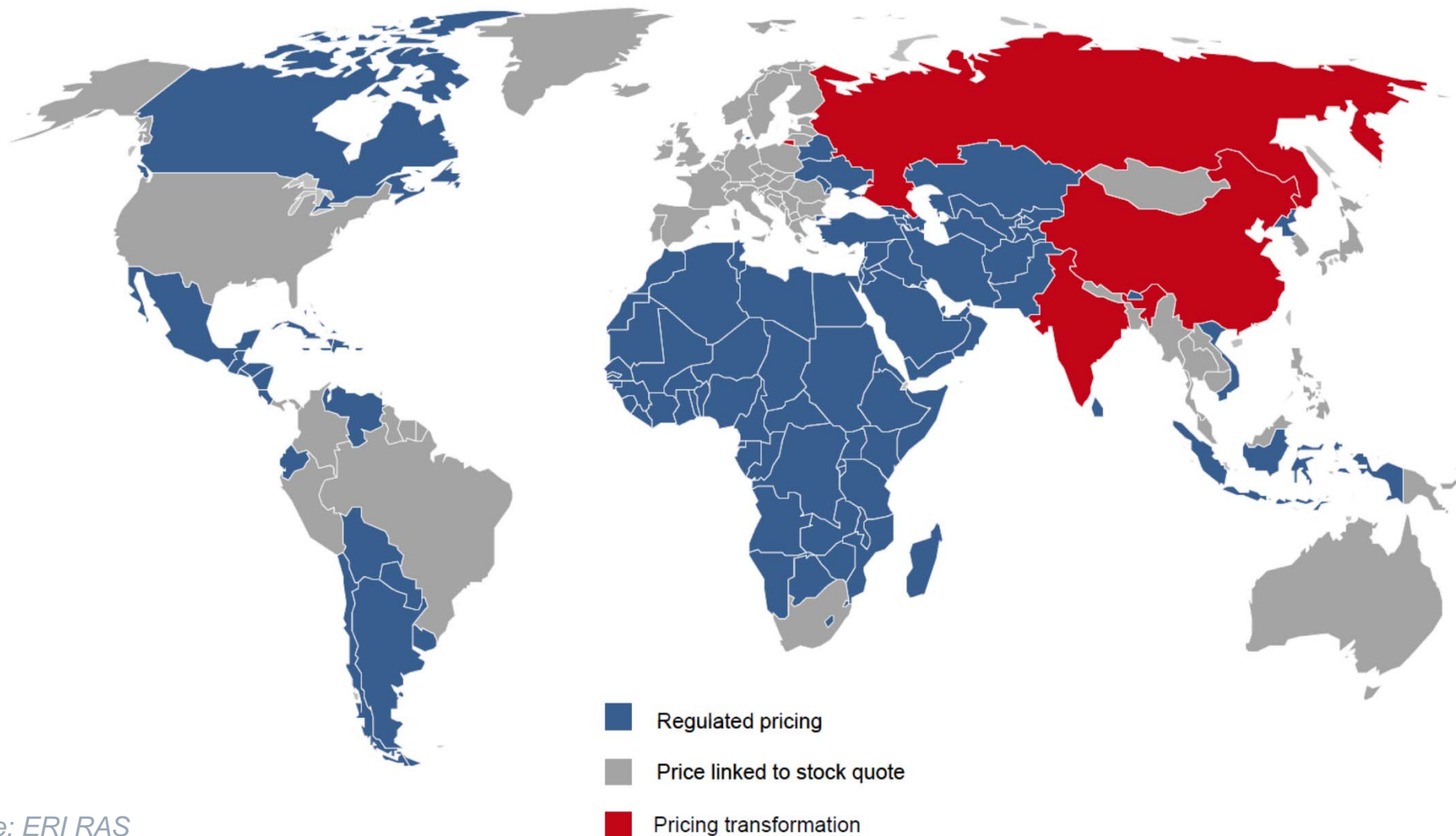


Source: ERI RAS



Liquids demand in the developing countries is supported by subsidies for the petroleum products prices

Regulation of petroleum products prices by country

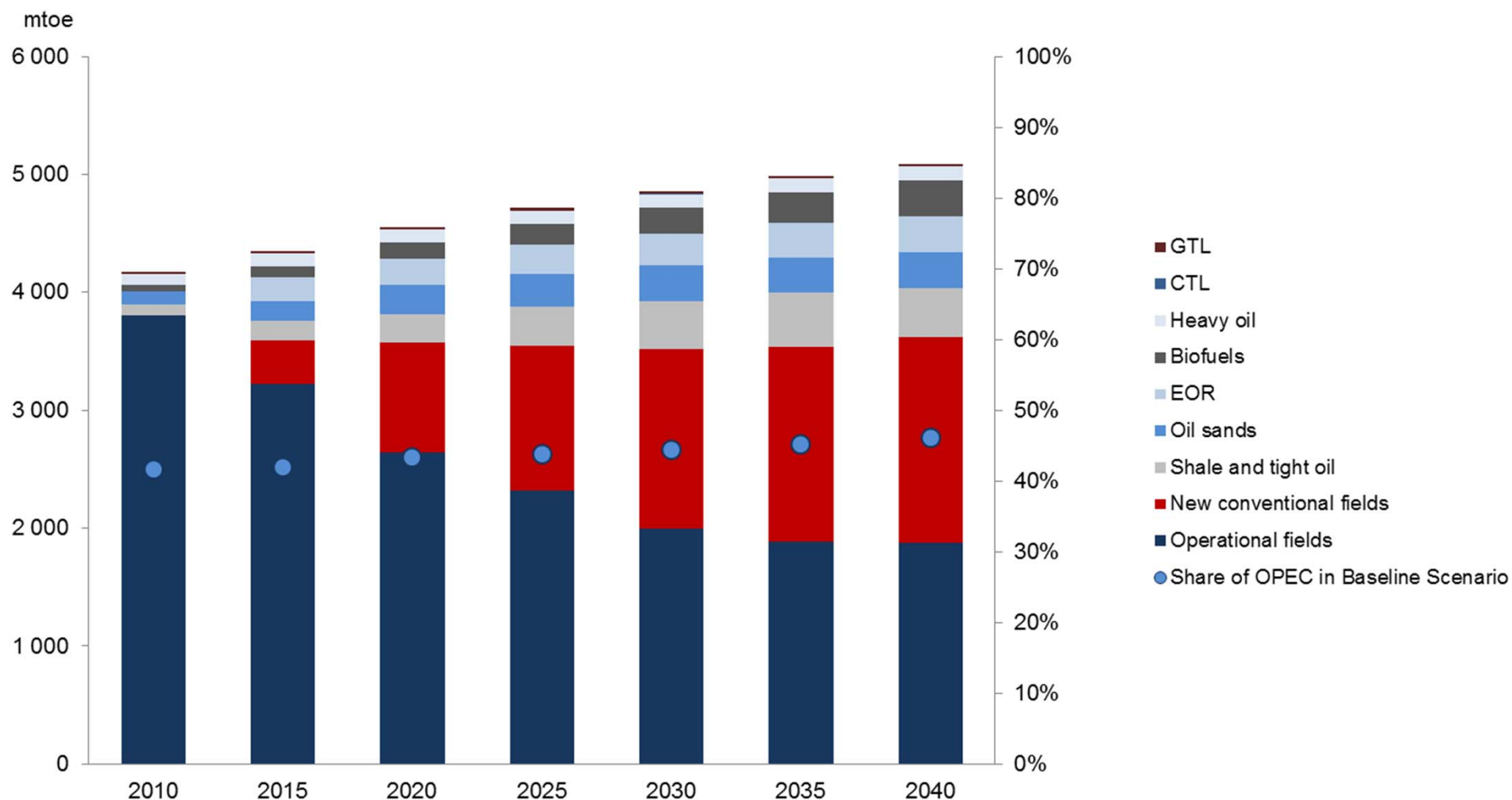


Source: ERI RAS



Unconventional oil will reach 16% of total production (840 m tons by 2040)

Dynamics of liquid fuels supply structure, Baseline Scenario

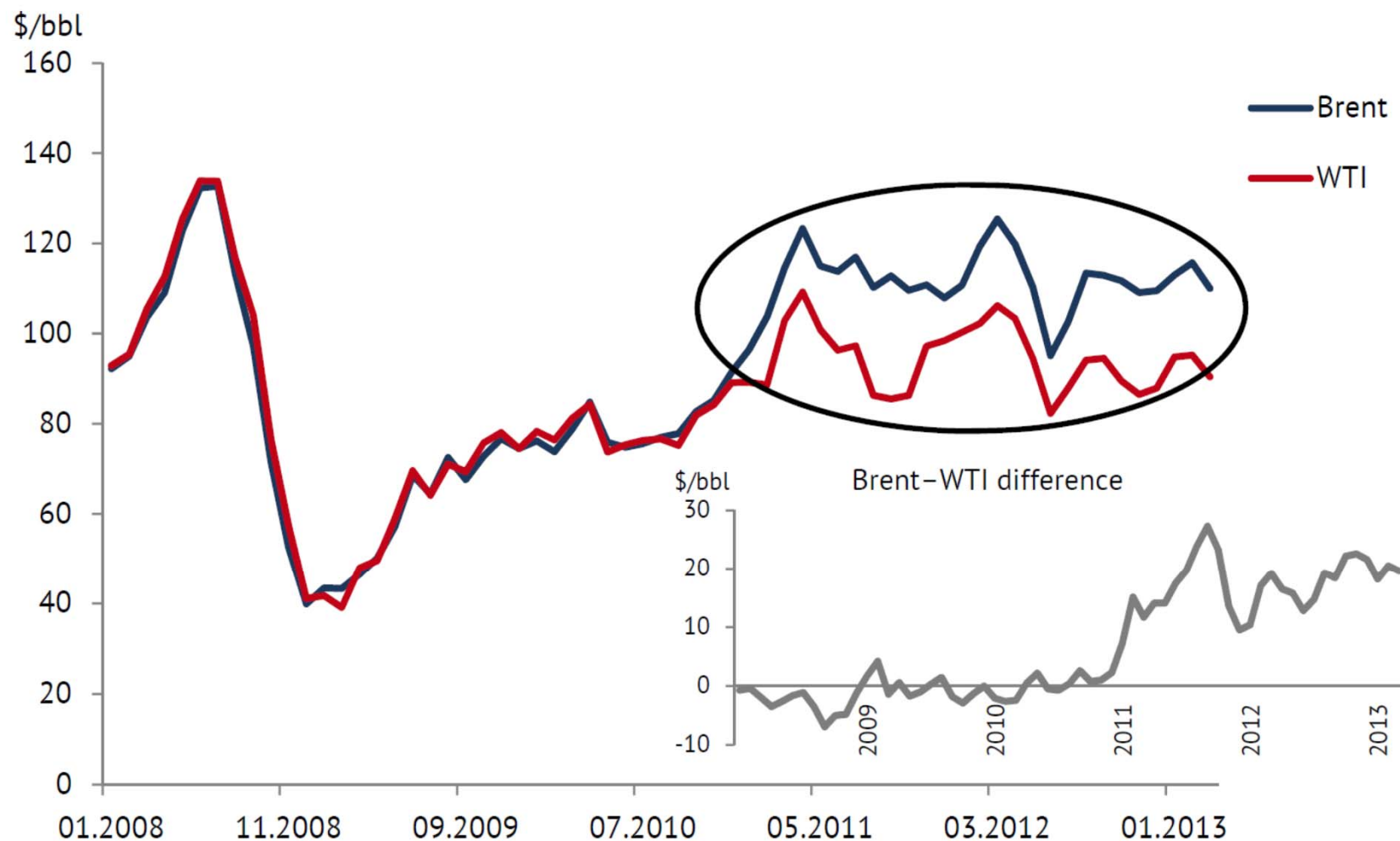


Source: ERI RAS



**The gap between oil markers is widening,
reflecting continued regionalization of the oil market**

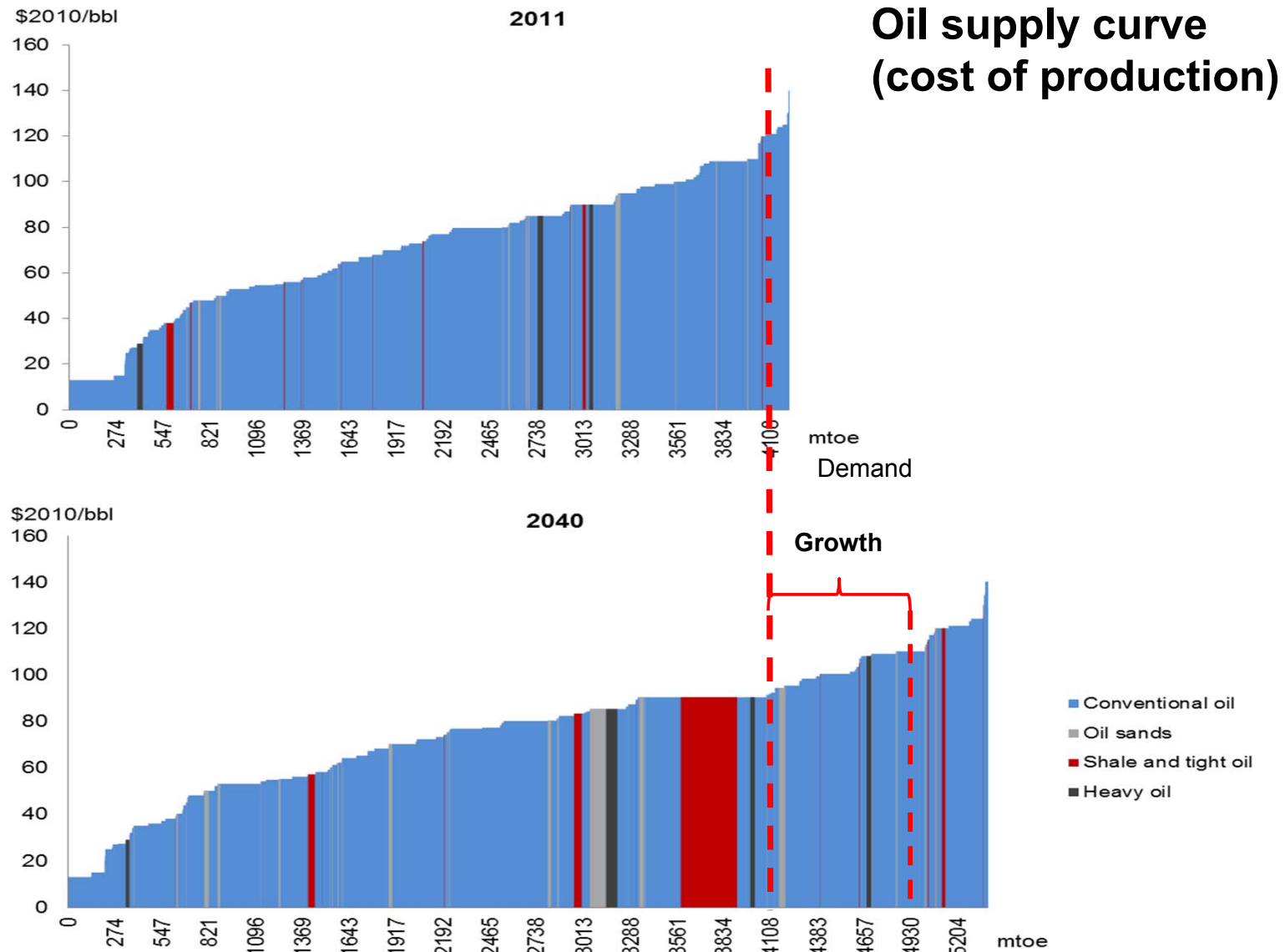
Historical WTI and Brent price dynamics



Source: ERI RAS



By 2040, the supply of oil will increase by 1 bn tons
There are no fundamental reasons for significant growth of oil prices
at the forecasted levels of demand

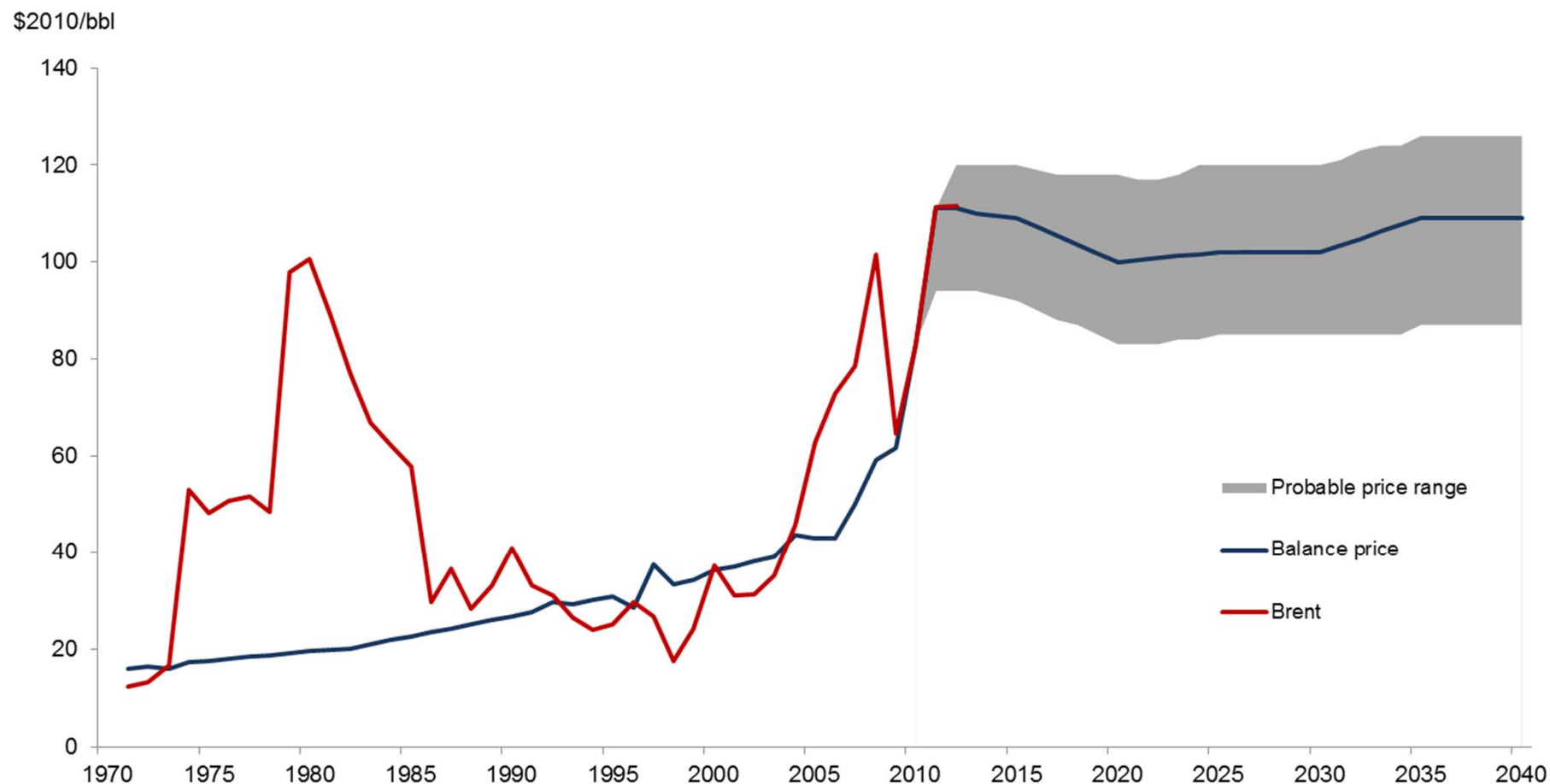


Source: ERI RAS



Equilibrium oil prices will remain within the price range corridor, defined as the possible deviation of local oil markers in European, North American, and Asian markets

Projected price range of equilibrium oil prices

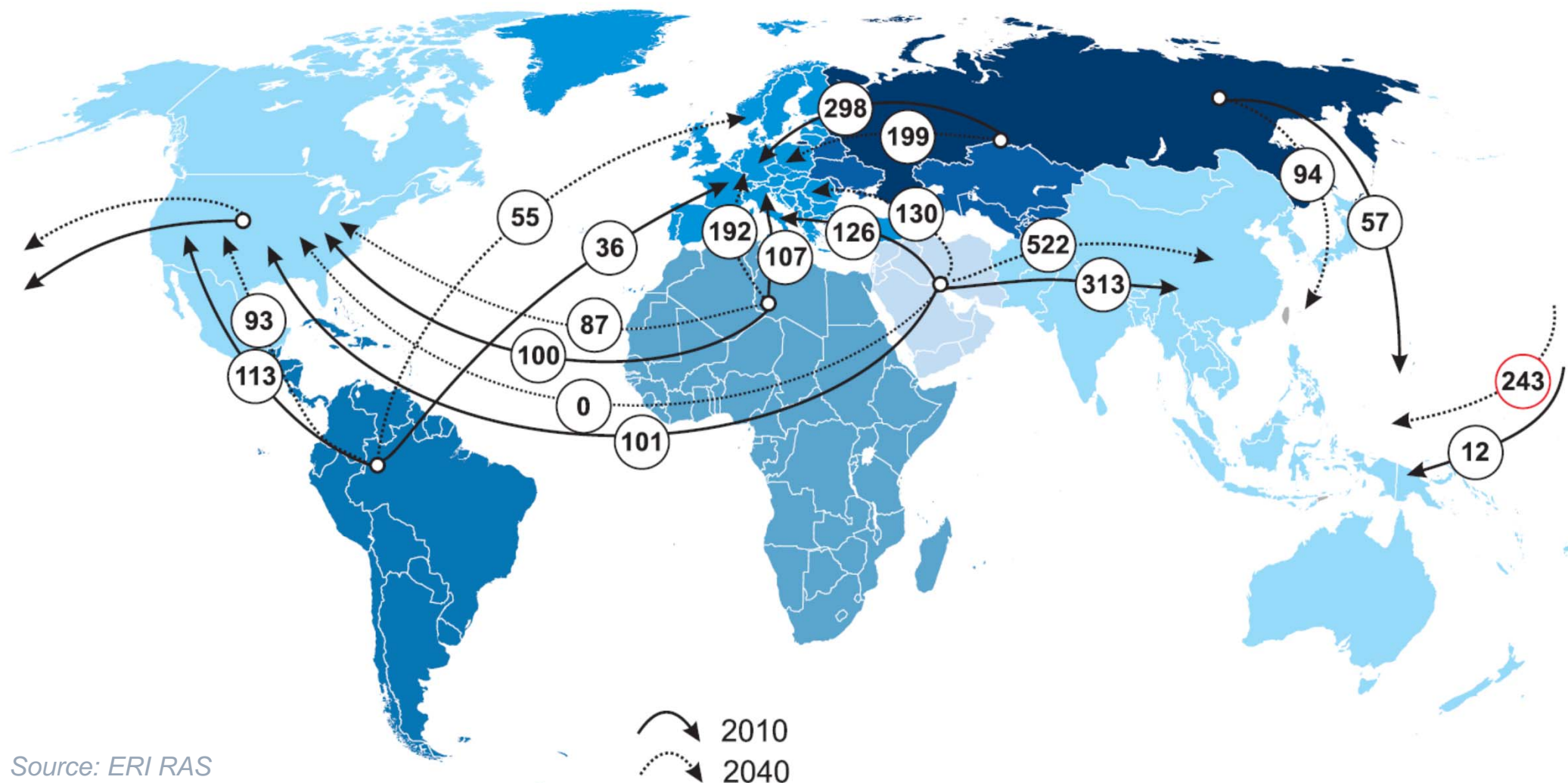


Source: ERI RAS



Trade flows in the oil market will change fundamentally by 2040: export market niches will narrow by 275 m tons for key producers, in comparison to 2010

Main directions of oil flows, million tons



Source: ERI RAS



Shale technologies create the greatest uncertainty

‘Shale Breakthrough’

- By 2020, the new waterless technology for the production of oil and gas from low-permeability formations will be fully developed. As a result, oil and gas fields located in China, Jordan, Israel, Mongolia, and other countries will enter into operation
- Environmental restrictions on oil and gas production from shale plays would be removed
- Global shale oil production costs would equal the levels of US production costs (less than \$80/bbl of oil and \$150/1000 m³ for gas)
- Shale oil production in the world by 2040 will reach 745 m tons, and shale gas - 825 bcm

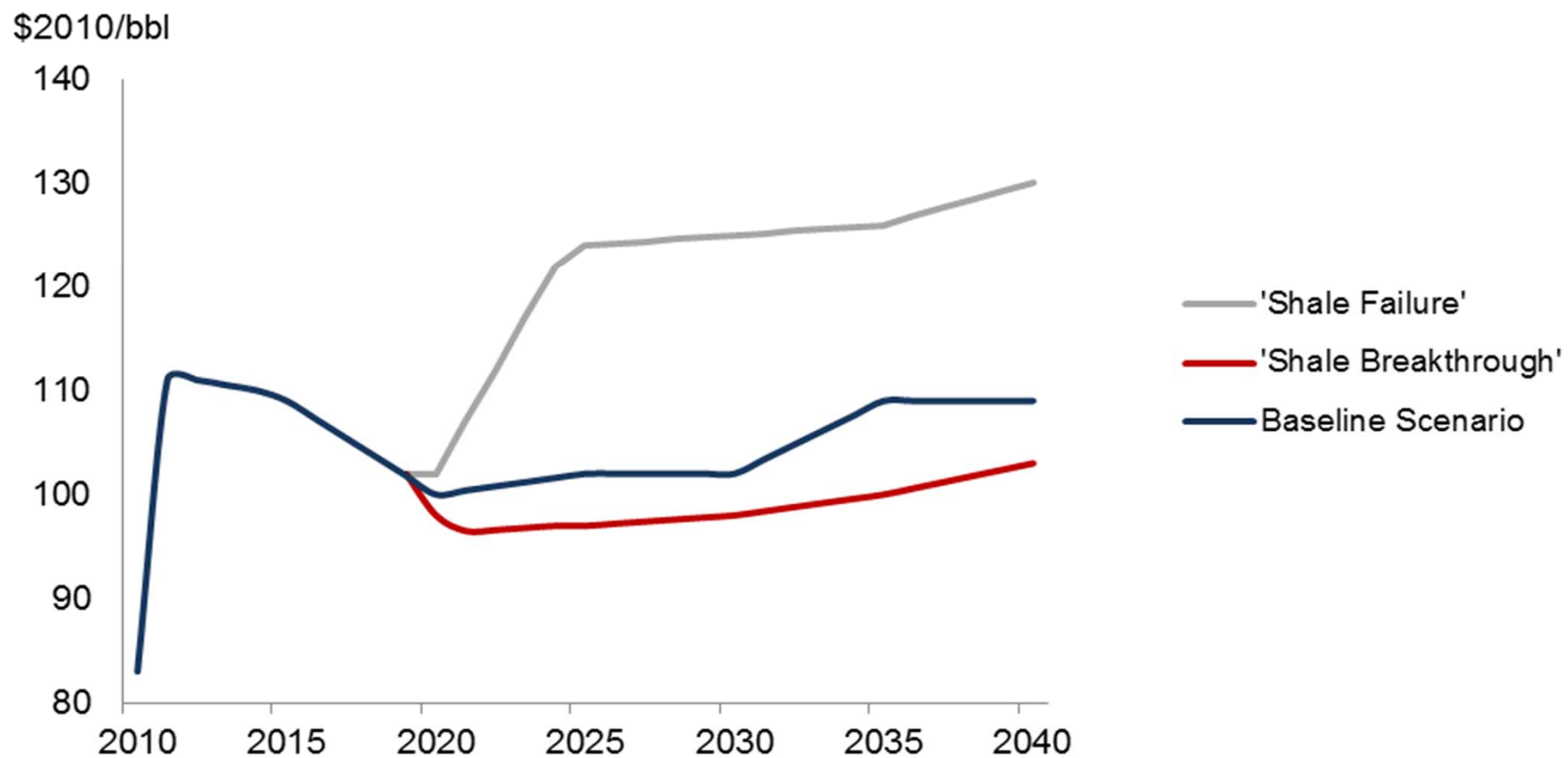
‘Shale Failure’

- Significant cost increase for new production projects
- No confirmation of large resource base
- Introduction of strict environmental constraints
- New waterless and heat extraction technologies for shale oil and gas production are inappropriate, for economic and/or environmental reasons
- Starting from 2020, shale oil and gas production in the USA begins to decline rapidly, and practically stops by 2025
- Production of shale oil and gas continues only in countries where it has already commenced and rapidly reduces to zero



'Shale Breakthrough' and 'Shale Failure' Scenarios: oil prices

Equilibrium oil prices in the three scenarios

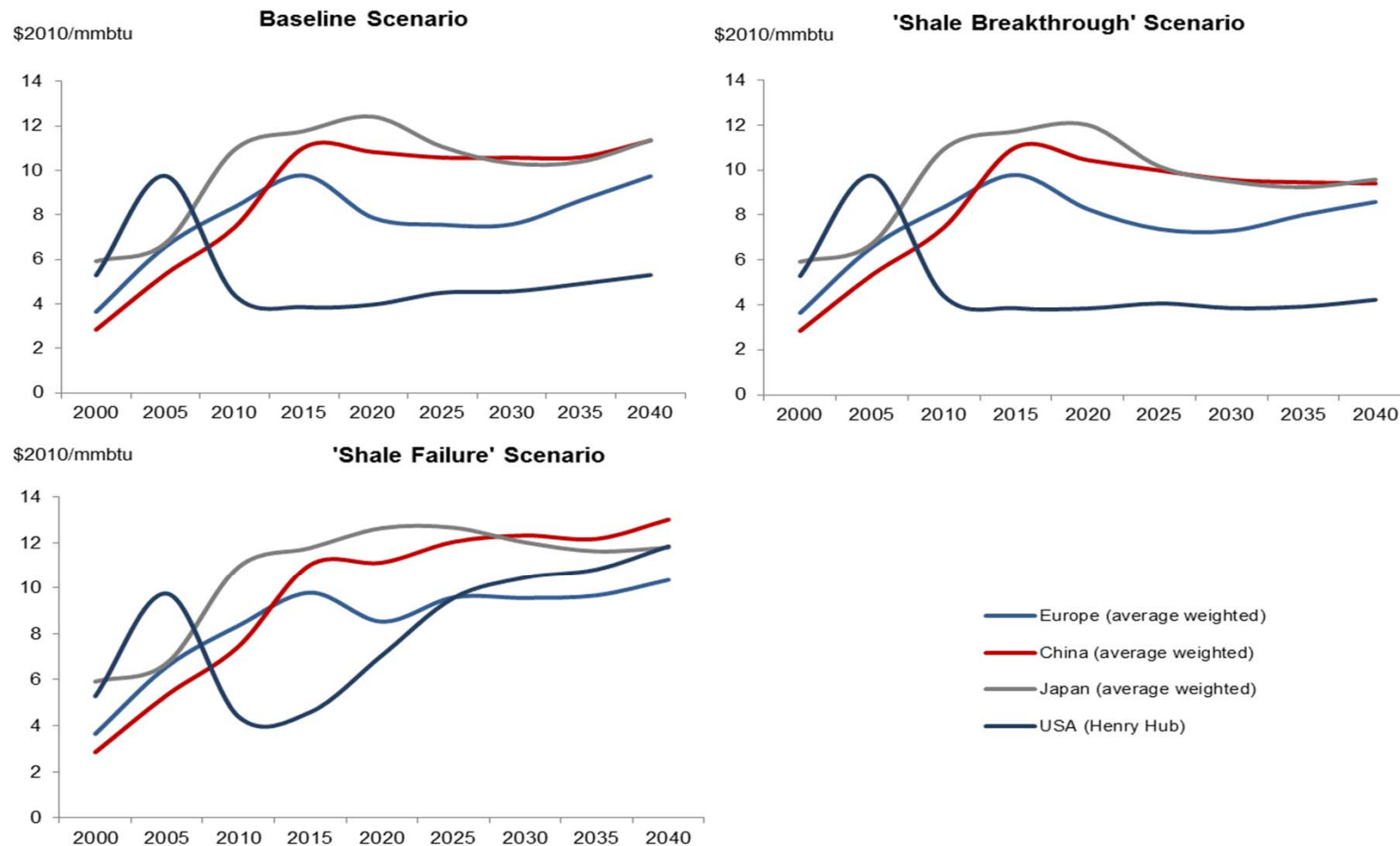


Source: ERI RAS



'Shale Breakthrough' and 'Shale Failure' Scenarios: gas prices

Equilibrium gas prices in the three scenarios

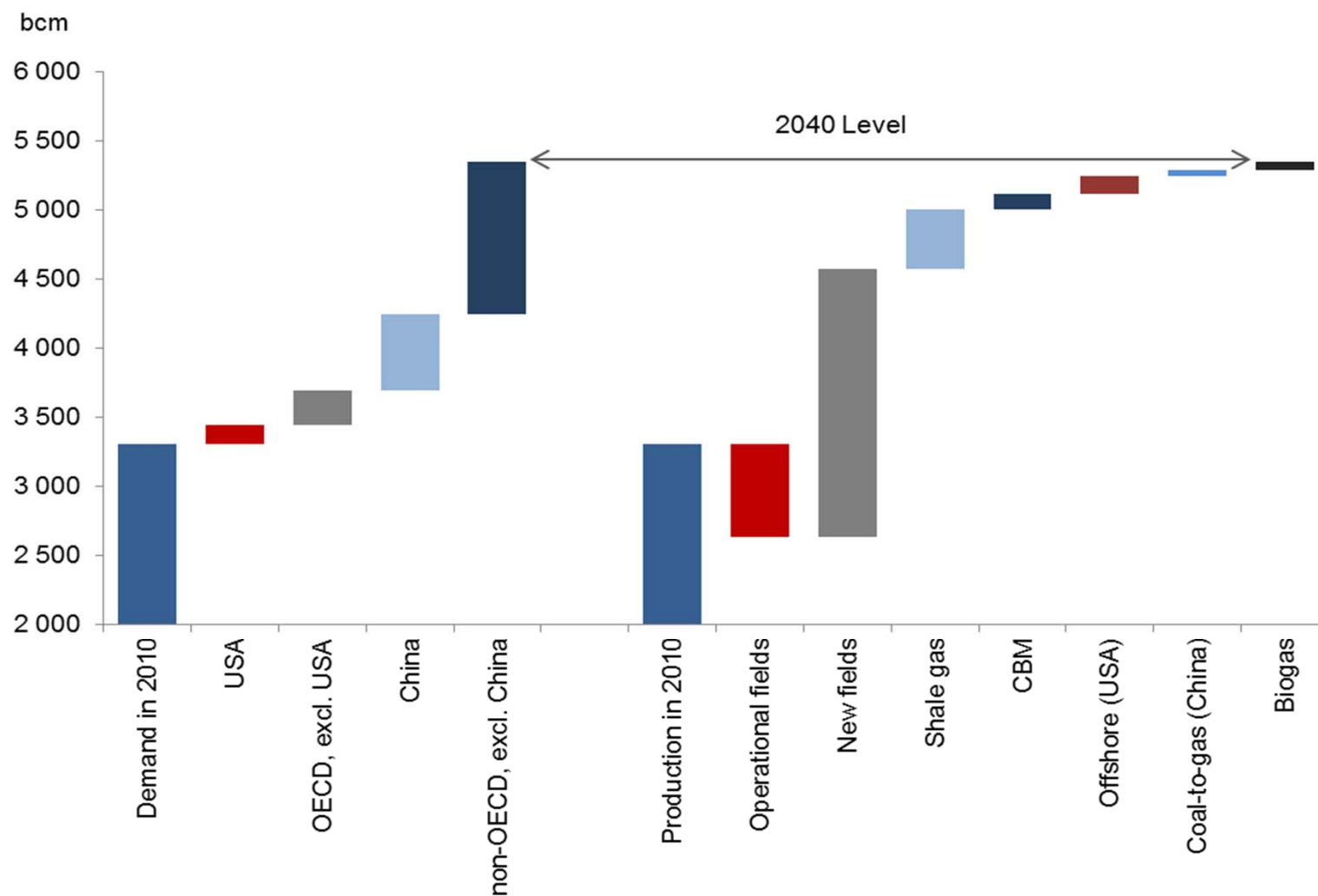


Source: ERI RAS



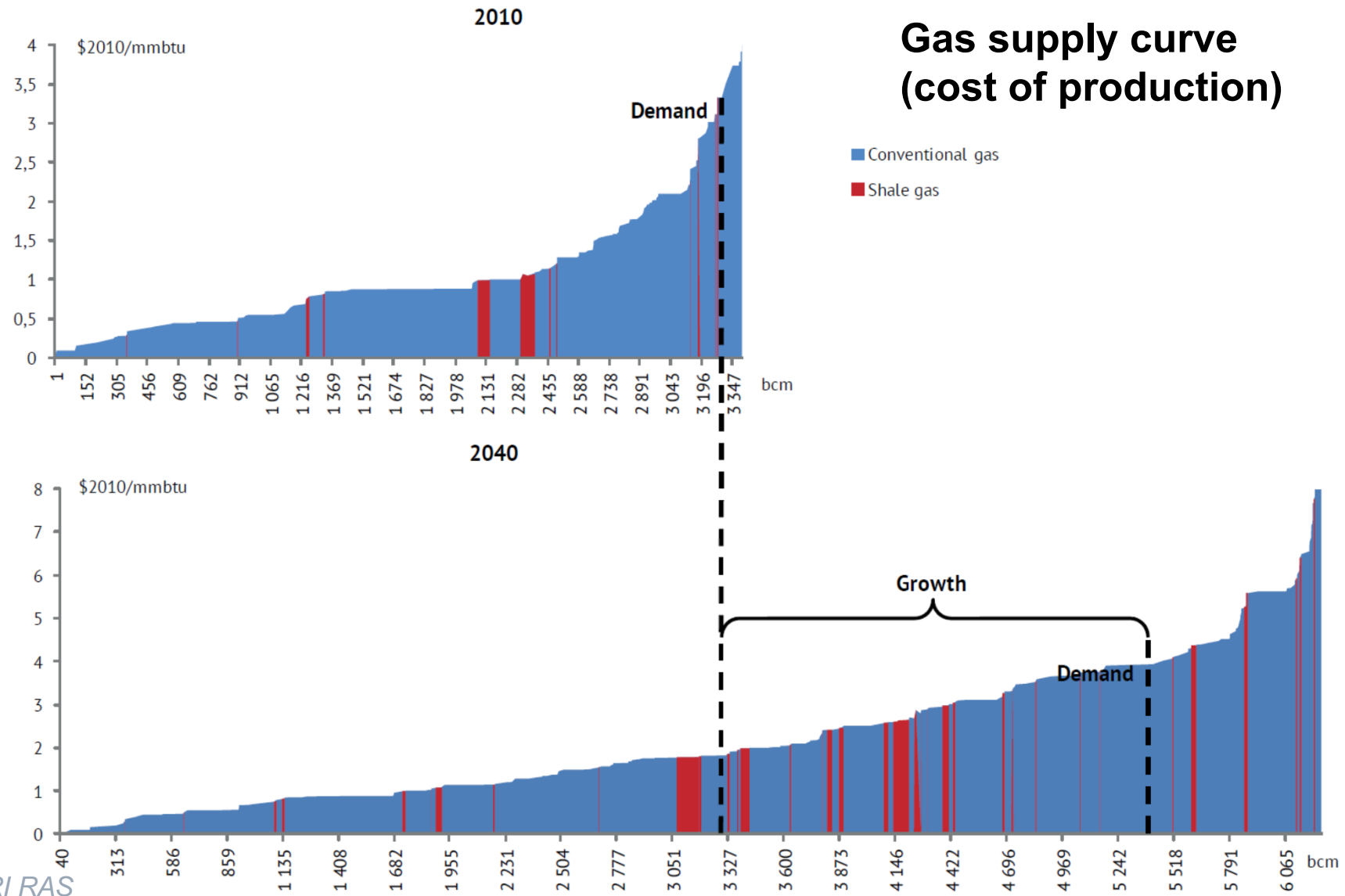
Gas market development

The balance of gas supply and demand in 2040





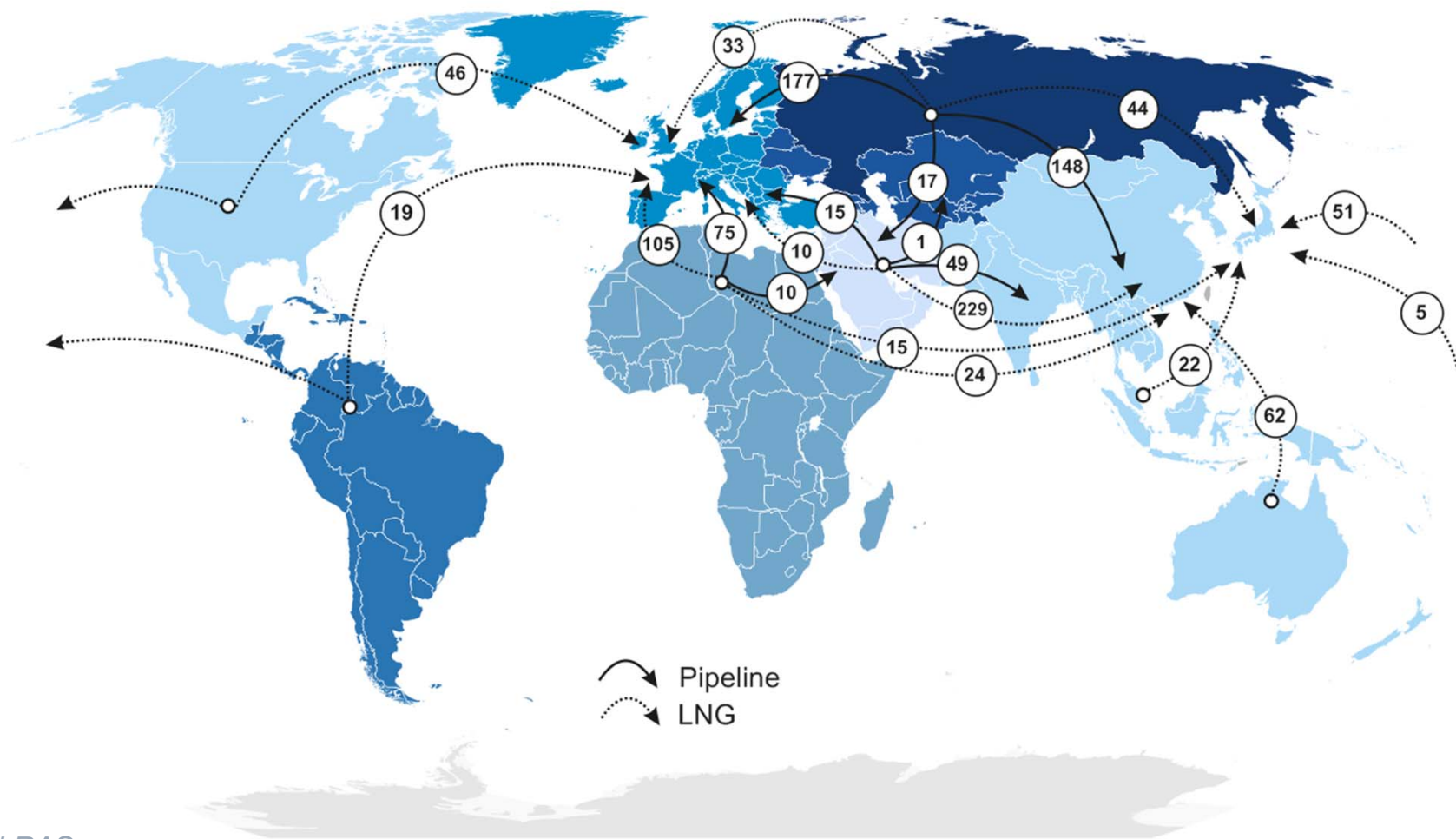
There will be a need to expand gas production by 2 tcm by 2040





For the next three decades, the main focus of the international gas trade will be Asia which will increase its net imports by nearly 500 bcm by 2040

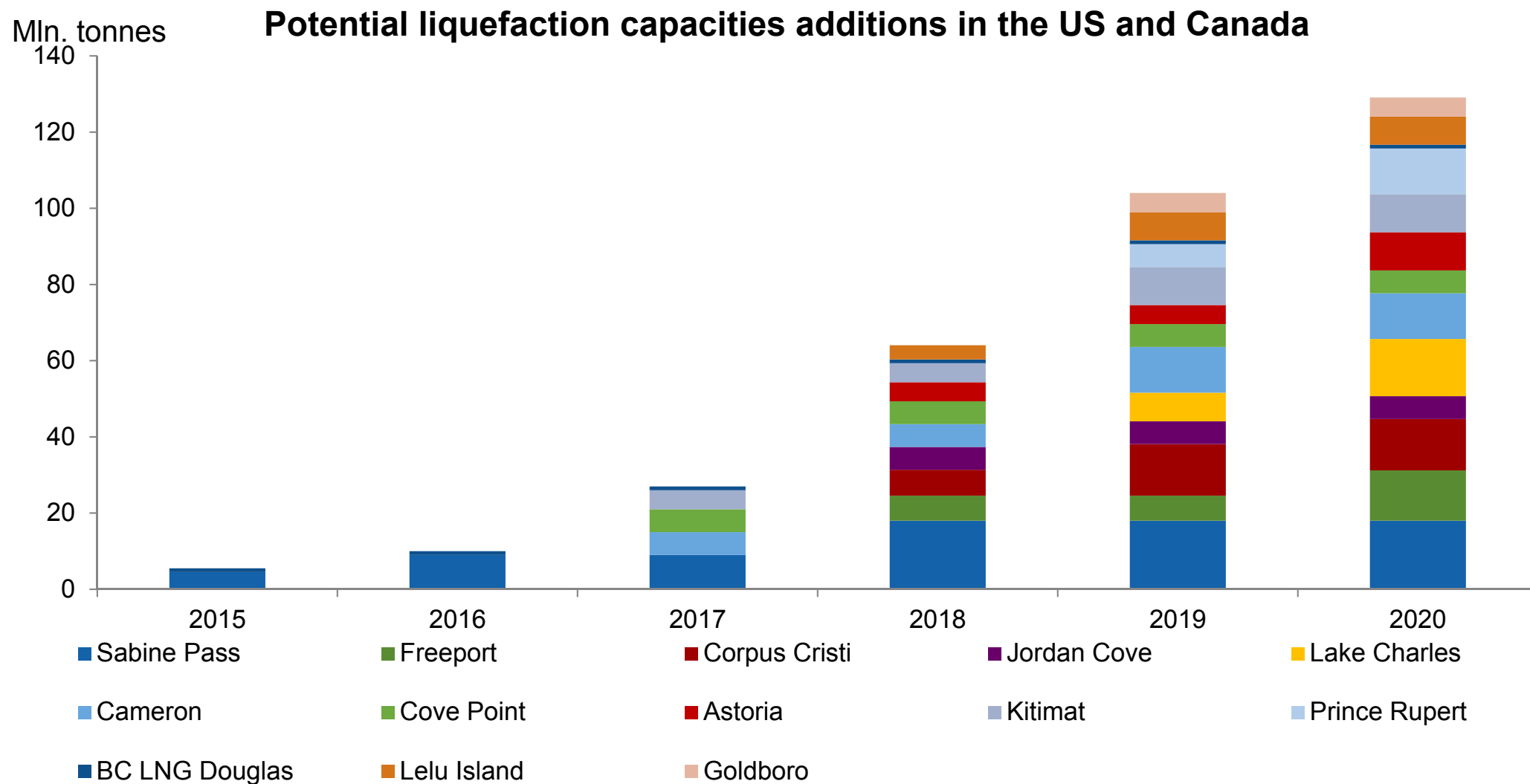
Inter-regional gas trade in 2040, bcm



Source: ERI RAS



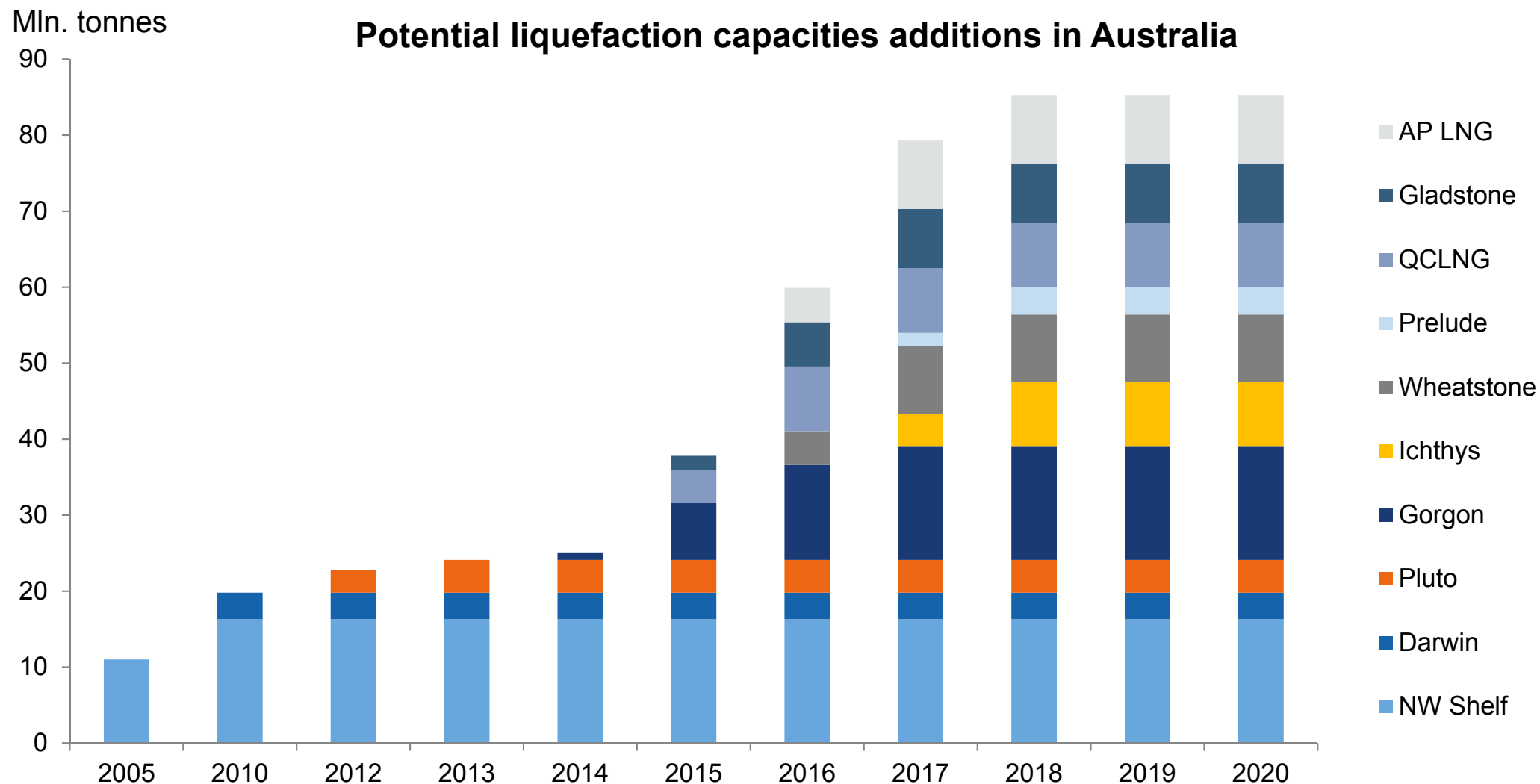
We don't know the future US (and Canadian) LNG export volumes



Source: ERI RAS



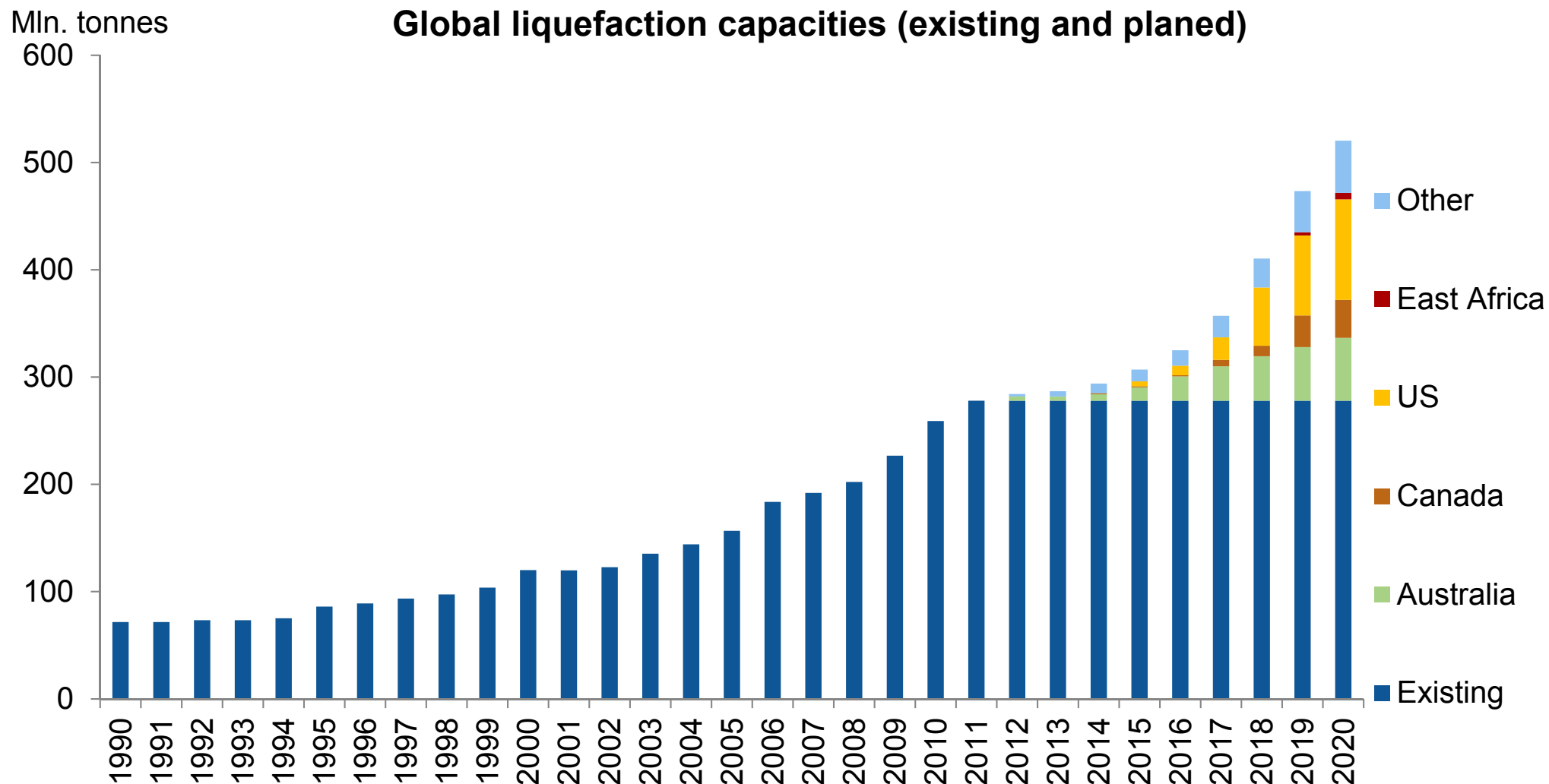
New LNG projects will make Australia LNG producer #1 by 2018, but they face delays and cost overruns



Source: ERI RAS



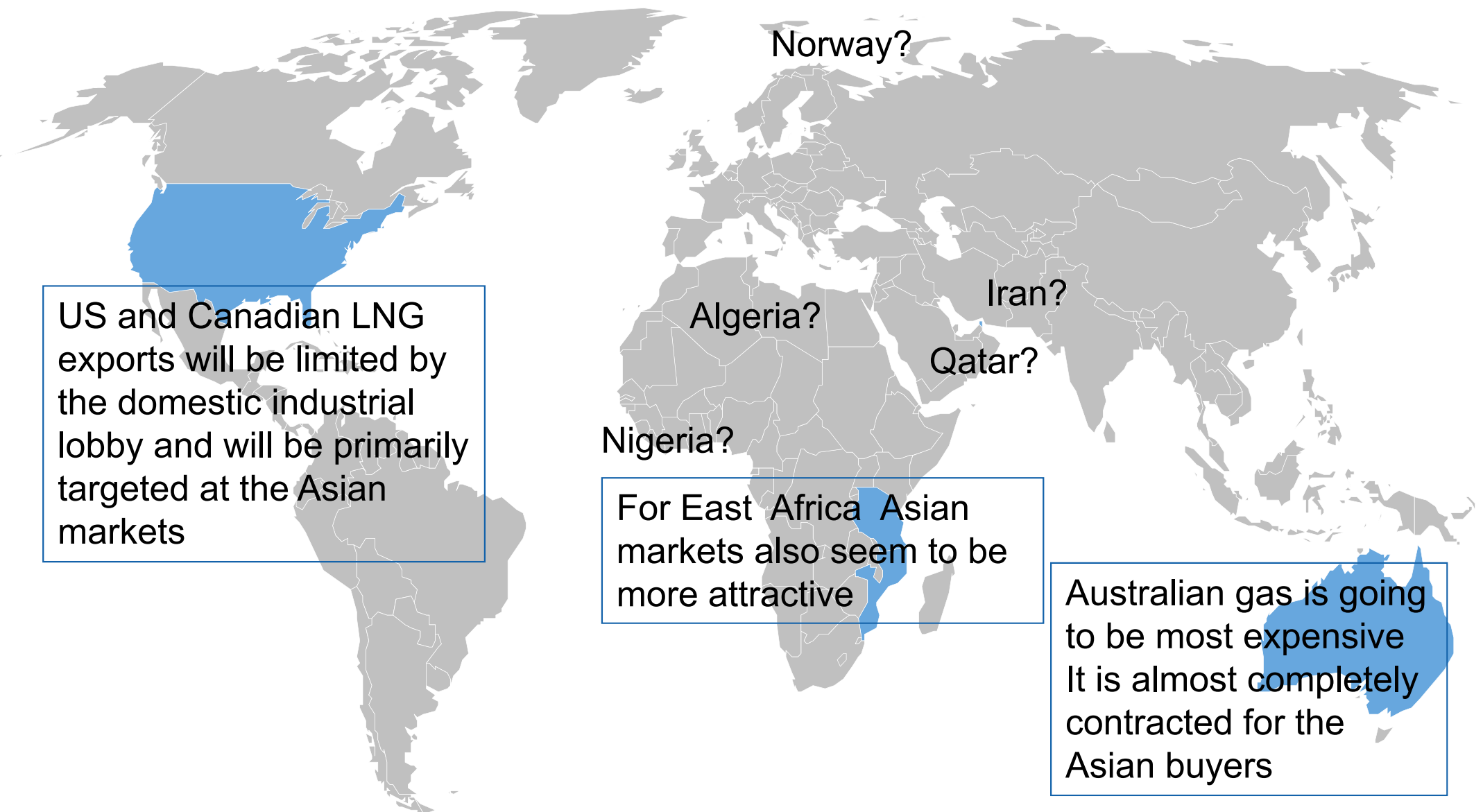
Global LNG supply is expected to boom during the next decade, but this growth is associated with great uncertainties



Source: ERI RAS



Devil is in detail: where will new LNG to Europe come from?



US and Canadian LNG exports will be limited by the domestic industrial lobby and will be primarily targeted at the Asian markets

Norway?

Algeria?

Iran?

Qatar?

Nigeria?

For East Africa Asian markets also seem to be more attractive

Australian gas is going to be most expensive
It is almost completely contracted for the Asian buyers



Energy Research Institute of the Russian Academy of Sciences

"Global and Russian Energy Outlook up to 2040"

http://www.eriras.ru/files/Global_and_Russian_energy_outlook_up_to_2040.pdf

"Прогноз развития энергетики России и мира до 2040 года"

<http://ineiran.ru/articles/prognoz-2040.pdf>