



Dr. Tatiana Mitrova

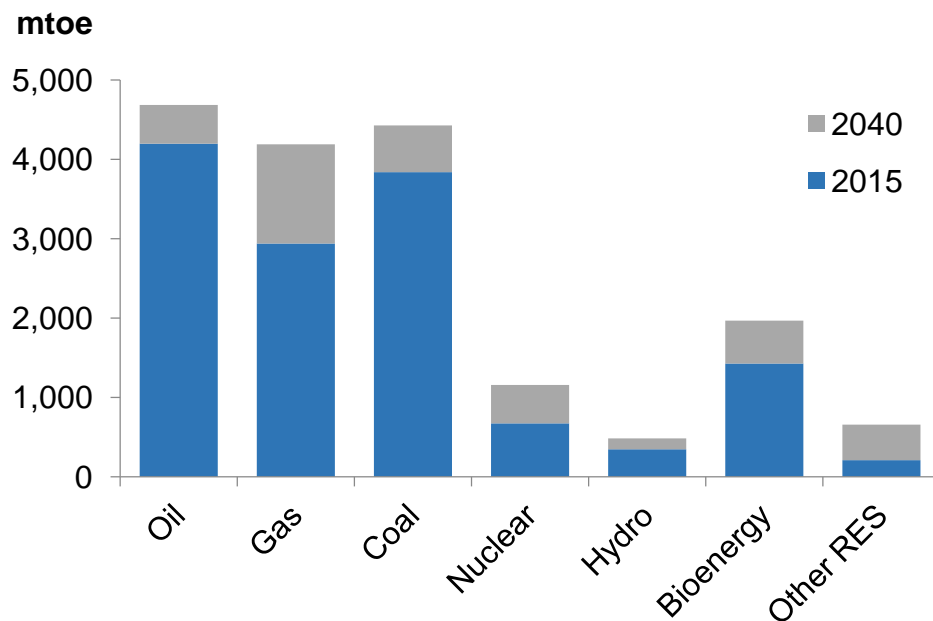
How should the energy security of oil,
which heavily depends on Mid-East and
Russia, be guaranteed?

Tokyo, 18 May 2017

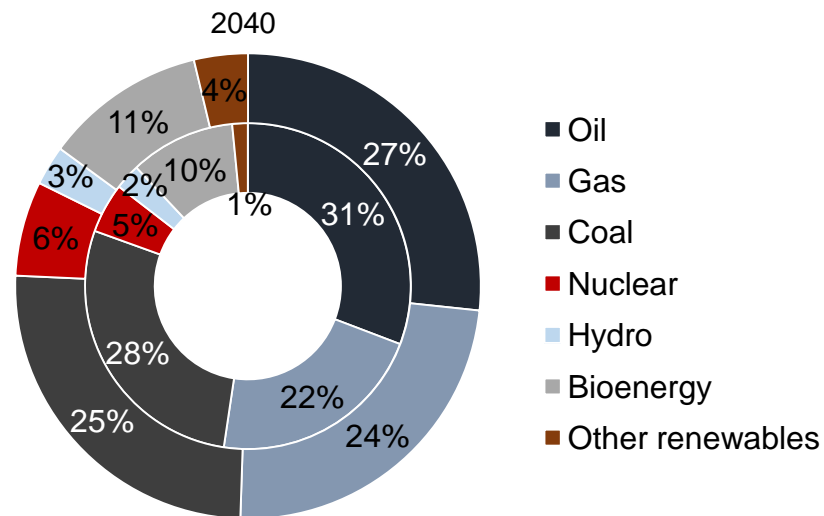


Fossil fuels are still dominating the fuel mix, though it is becoming more diversified: gas and RES are demonstrating the highest growth rates

Primary energy demand by fuel
(in 2015 and increase by 2040),
Probable Scenario



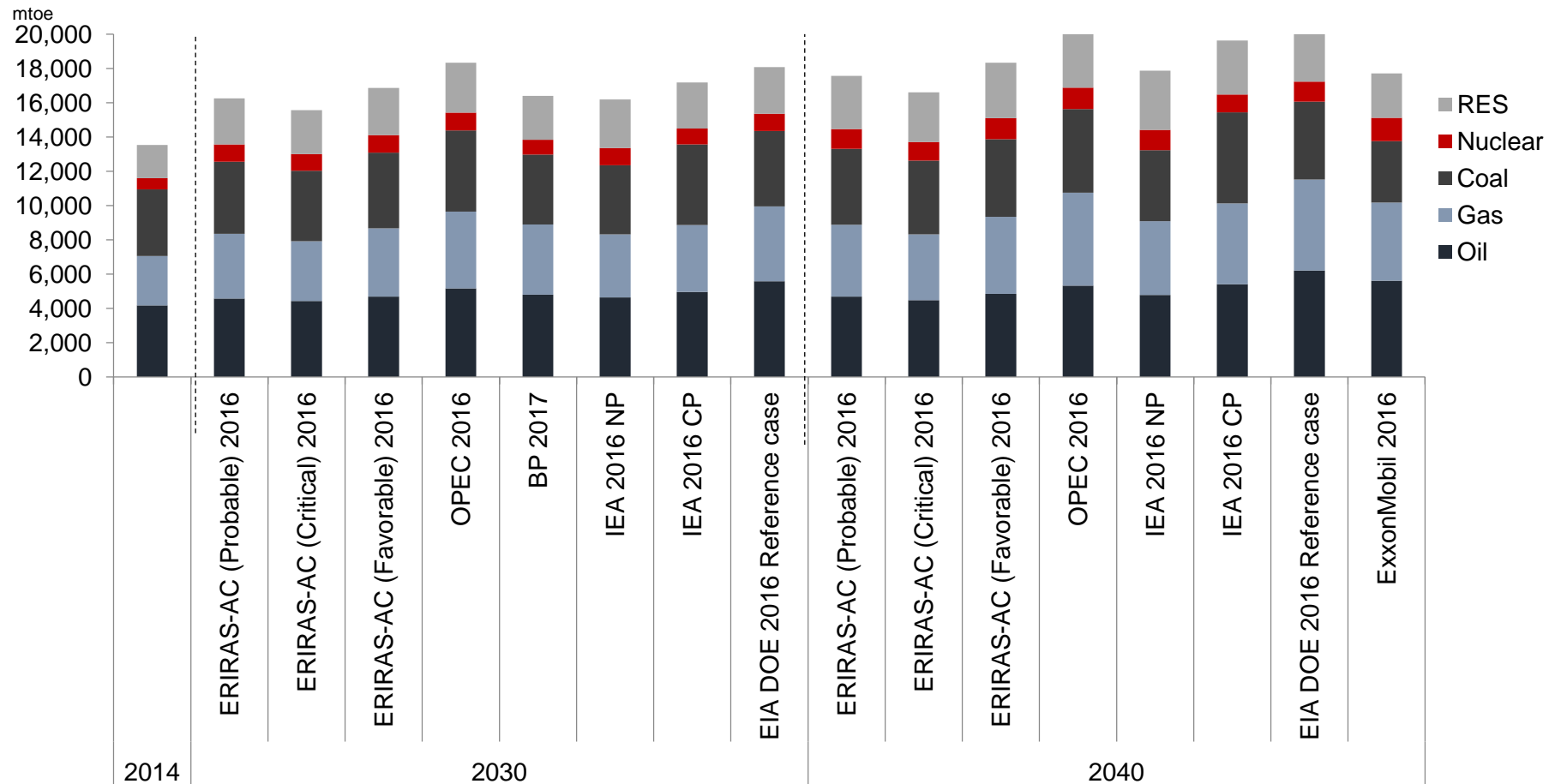
Structure of primary energy demand by fuel in
2015 and in 2040, Probable Scenario





In all the demand projections even by 2040 oil plays an important role in energy supply

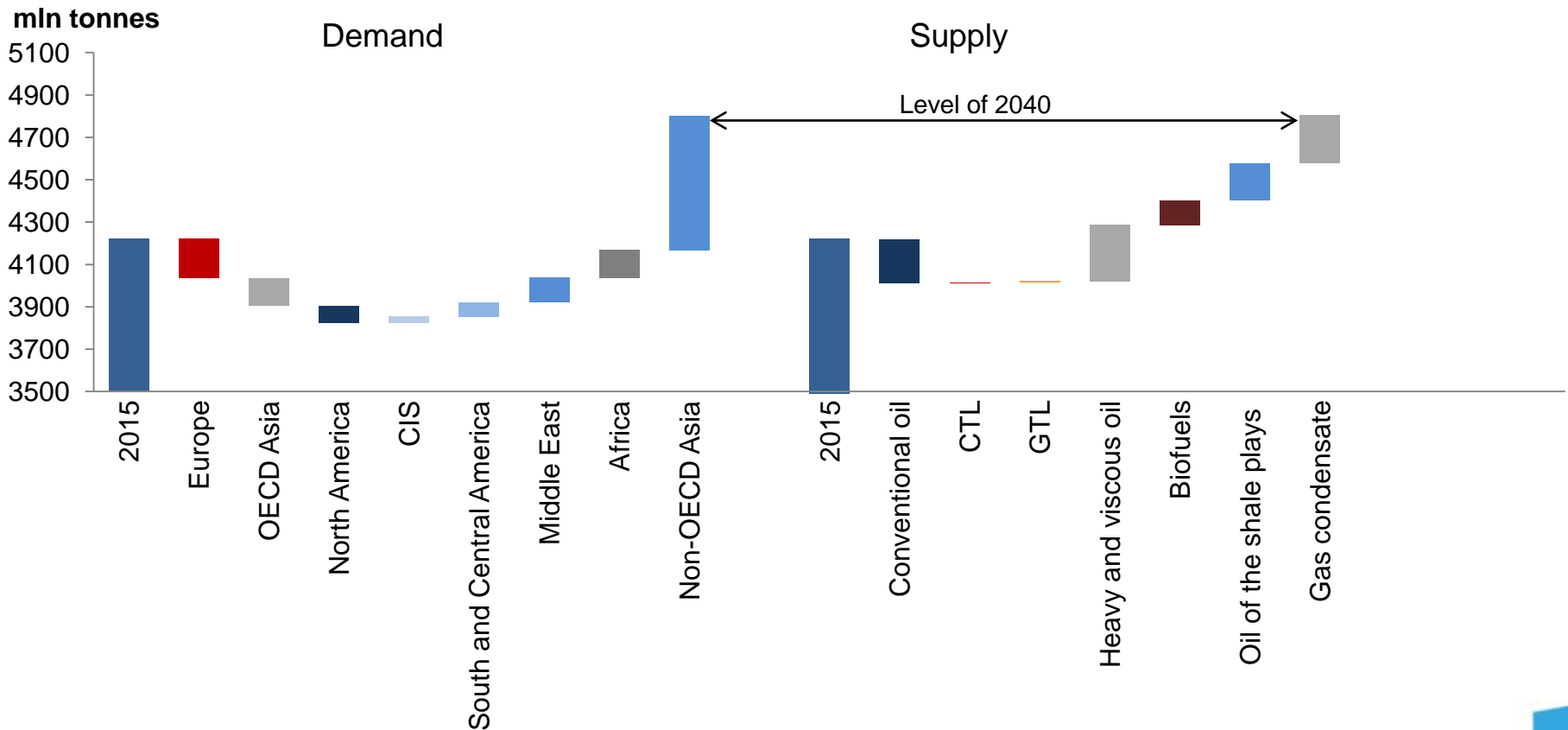
Primary energy demand scenarios comparison





Global liquids balance: non-OECD Asia demand growth cannot be covered by unconventional oil

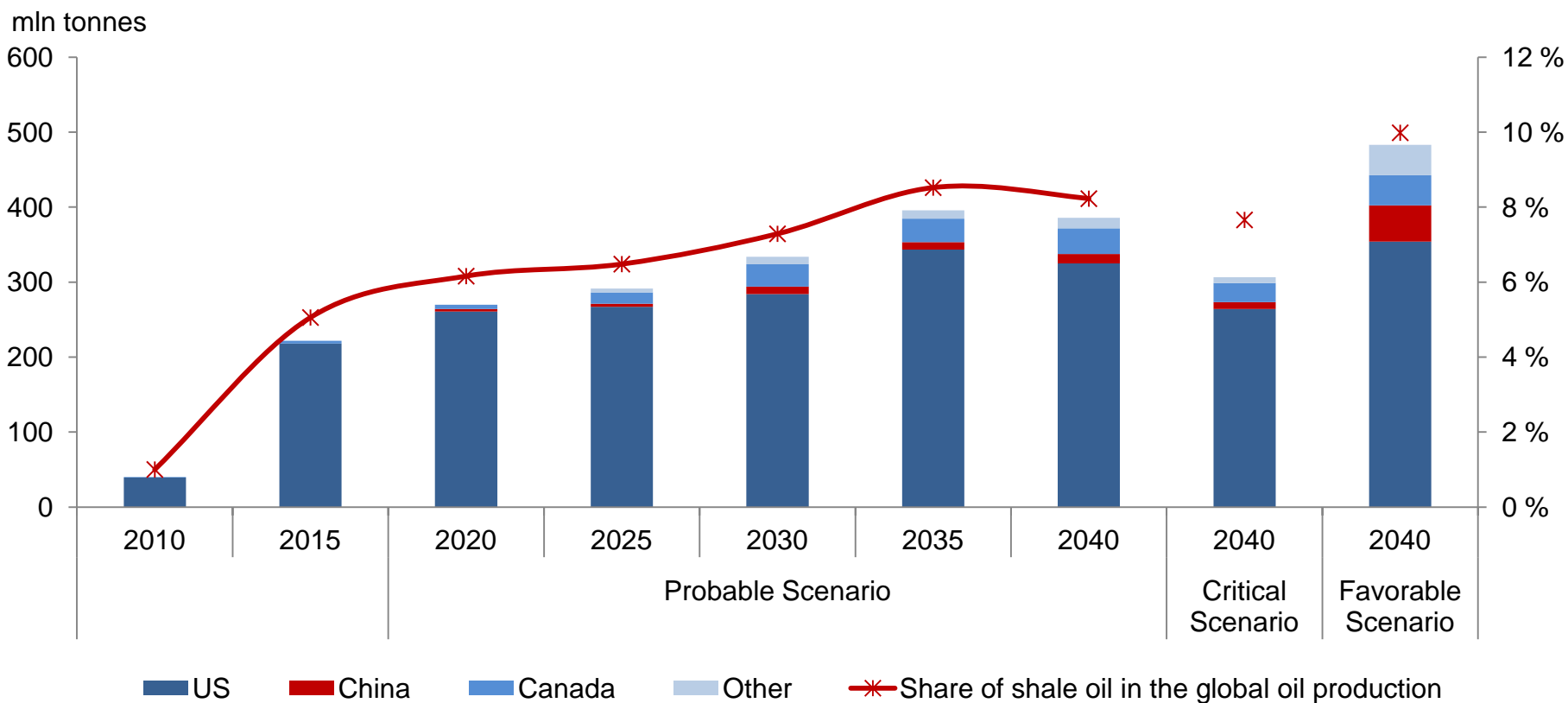
Liquid fuel supply-demand balance by the region and by the type of supply source





Shale oil production will be dominated by the US, but its shale output will peak by 2030-2035

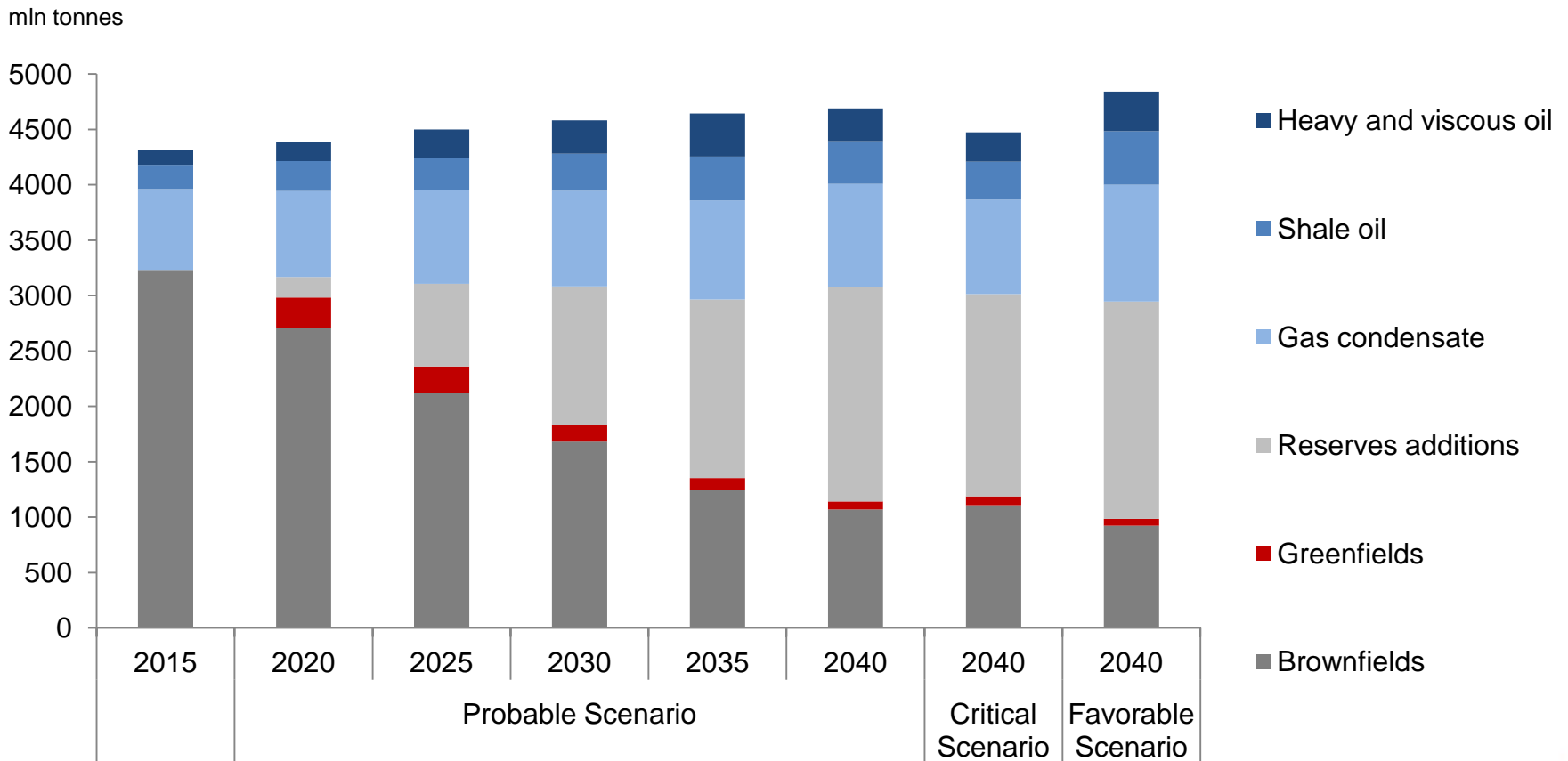
Shale oil production by country for three scenarios





Peak of the global conventional oil production is expected already by 2020: a lot of oil needs to be found in order to compensate for the decline

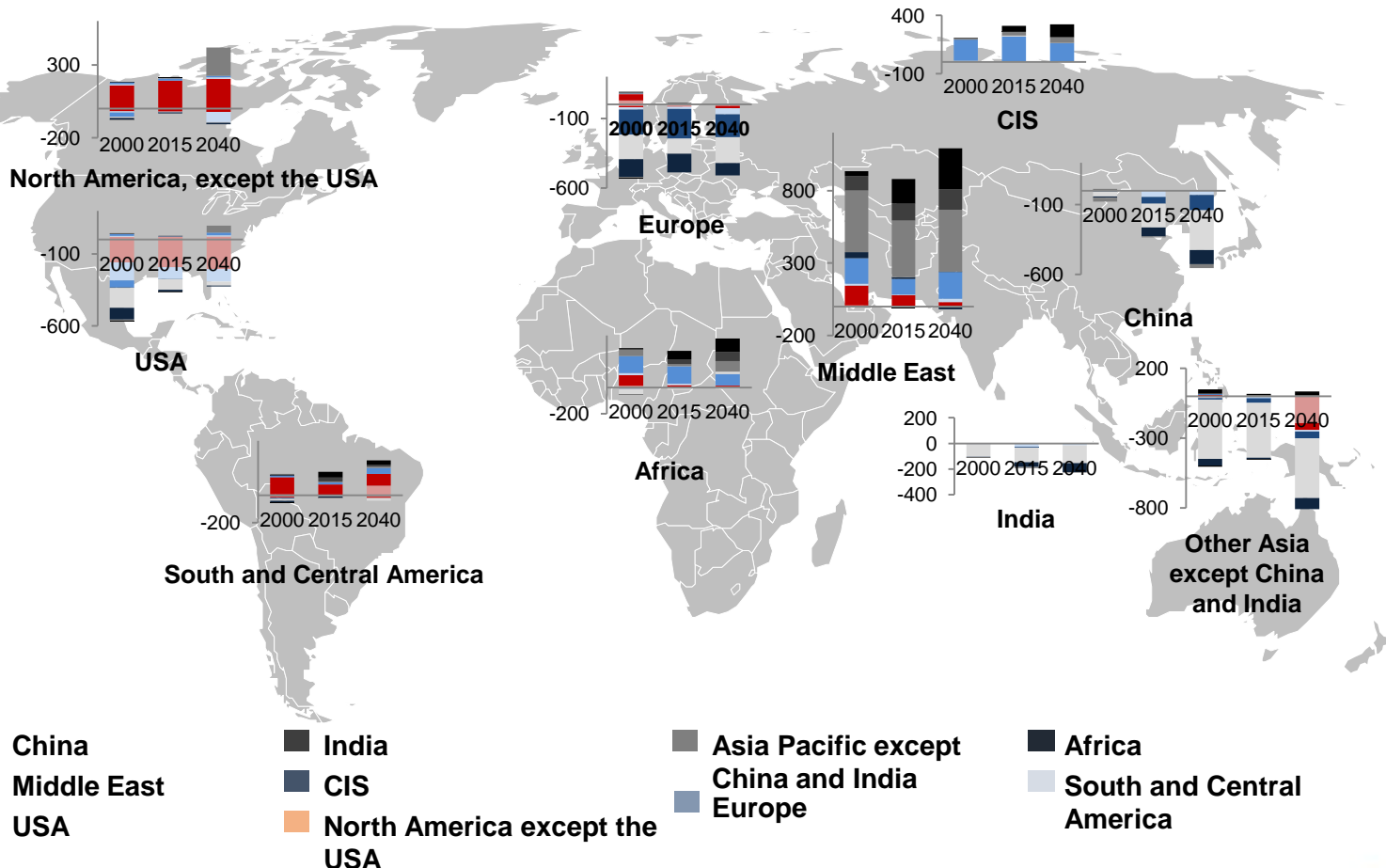
Global oil production by type in 2015-2040 for three scenarios





Global crude oil trade: Middle East, South and Central America, Africa and CIS will be the main exporting regions

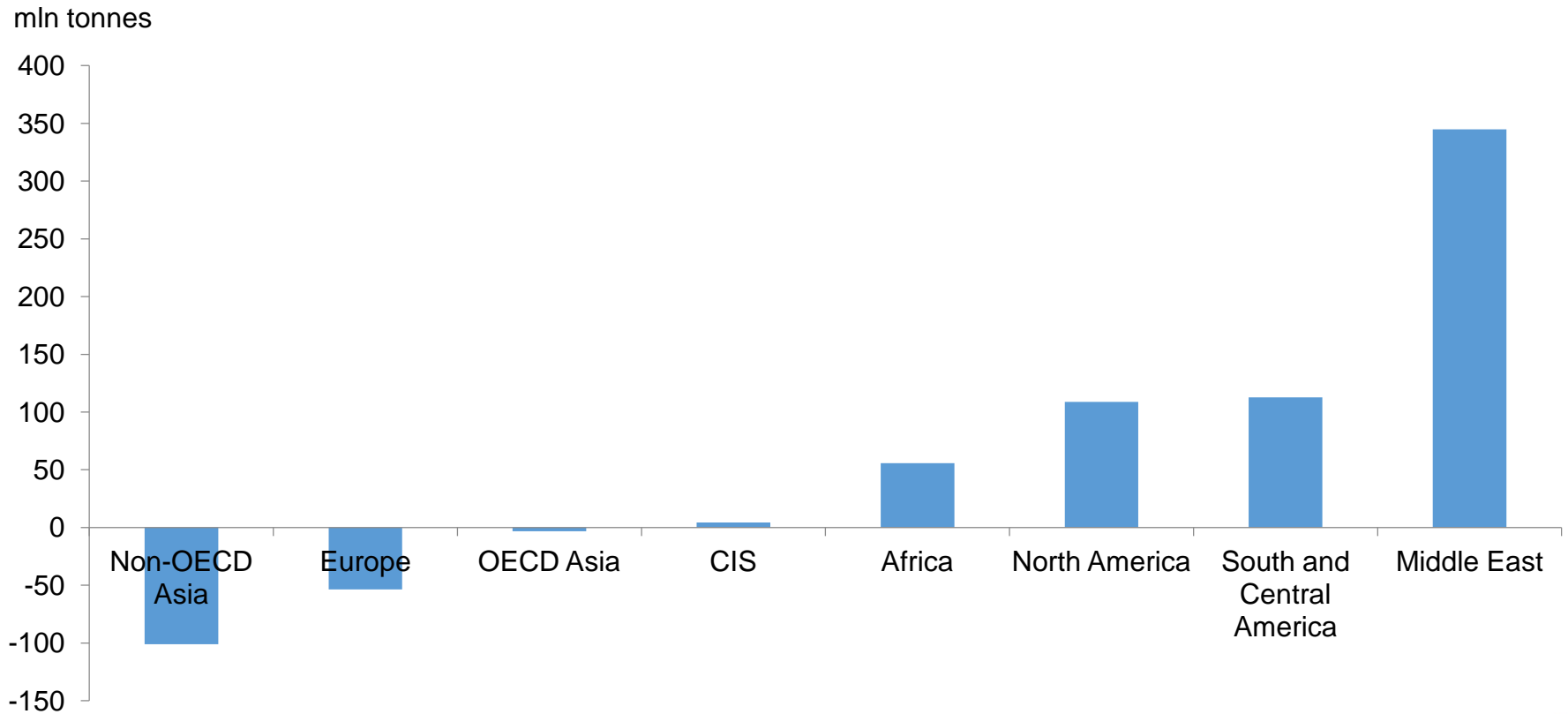
Crude oil export and import by region, Probable Scenario





Main increase in production will be provided by the Middle East, but it could be challenged by the geopolitical instability in the region

Oil production increase by country in 2015-2040



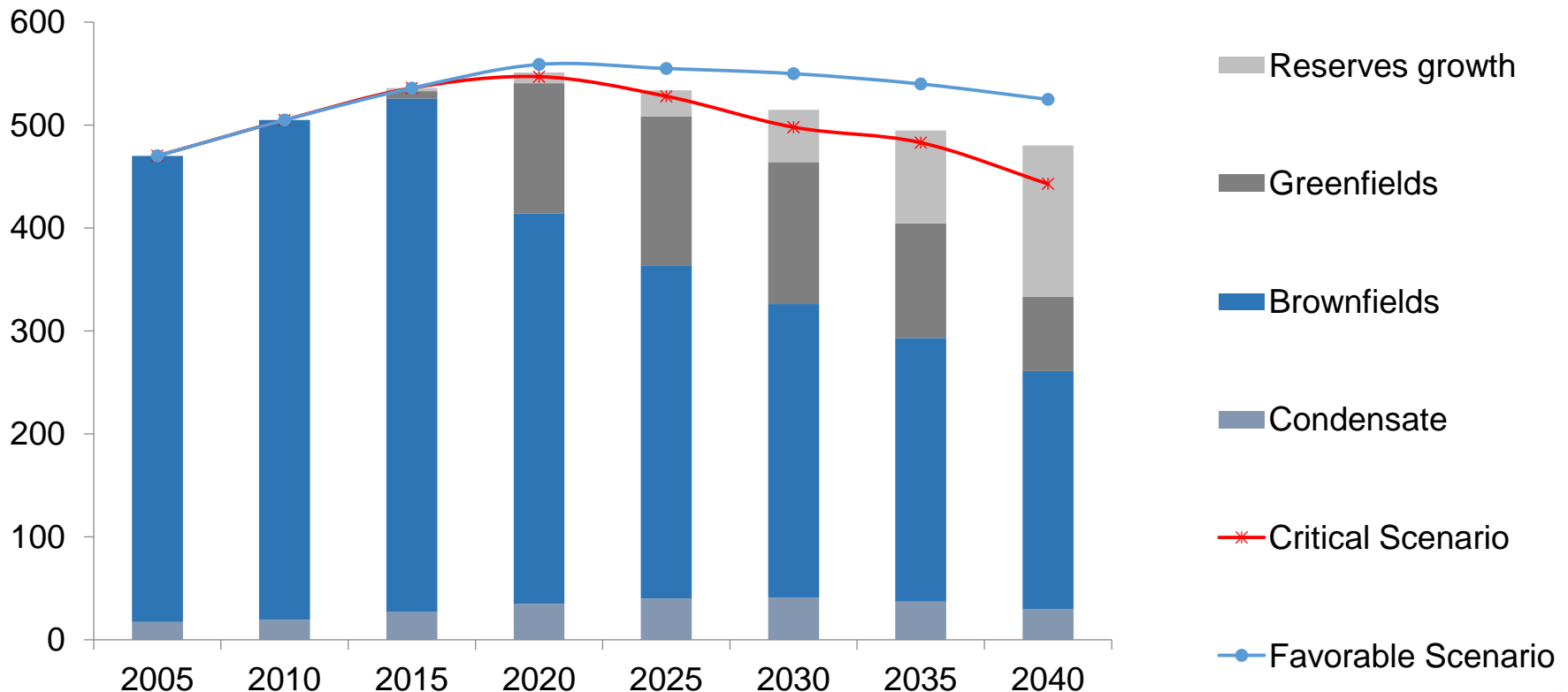
Source: Global and Russian Energy Outlook-2016, ERI RAS-AC



Russian oil output will decline in all scenarios post 2020: only massive investments and new technologies could stop this decline

Russian oil output outlook

mln tonnes





Conclusions

- Fossil fuels (and oil in particular) will still play an important role in the future fuel mix
- Huge investments are required even to keep oil production flat in the long term
- Low oil prices force companies to cut investments and to focus on low cost production, thus raising risk of supply shortfall
- By 2040 supply outlook includes ~40% from oil yet to be discovered
- If US tight oil does not deliver, there is risk for price spike due to low OPEC spare capacity and limited other non-OPEC investment
- Strong financial mechanisms should be developed in order to support timely investments Mid-East and Russian oil sector - this is the only way to guarantee energy security of oil



Contact Information

Novaya st. 100, Skolkovo village, Odintsovsky District,
Moscow Region, Russian Federation 143025

Phone:	+7 495 539 30 03
Fax:	+7 495 994 46 68
web:	http://energy.skolkovo.ru
e-mail	energy@skolkovo.ru