

Oil and Natural Gas in Sub-Saharan Africa



August 1, 2013

Sub-Saharan Africa



Boundary representation is not necessarily authoritative

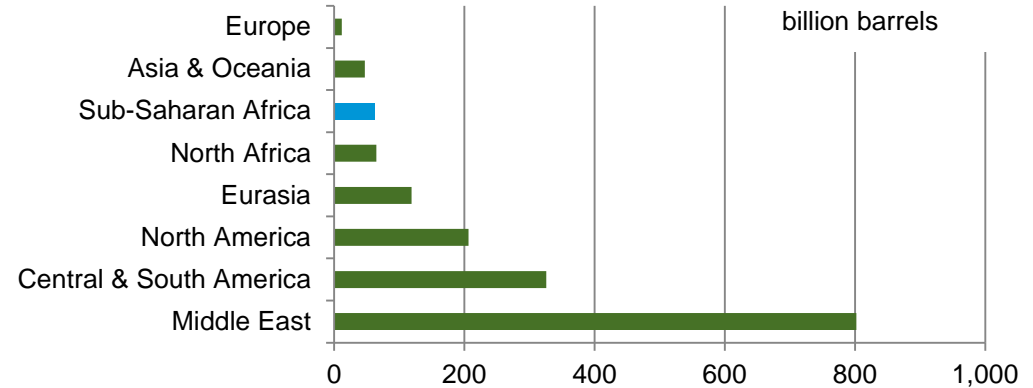
Source: U.S. Department of State

Liquid Fuels Reserves and Production in Sub-Saharan Africa

Overview

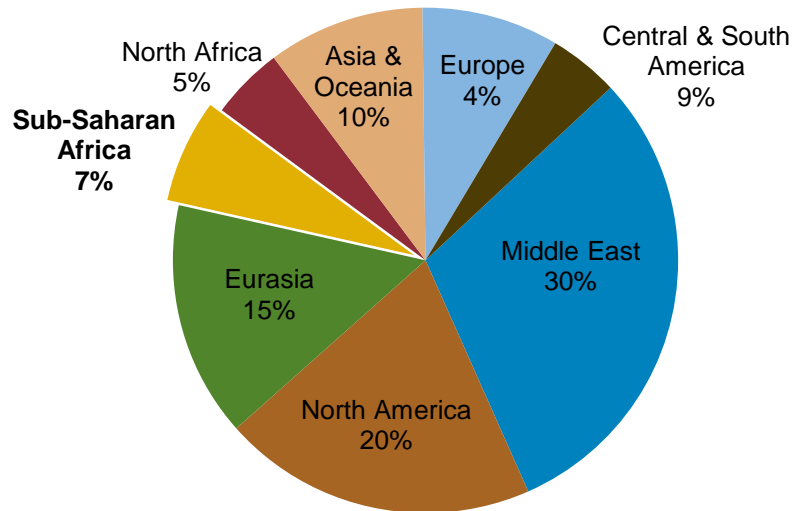
Sub-Saharan Africa contains **62.6 billion barrels** of proved crude oil reserves. The Middle East has 13 times that amount and Central and South America has 5 times that amount.

Regional Comparison of Proved Crude Oil Reserves



Source: Oil & Gas Journal, as of January 1, 2013; EIA, U.S. Crude Reserves,

Global Liquid Fuels Production, 2012

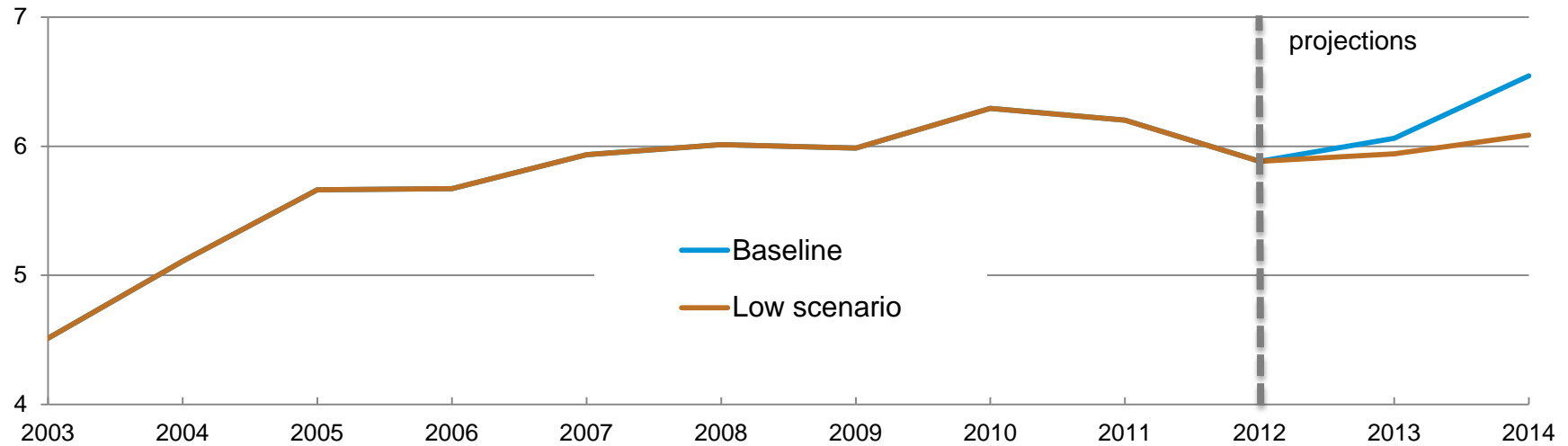


Source: EIA, International Energy Statistics

Sub-Saharan Africa (SSA) produced **nearly 6 million bbl/d** of liquid fuels in 2012, which was about 7% of total world oil production.

Liquid Fuels Production in Sub-Saharan Africa

million barrels per day



Source: EIA, Short-Term Energy Outlook

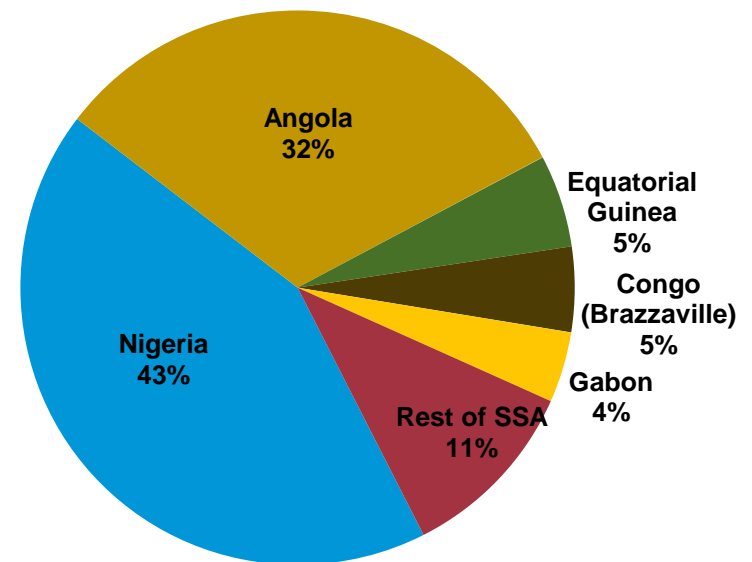
- Oil production in SSA grew by an annual average of 3% over the past 10 years. Production growth was led by Angola and a few smaller producers.
- Total liquid fuels production is forecast to grow by an annual average of 3% in 2013 and 8% in 2014, led by Angola, Ghana, and South Sudan in both years and Nigeria in 2014.
 - If South Sudan's production is shut in for the second half of 2013 and all of 2014 and unplanned disruptions persist at heightened levels in Nigeria, SSA liquid fuels production would grow by 1% in 2013 and 2% in 2014

Nigeria has been the top liquid fuels producer in the SSA region, followed by Angola. Together they made up 75% of total liquid fuels produced in Sub-Saharan Africa in 2012.

Top SSA Liquid Fuels Producers in 2012

Country	Production (million bbl/d)
Nigeria	2.52
Angola	1.87
Equatorial Guinea	0.32
Congo (Brazzaville)	0.29
Gabon	0.24
Other SSA	0.64
Total SSA	5.88

Source: EIA, International Energy Statistics

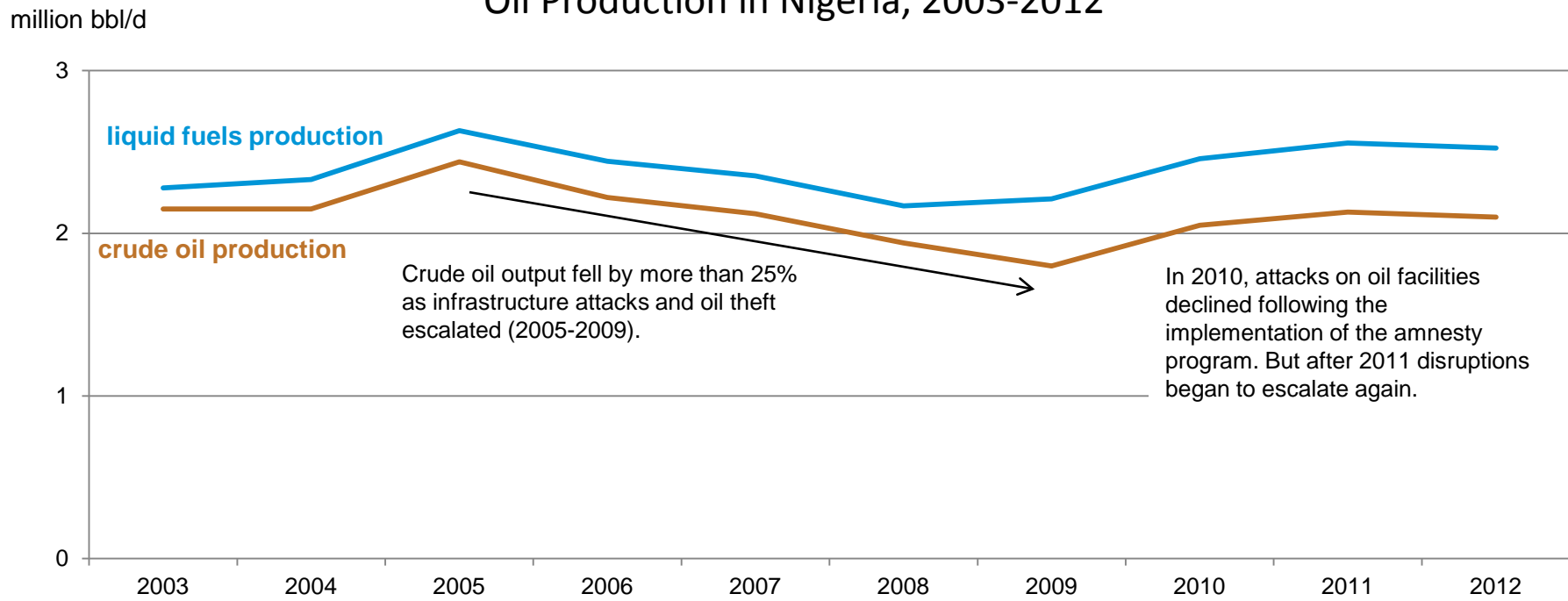


Source: EIA, International Energy Statistics

Sudan and South Sudan had been the third largest oil producer in the region before South Sudan shut in all of its oil production in January 2012.

Unplanned disruptions caused by oil theft and pipeline damage compromises a substantial portion of Nigeria's crude oil production. Crude oil production peaked at 2.44 million bbl/d in 2005. Despite new production coming online, crude oil output was only 2.10 million bbl/d in 2012.

Oil Production in Nigeria, 2003-2012



Source: EIA, International Energy Statistics and Short-Term Energy Outlook

Several deepwater oil projects are being developed in West Africa. New production from deepwater fields is expected to start in Nigeria, Angola, Congo (Brazzaville), and Ghana within the next five years.

Crude oil production in Uganda and heavy oil production in Madagascar is anticipated to start within the next five years.

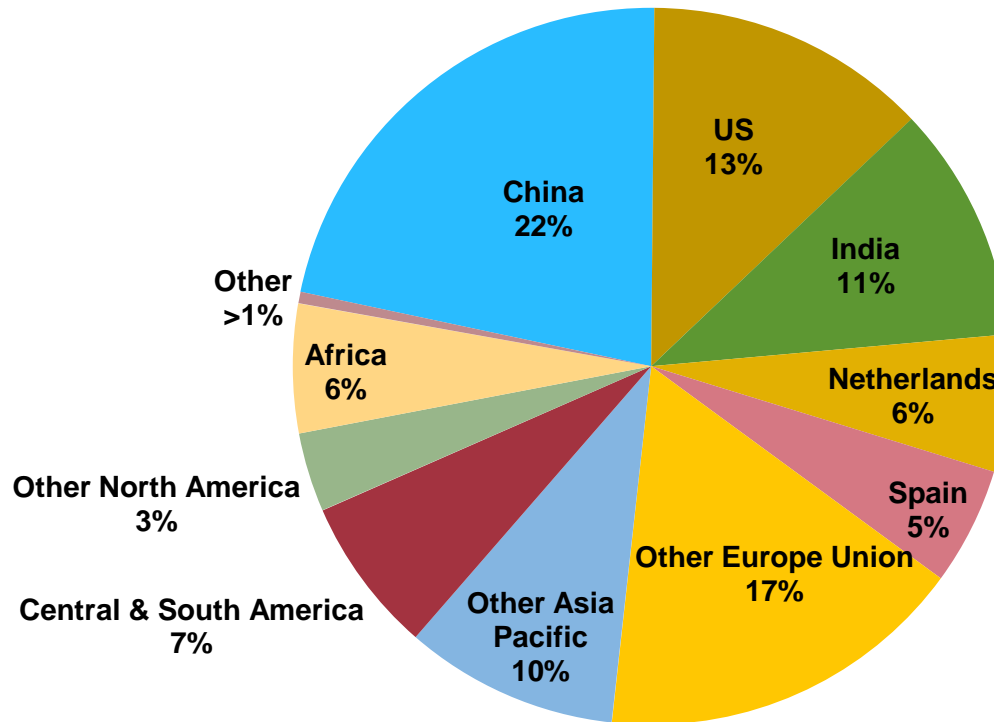
Short- to Medium-Term Country Characteristics

Mature Production	Production Management	Production Growth	New Producers
<p>Production is forecast to decrease because of natural decline in mature fields. New production may come onstream, but volumes are not large enough to offset declines.</p>	<p>Forecast production is flat or steadily increasing. New production coming onstream equals or exceeds the natural decline in mature fields.</p>	<p>Production is forecast to grow in countries that are relatively new producers as additional fields come onstream.</p>	<p>Oil production is expected to start sometime within the next five years.</p>
<p>Sudan and South Sudan Equatorial Guinea Gabon Cameroon Chad Congo (Kinshasa) Mauritania</p>	<p>Nigeria Angola Congo (Brazzaville) South Africa Ivory Coast</p>	<p>Ghana Niger</p>	<p>Uganda Madagascar</p>

Oil Exports

China was the largest crude oil importer from Sub-Saharan Africa in 2012, followed by the United States. Angola is the second leading exporter of crude to China and accounted for 15% of China's crude oil imports in 2012.

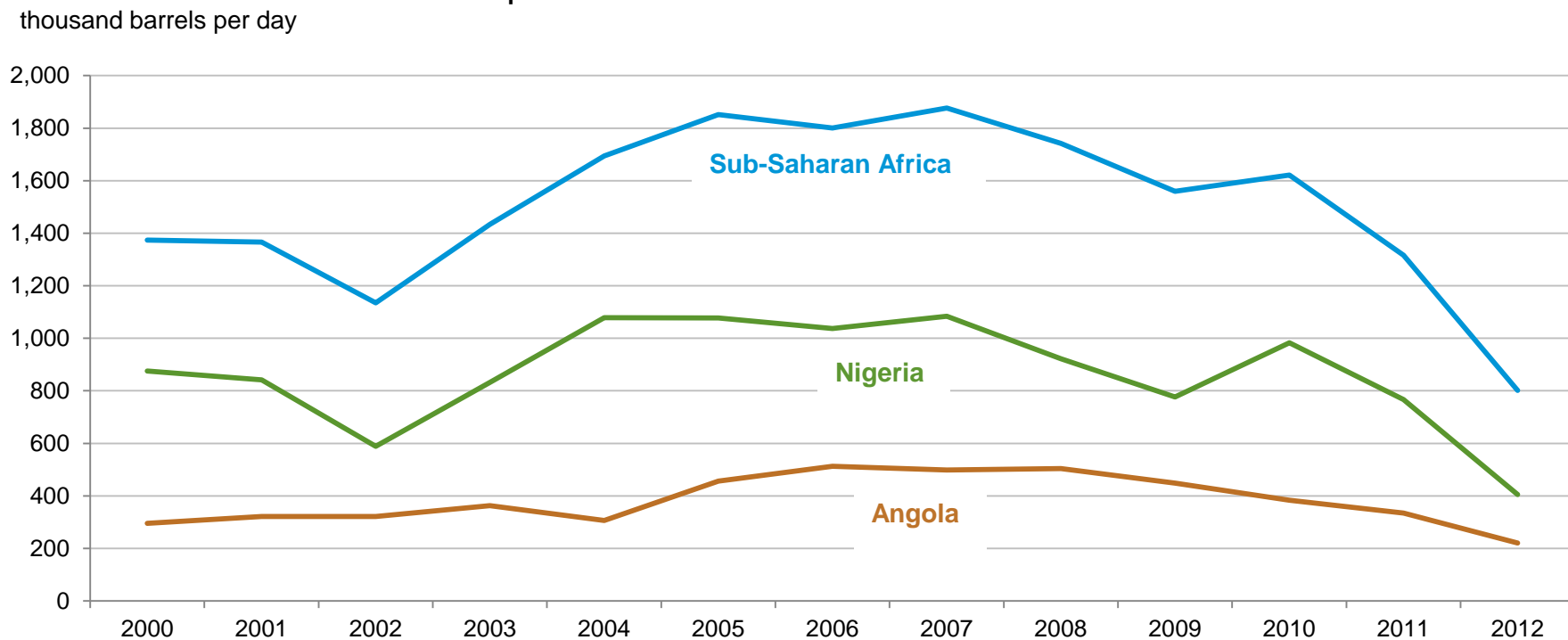
Sub-Saharan Africa's Exports of Crude Oil including Lease Condensate, by Destination, 2012



Note: Estimates include crude oil and lease condensate traded via tanker and does not include oil traded inland by truck.
Source: APEX Tanker Data

U.S. crude oil imports from Nigeria have declined sharply because of growing U.S. production of light sweet crude oil, of similar quality to Nigerian crude. Nigeria typically accounted for about 10% of the crude oil imported into the United States; in 2012, that share dropped to about 5%.

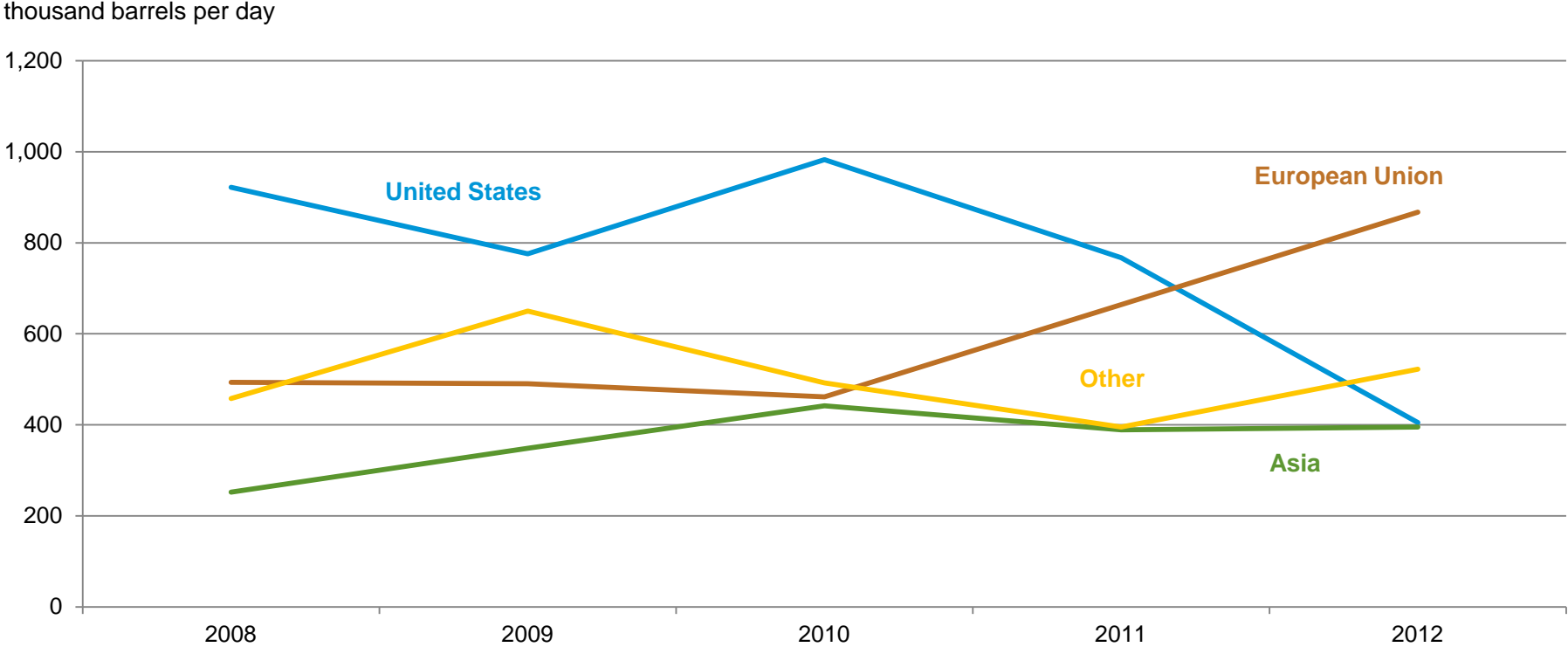
U.S. imports of crude oil from Sub-Saharan Africa



Source: EIA, Petroleum & Other Liquids

Nigeria exported around 2.2 million bb/d of liquid fuels in 2012. Exports diverted from the United States have been absorbed by the European Union, making the region the leading regional importer of Nigeria's oil.

Nigeria's liquid fuels exports, by region, 2012



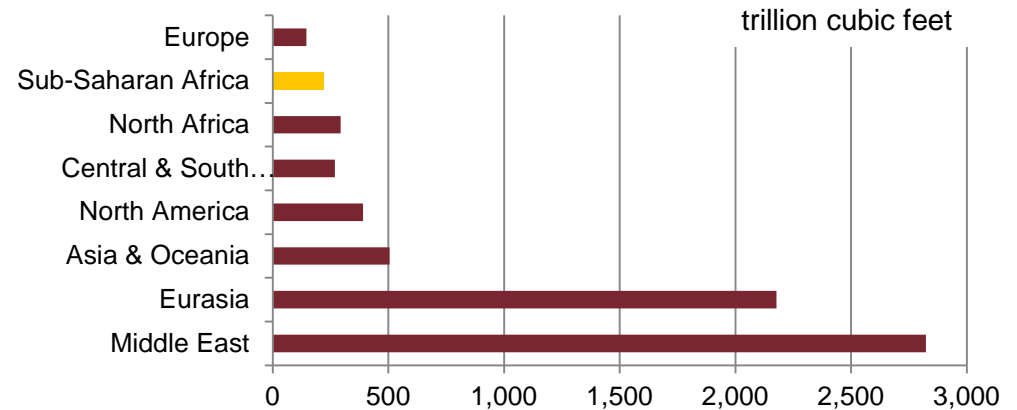
Note: Estimates include crude oil and lease condensate traded via tanker and does not include oil traded inland by truck.
Source: APEX Tanker Data

Natural Gas Production in Sub-Saharan Africa

Overview

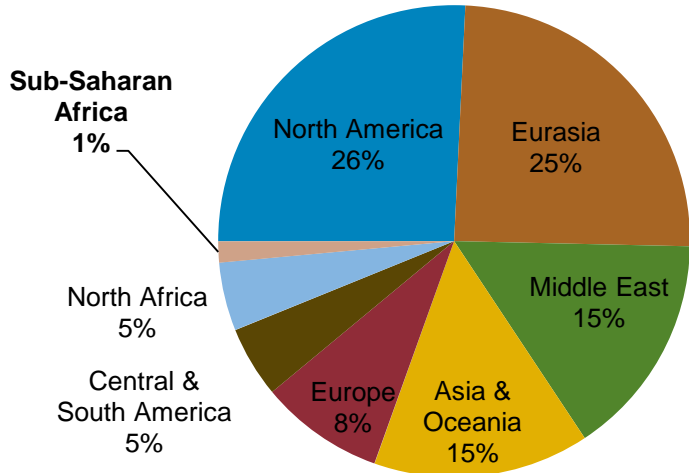
Sub-Saharan Africa has **221.6 trillion cubic feet** of proved natural gas reserves. The Middle East has almost 13 times that amount and Eurasia has almost 10 times that amount.

Regional Comparison of Proved Natural Gas Reserves



Source: Oil & Gas Journal, as of January 1, 2013; EIA, U.S. natural gas reserves, 2010

Global Dry Natural Gas Production in 2011

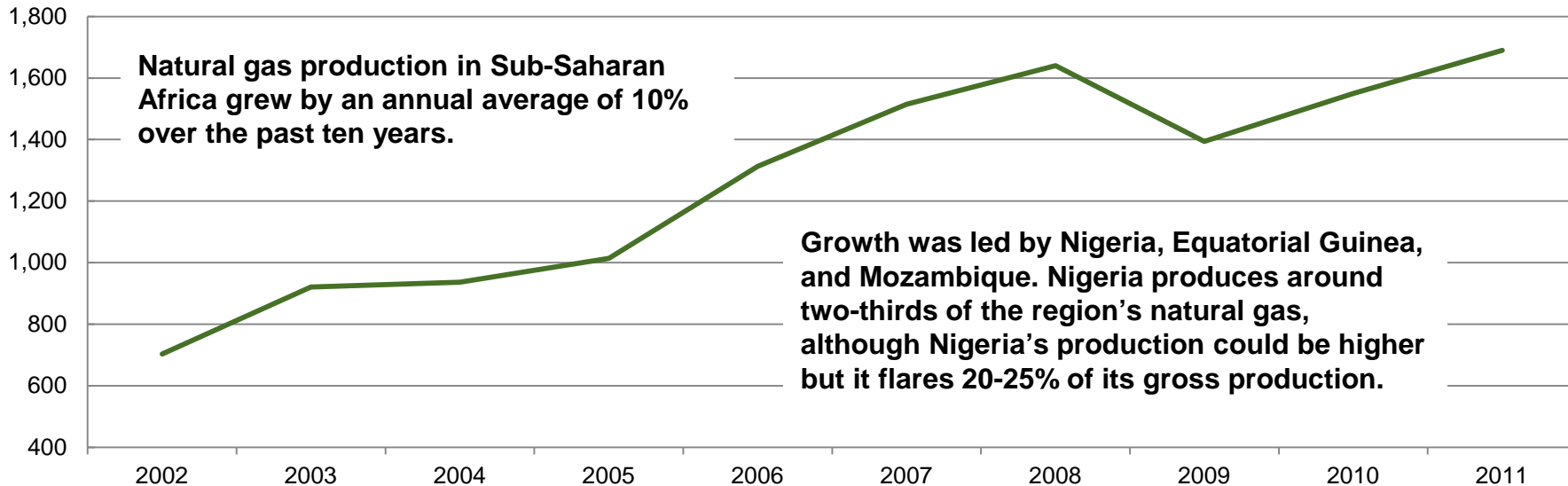


Sub-Saharan Africa produced **1.69 trillion cubic feet** of natural gas in 2011, accounting for 1% of total global natural gas production.

Source: EIA, International Energy Statistics

Natural Gas Production in Sub-Saharan Africa, 2002-2011

billion cubic feet

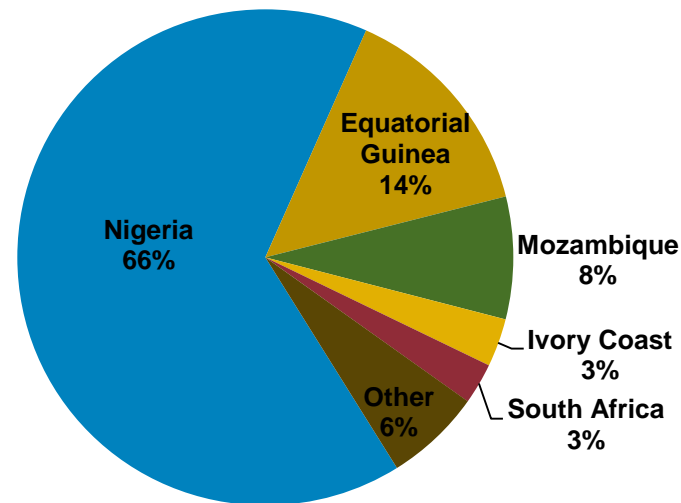


Source: EIA, International Energy Statistics

Top Natural Gas Producers in 2011

Country	Production (billion cubic feet)
Nigeria	1,107
Equatorial Guinea	243
Mozambique	135
Ivory Coast	53
South Africa	45
Other SSA	106
Total SSA	1,690

Source: EIA, International Energy Statistics

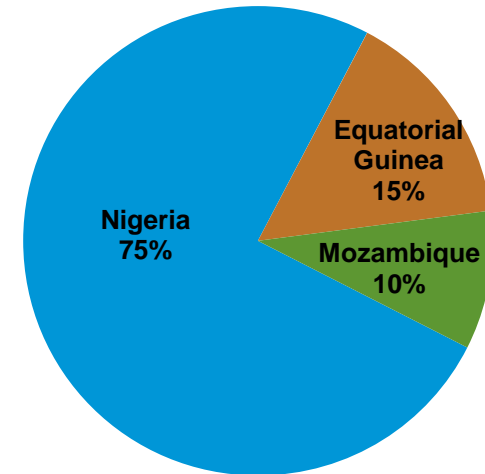


Source: EIA, International Energy Statistics

Natural Gas Exports

Sub-Saharan Africa exported **1.22 trillion cubic feet** of natural gas in 2011 via pipeline and liquefied natural gas (LNG). Nigeria, Equatorial Guinea, and Mozambique were the only natural gas exporters in the region. Angola joined the group in 2013 when it began exporting LNG.

Sub-Saharan Africa's Natural Gas Exports, 2011



Source: EIA, International Energy Statistics

Mozambique

- sends all exports to South Africa via pipeline

Equatorial Guinea

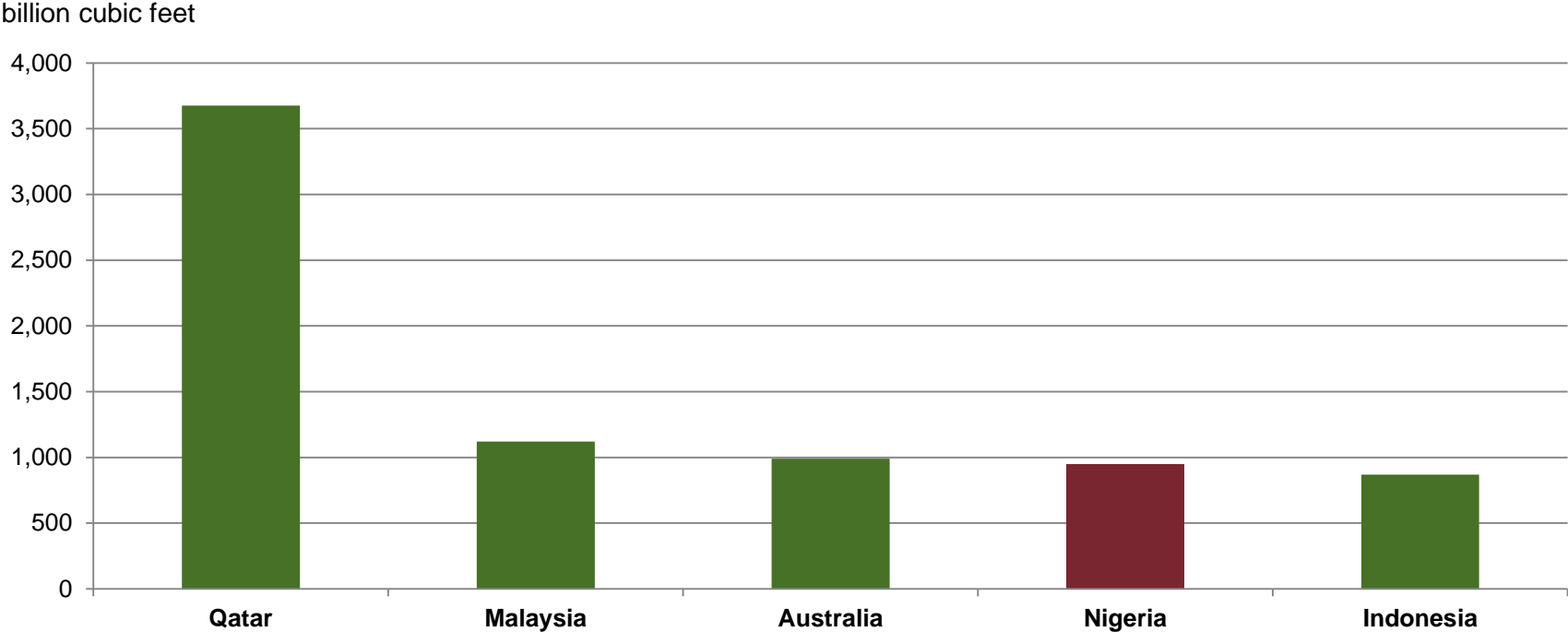
- exports LNG mainly to Asia, followed by Latin America and Europe

Nigeria

- the vast majority of natural gas exports are LNG, with small amounts exported via the West African Gas Pipeline

Nigeria was the 4th largest LNG exporter in the world in 2012, accounting for 8% of total LNG exports worldwide. Nigeria exported about 950 bcf of LNG in 2012.

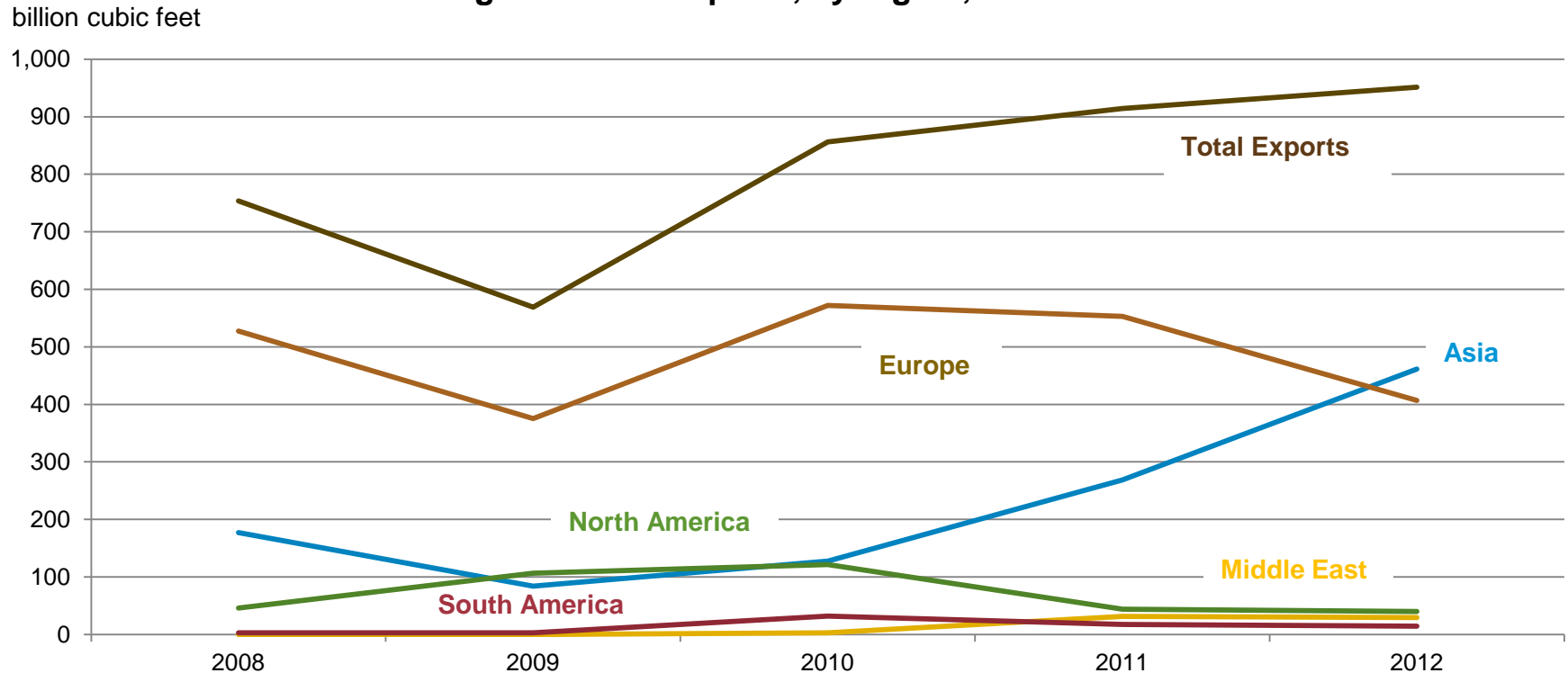
Top 5 LNG Exporters in the World, 2012



Source: FACTS Global Energy

In 2012, Asia overtook Europe as the largest regional importer of Nigeria's LNG. This is largely due to Japan, which more than doubled its LNG imports from Nigeria in 2012 compared with the previous year.

Nigeria's LNG exports, by region, 2008-2012



Note: Unplanned production disruptions curtailed LNG exports in 2009 when the Soku gas processing plant was intermittently closed due to pipeline damage caused by condensate theft.

Source: FACTS Global Energy and BP Statistical Review

For more information

U.S. Energy Information Administration home page | www.eia.gov

Country Analysis Briefs | <http://www.eia.gov/countries/>

Annual Energy Outlook | www.eia.gov/forecasts/aeo

Short-Term Energy Outlook | www.eia.gov/forecasts/steo

International Energy Outlook | www.eia.gov/forecasts/ieo

Today In Energy | www.eia.gov/todayinenergy

Monthly Energy Review | www.eia.gov/totalenergy/data/monthly

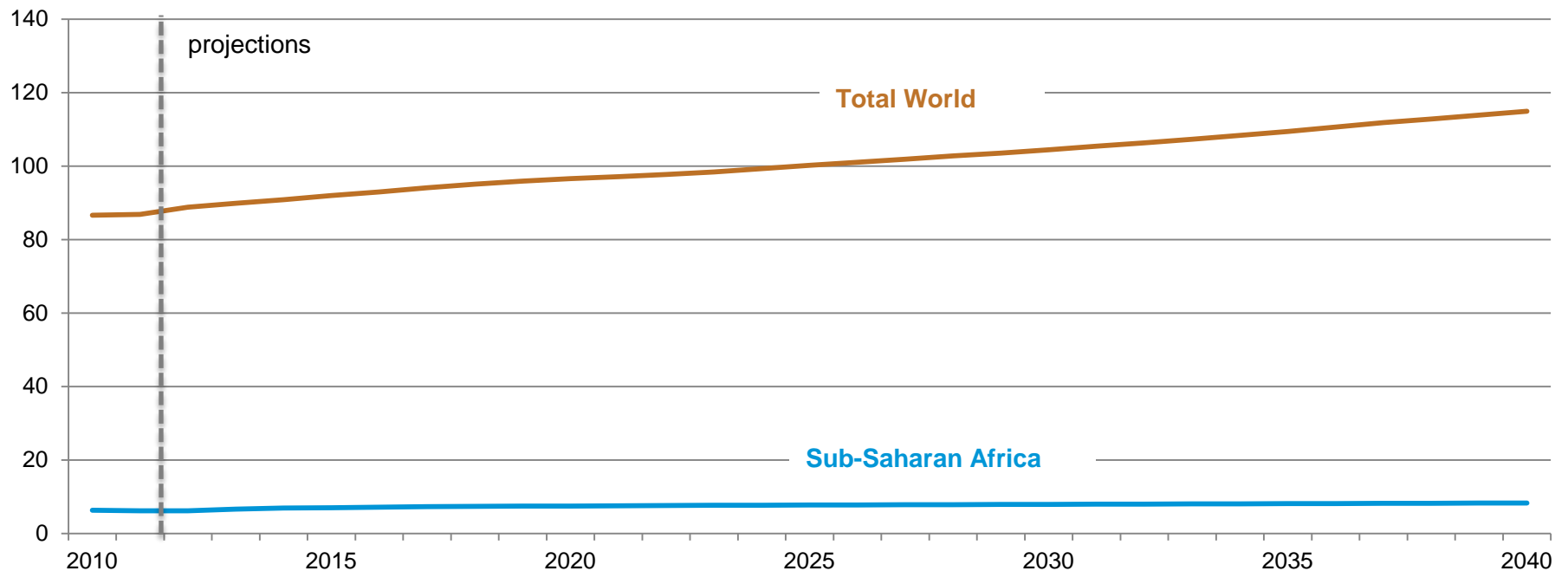
Annual Energy Review | www.eia.gov/totalenergy/data/annual

Supplemental Slides

Liquid fuels production in Sub-Saharan Africa is projected to grow by an annual average of 1% from 2010 to 2040. The region is expected to account for 7% of world supply growth during that period.

Liquid Fuels Production, 2010 - 2040

million barrels per day

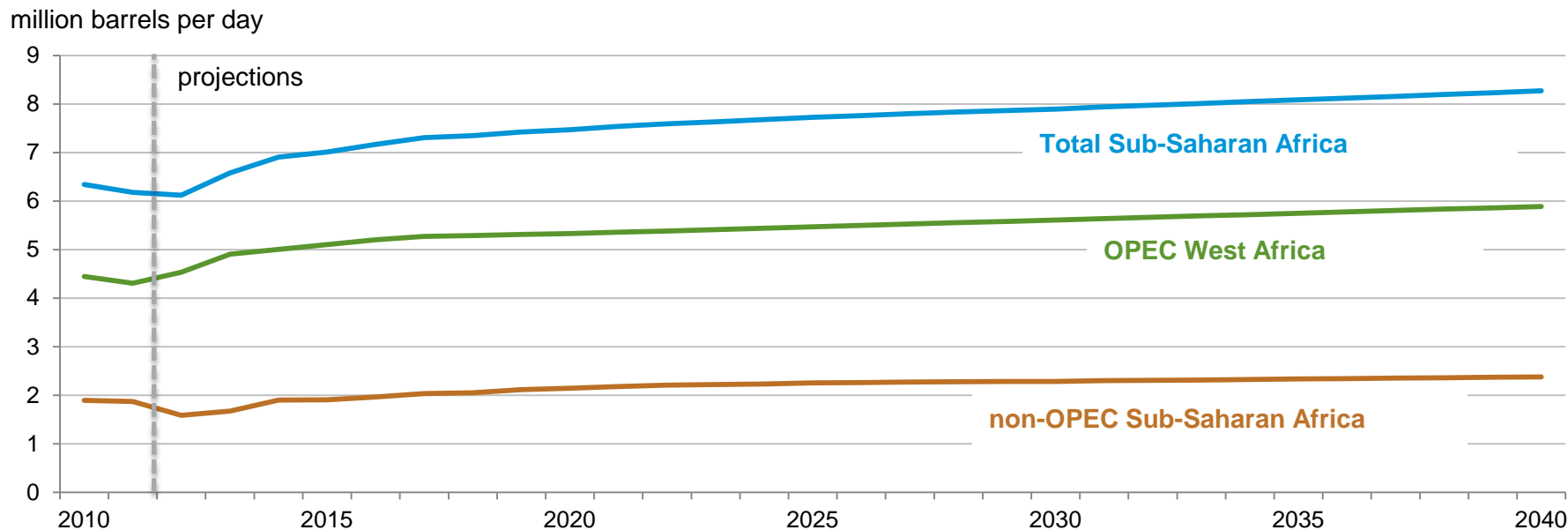


Source: EIA, International Energy Outlook, 2013

OPEC West Africa leads projected liquid fuels production in Sub-Saharan Africa, accounting for 75% of the region's total production growth from 2010 to 2040.

OPEC West Africa is expected to account for 10% of total OPEC growth from 2010 to 2040. Non-OPEC Sub-Saharan Africa is forecast to account for 3% of total non-OPEC growth during that period.

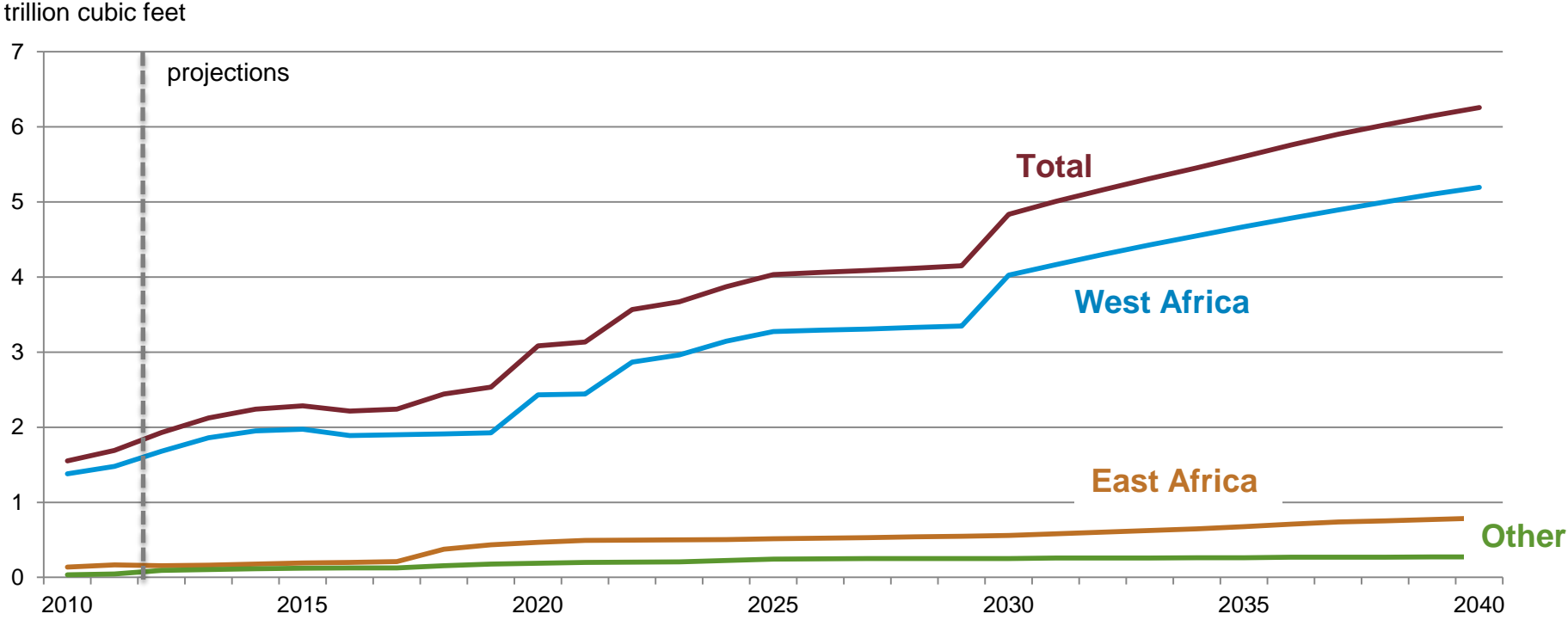
Liquid Fuels Production in OPEC and non-OPEC Sub-Saharan Africa



Source: EIA, International Energy Outlook, 2013

Natural gas production in Sub-Saharan Africa is projected to grow at an annual average rate of around 5% from 2010 to 2040.

Dry Natural Gas Production in Sub-Saharan Africa, 2010-2040

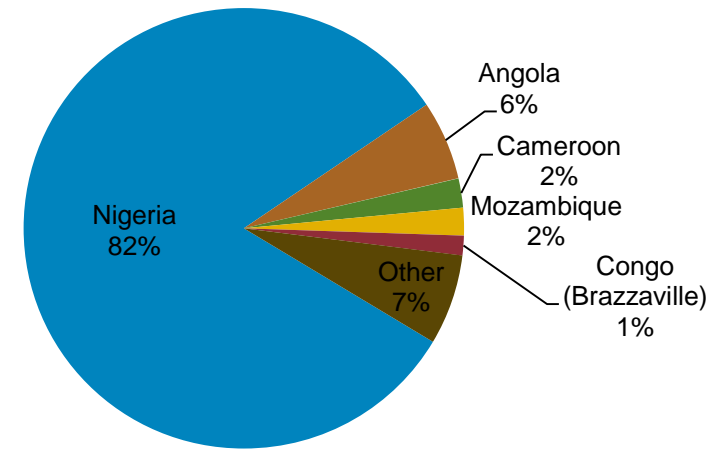


Source: EIA, International Energy Outlook, 2013

West Africa is projected to dominate natural gas production in Sub-Saharan Africa in the long term, accounting for 81% of the region's natural gas growth from 2010 to 2040.

Nigeria is the 9th largest holder of proved natural gas reserves in the world. The country currently holds 182 trillion cubic feet of proved natural gas reserves, accounting for 82% of the total in Sub-Saharan Africa.

Proved Reserves of Natural Gas, 2013



Source: Oil & Gas Journal, as of January 1, 2013

East Africa's dry natural gas production is expected to grow by an annual average of 6% from 2010 to 2040. Recent offshore discoveries in Mozambique and Tanzania are expected to boost production in the region.

Offshore natural gas resources in Namibia and coalbed methane exploration in South Africa, Zimbabwe, and Botswana could add to southern Africa's natural gas production.