

# Refining Industry in Sub-Saharan Africa: Recent Mutations & Future Outlook

Prepared for 1st African Oil and Gas Summit

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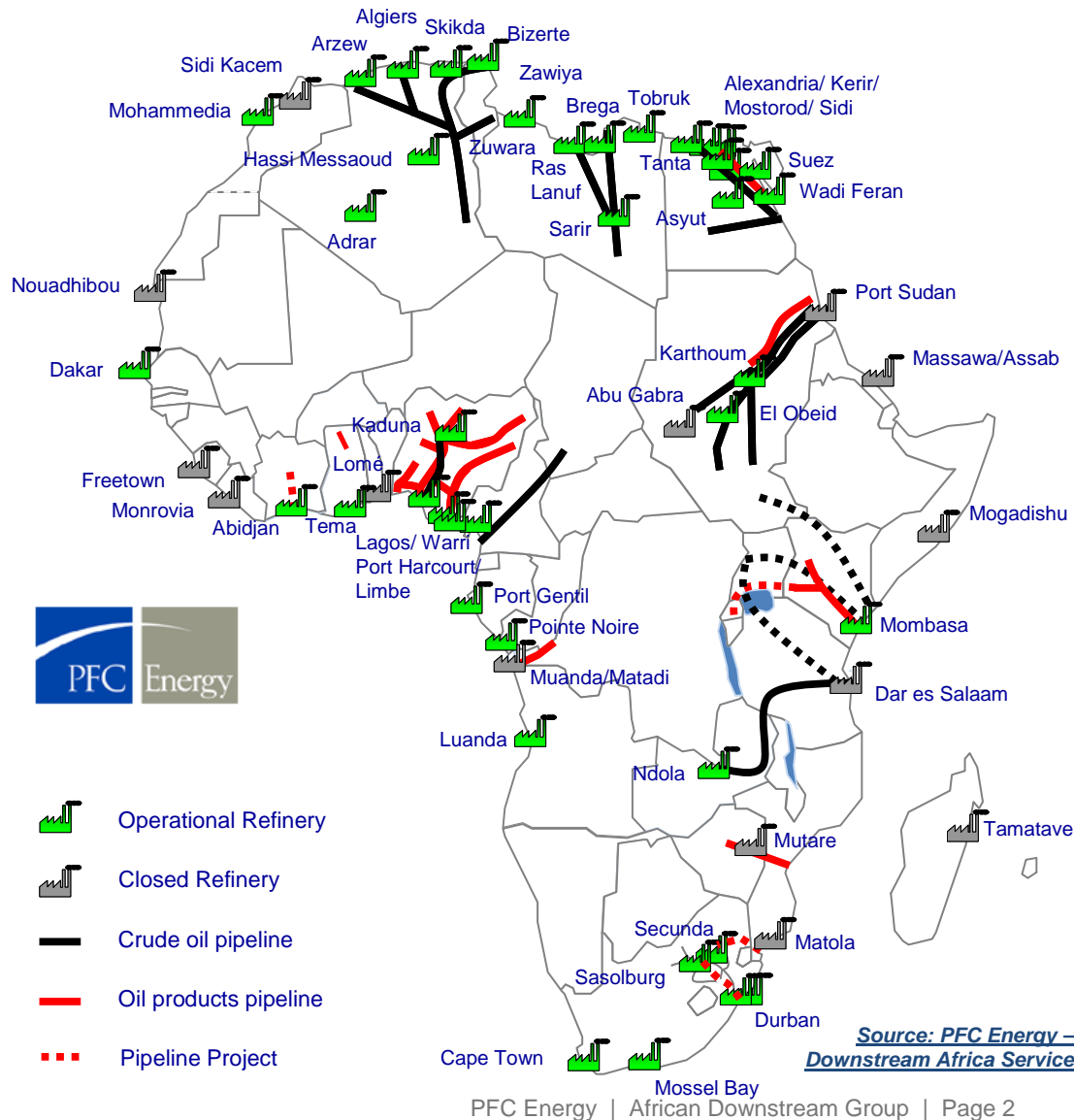


# Africa Lacks Infrastructure...

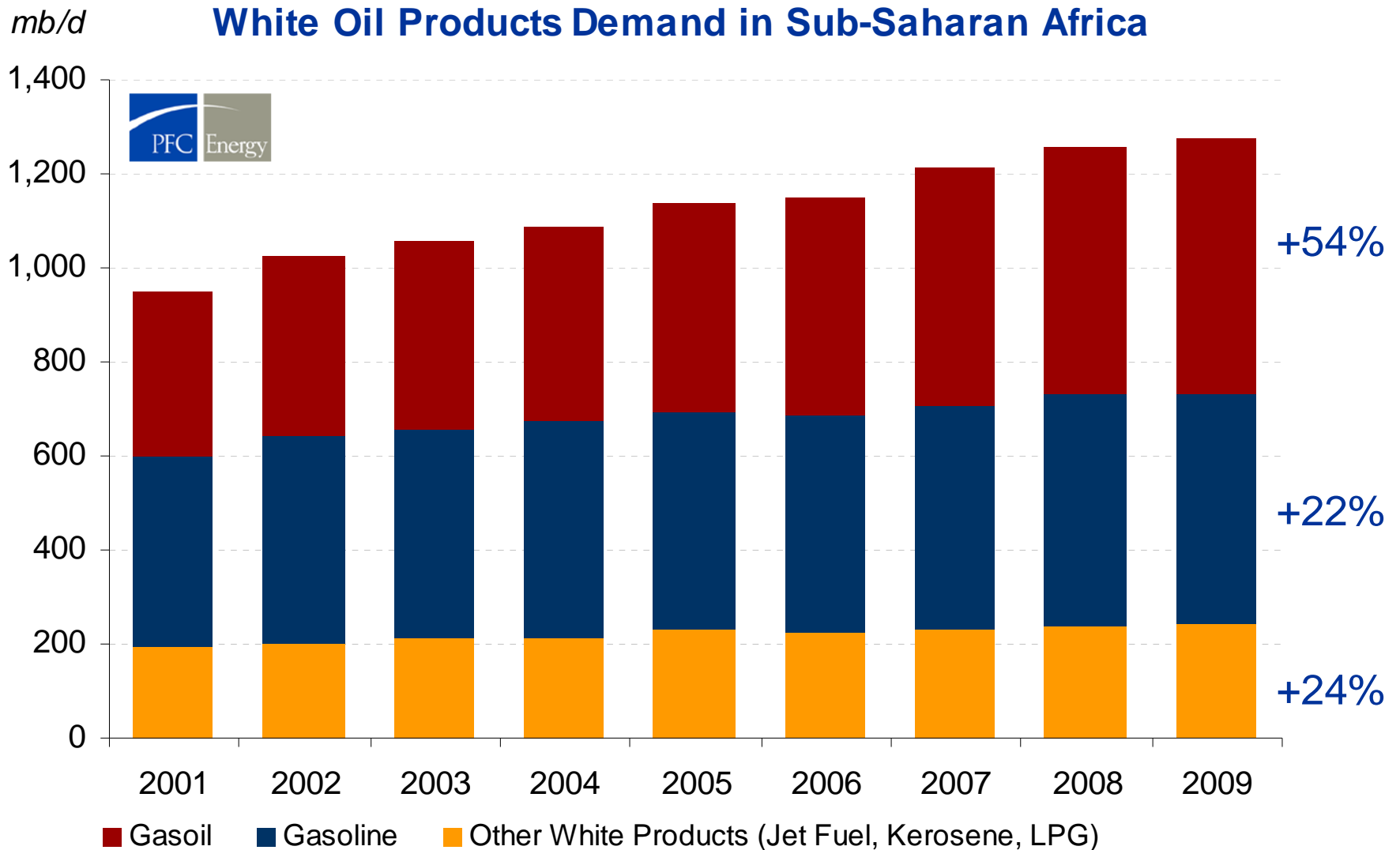
- Except Northern Africa, the continent lacks infrastructure
- Lack of pipeline networks
- Lack of refineries
- Need to upgrade import capacities
  
- This creates serious problems:
  - Shortages
  - Trucking is the most widely used mode of distribution ....
  - ... which is also more expensive
  - HSEQ
  
- Lack of infrastructure due to:
  - Lack of funding
  - Regulatory risk remains high
  - Lack of incentives to invest in storage
  - Lack of regional integration

**Security of supply is a key issue for basically all SSAfrican countries**

## Refineries and Pipelines in Africa

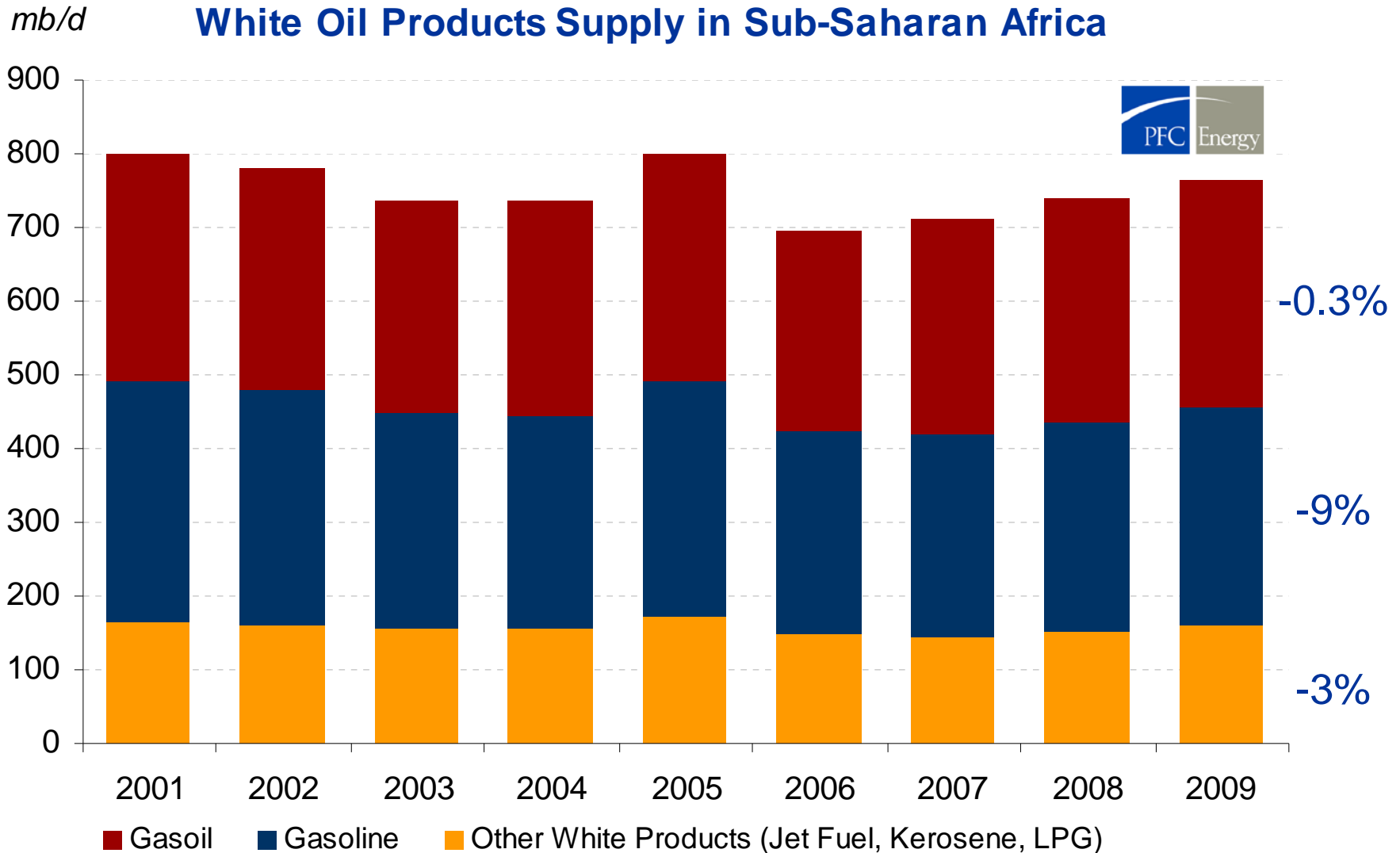


# ... in a Context Where Consumption Has Risen...



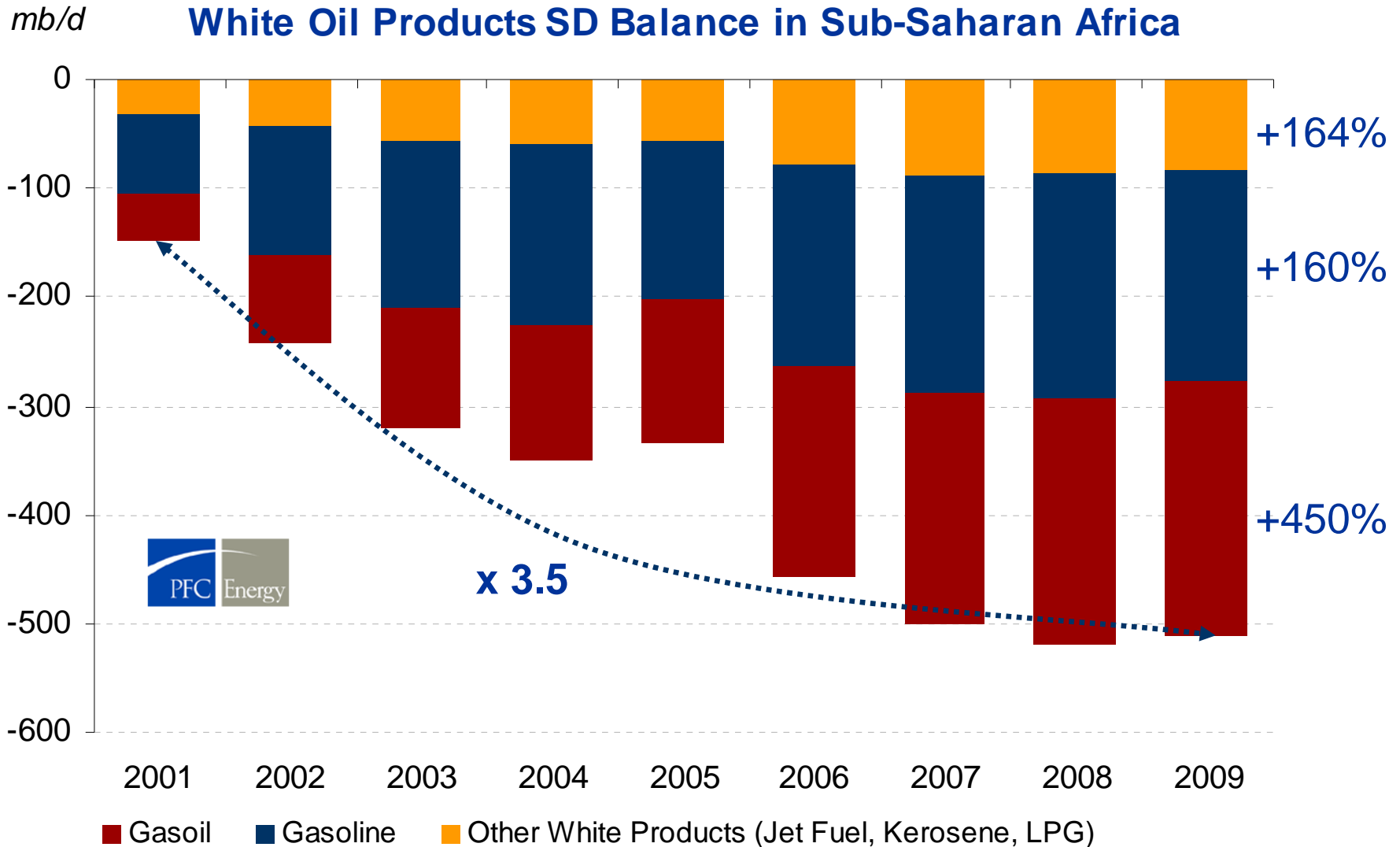
Source: PFC Energy – Downstream Africa Service

# ... and Oil Products Production Has Fallen...



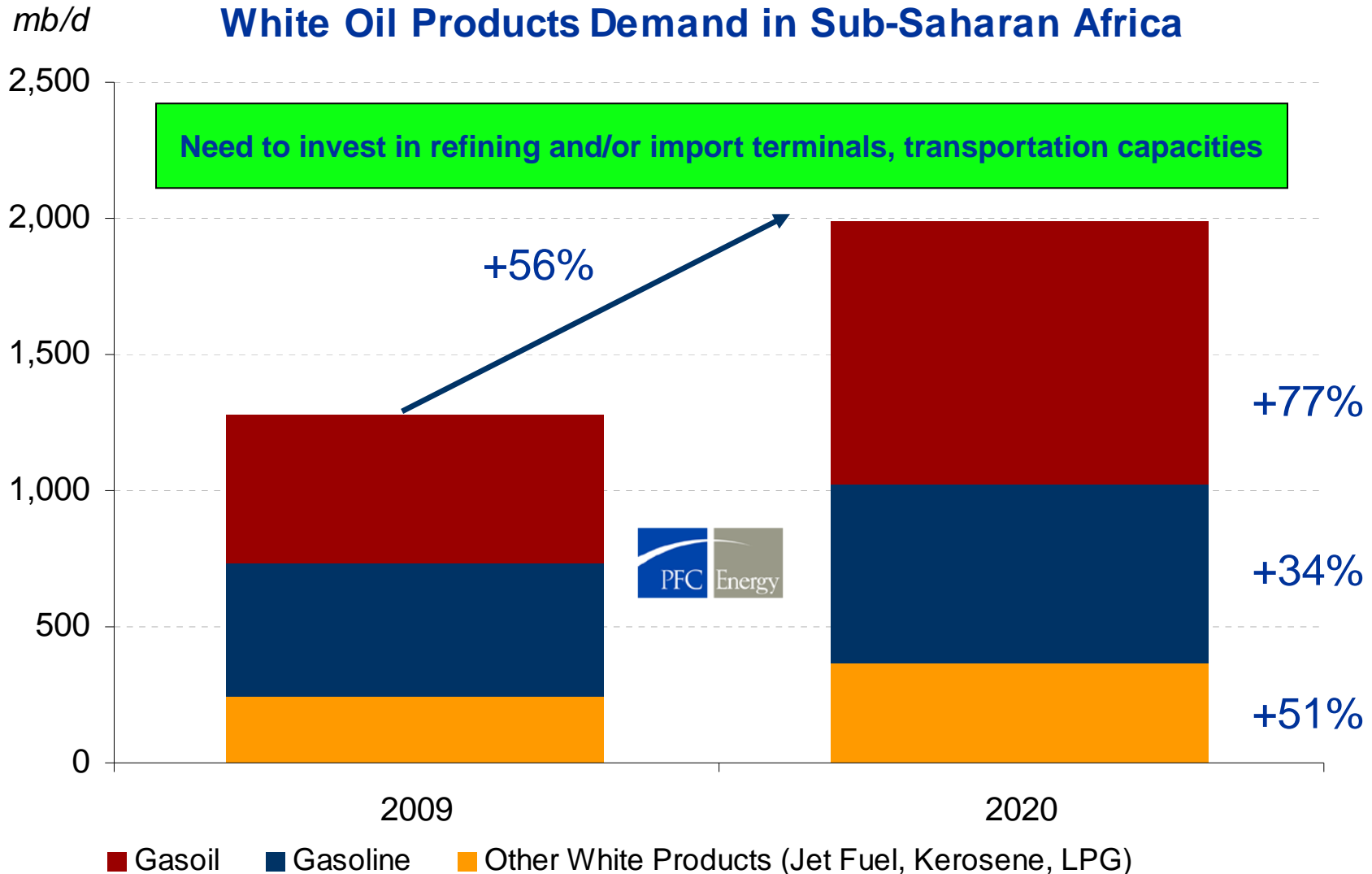
*Source: PFC Energy – Downstream Africa Service*

# ... Leading to a Widening Deficit of White Oil Products



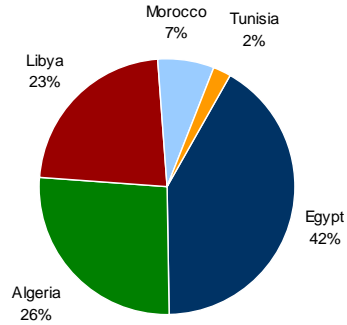
Source: PFC Energy – Downstream Africa Service

# Situation Will Worsen if Investments Are Not Made Now

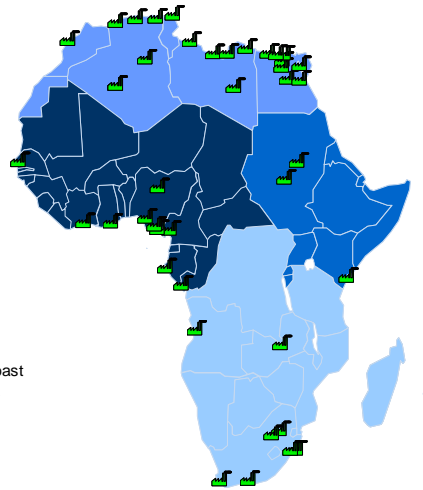


# Refining Production 2009

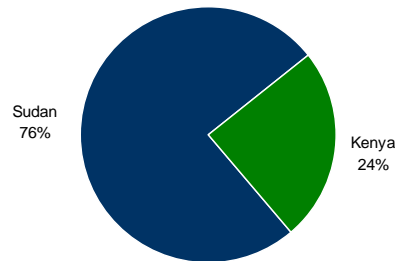
Northern Africa - Refining Production - 2009



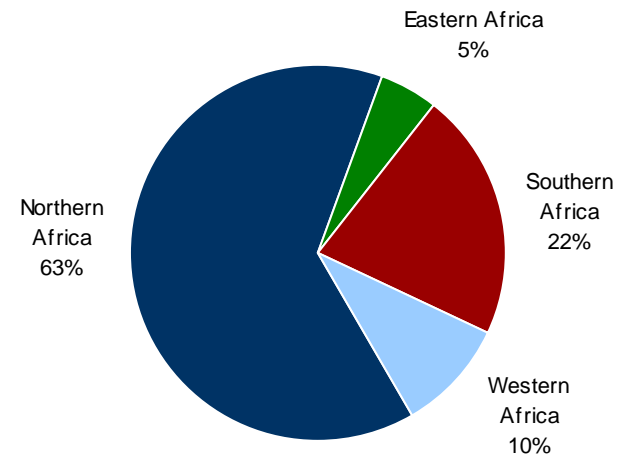
	Northern Africa	Eastern Africa	Western Africa	Southern Africa
<b>Operating Refineries</b>	21	3	9	8 <small>Incl. 1 GTL &amp; 1 CTL</small>
<b>Closed Refineries</b>	1	4	4	5
<b>Total refining capacity</b>	1,715 mb/d	212 mb/d	671 mb/d	756 mb/d
<b>Total Refinery Production</b>	1,524 mb/d	119 mb/d	231 mb/d	514 mb/d
<i>Of Which HFO</i>	21.4%	11.8%	20.8%	15%
<b>Average Utilization rate</b>	88.9%	56.2%	34.4%	68%



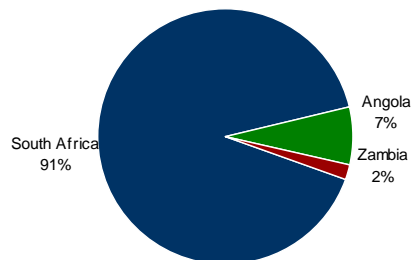
Eastern Africa - Refining Production - 2009



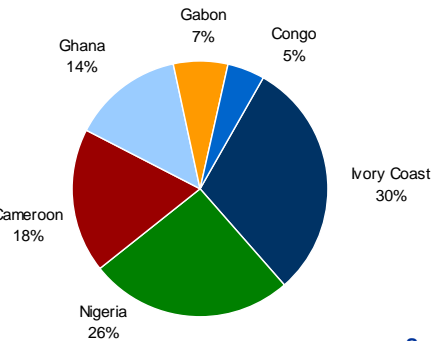
Africa - Refining Production - 2009



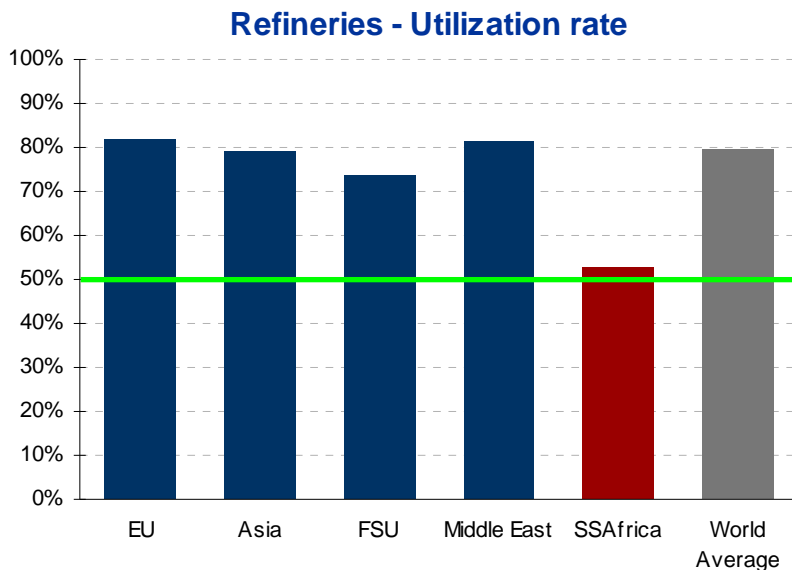
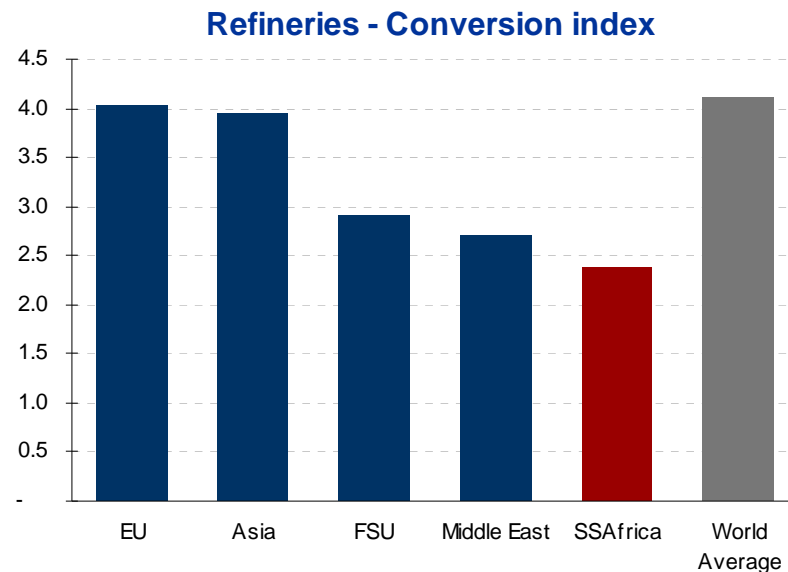
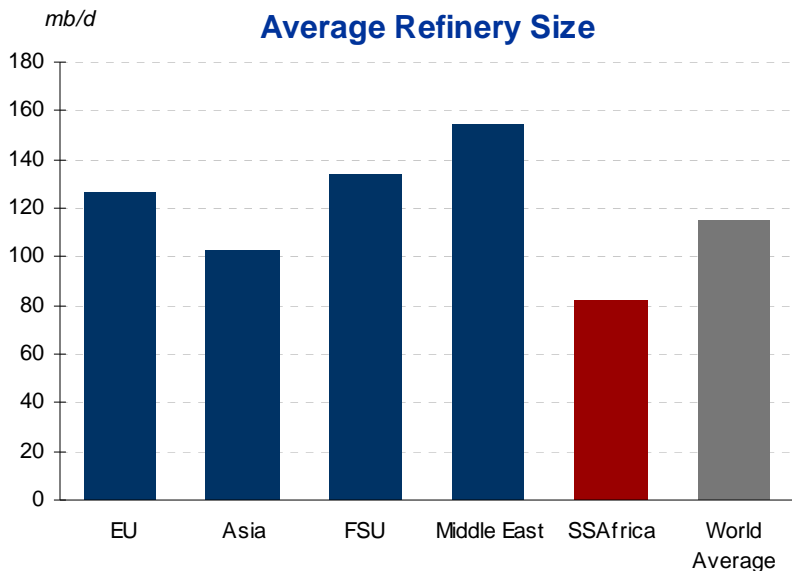
Southern Africa - Refining Production - 2009



Western Africa - Refining Production - 2009



# SSAfrican Refining Lacks Scale & Complexity



**Sub-Saharan African refining tool remain:**

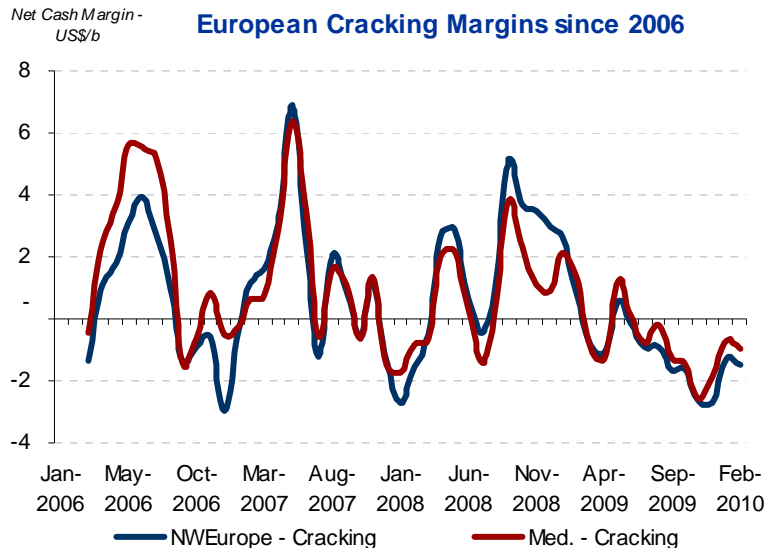
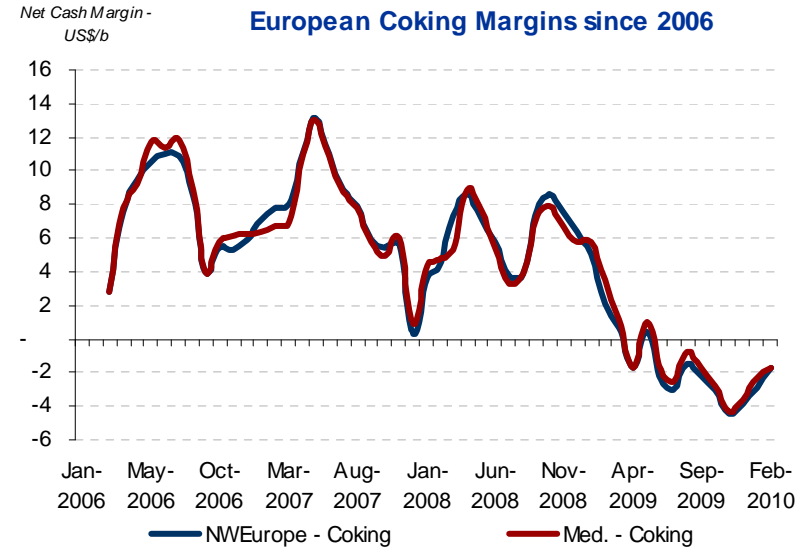
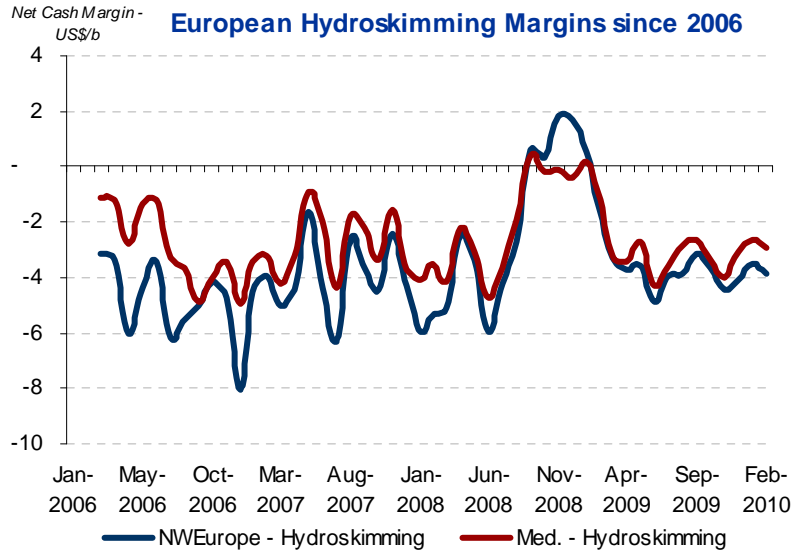
- Small scaled
- Inefficient
- Not complex

**It is not competitive...**

**Although it does not mean that all refineries are in this case...**

**... But it means that some further closures will have to happen**

# End of Refining Golden Age has badly Impacted the African Refineries



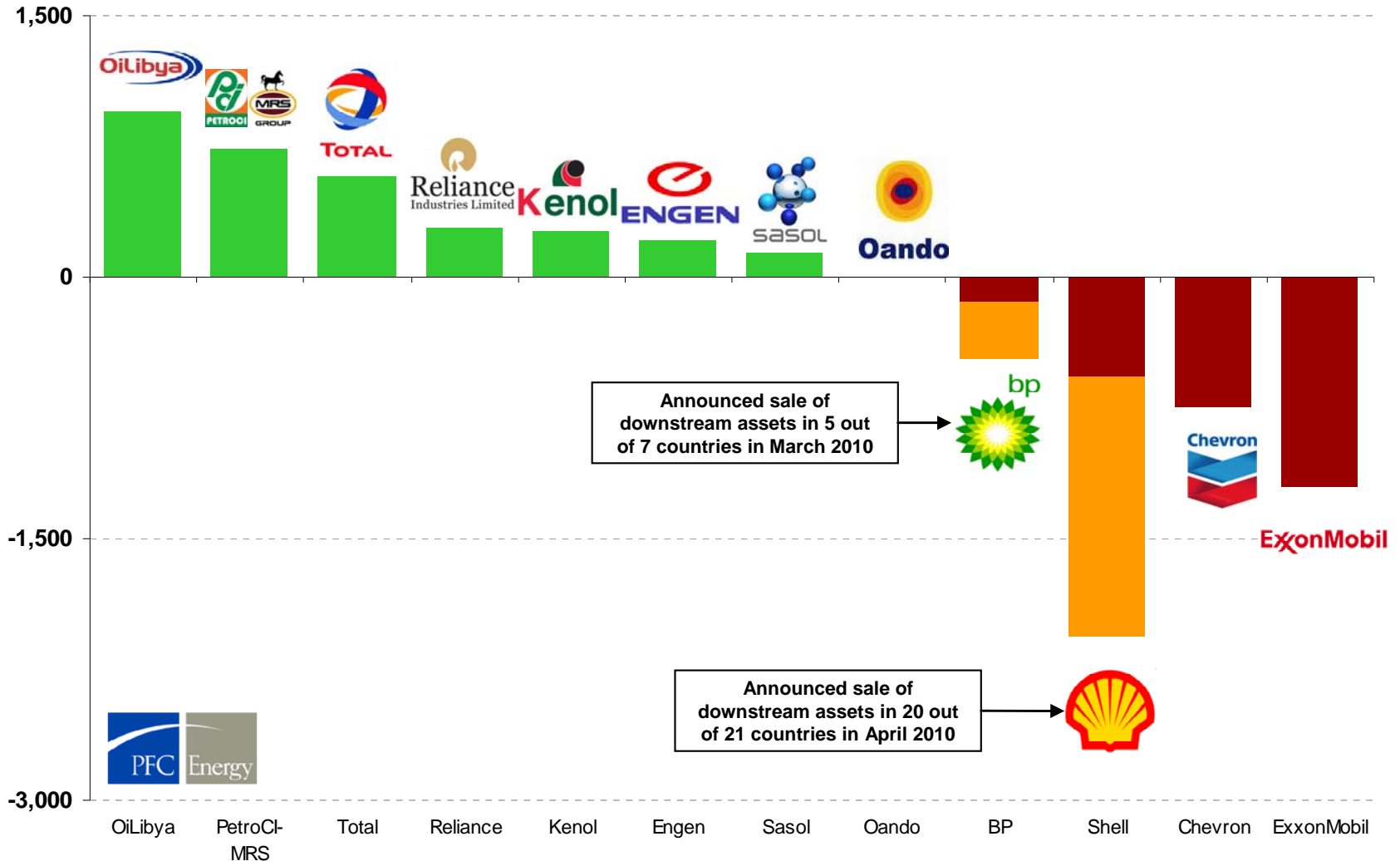
Since end 2008, European margins have been historically low, and have thus strongly impacted the African refineries... that were, for most of them, already not profitable

As a consequence and in addition to the large debt owed by the States (subsidies), many of them have been forced to temporarily shut down, due to heavy debt and financial problems, notably to pay feedstock : SAR, SIR, TOR, SONARA, Sogara etc.

# The Swap in Marketing Assets

Service Stations

## Africa: Changes in Service Station Networks Since 2004



Source: PFC Energy – Downstream Africa Service

# Changes Also Occurred in Refining

Old Paradigm

NOCs-  
States

Majors



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New Paradigm

NOCs-  
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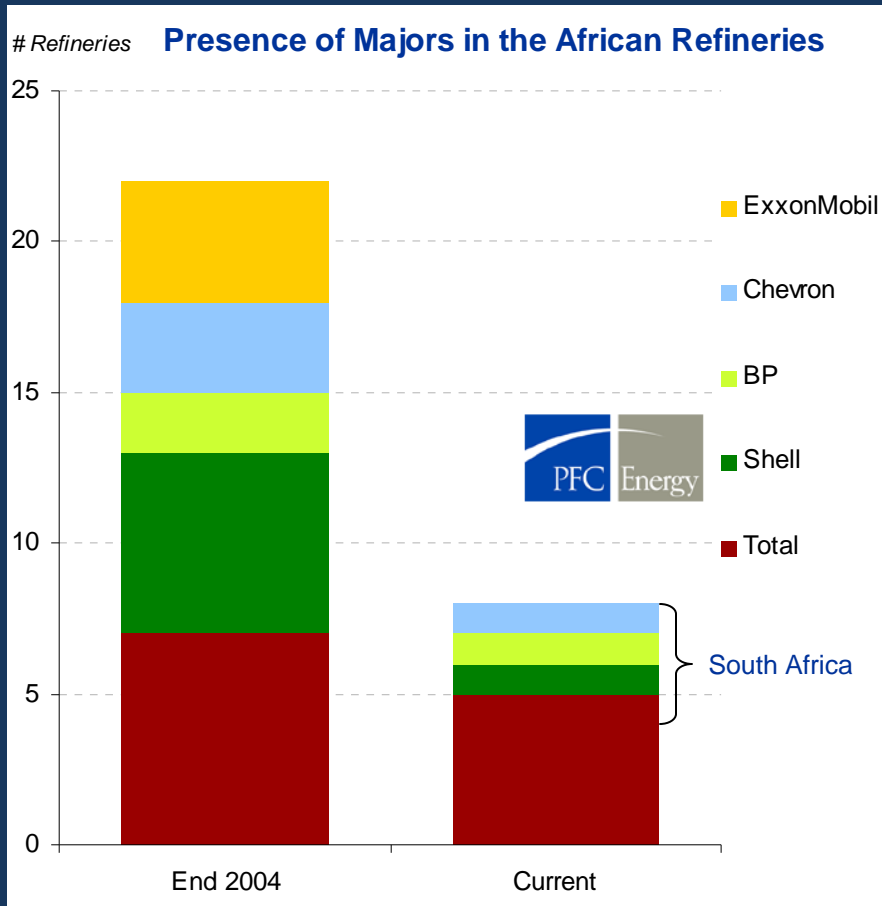
Total the only company with remaining stakes in refineries outside of South Africa (sold Indeni)

Majors

Asian-  
Gulf  
IOCs



# The Refining Game Will Have to Be Played Without the Majors



**These stakes in African refineries have all been purchased by State interests**

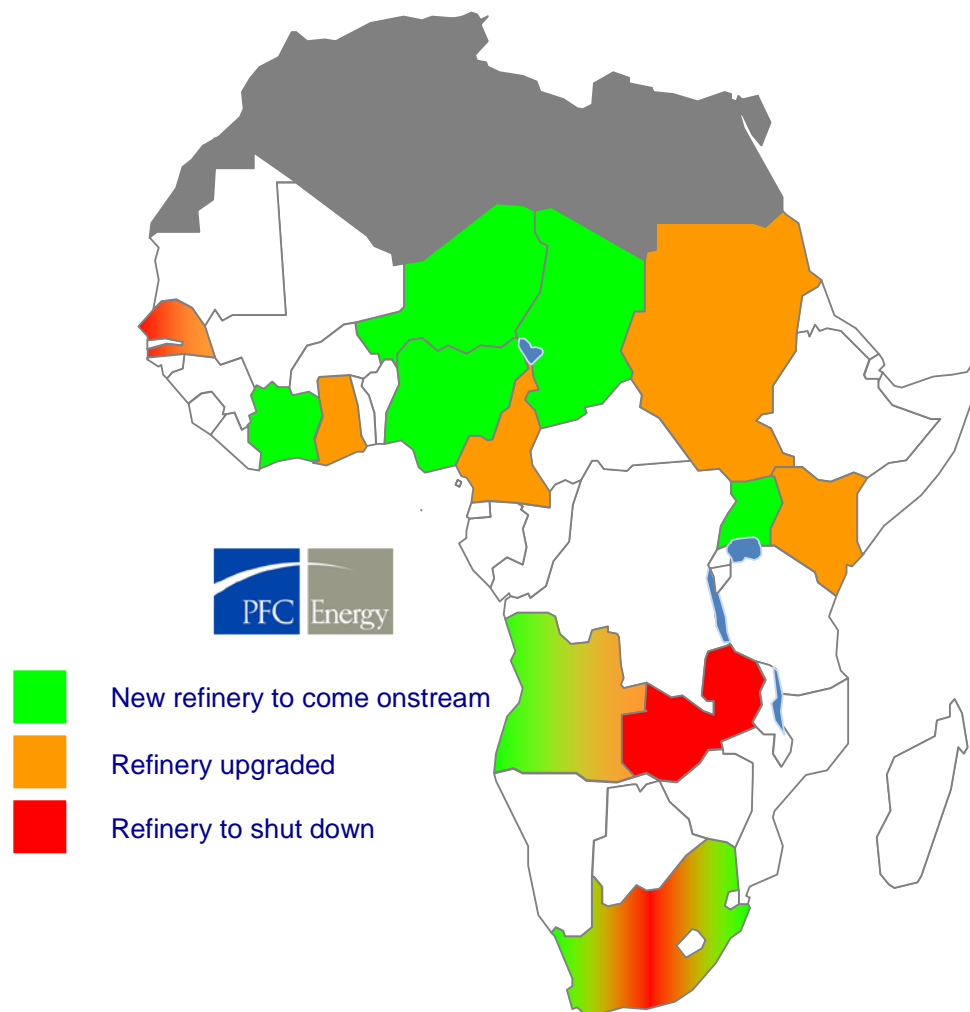
...

**Except for Kenya (Essar) and Ivory Coast (Sonangol)**

# Refining Projects Still to Materialize... But Might Have a Big Impact in SADC if Streamed

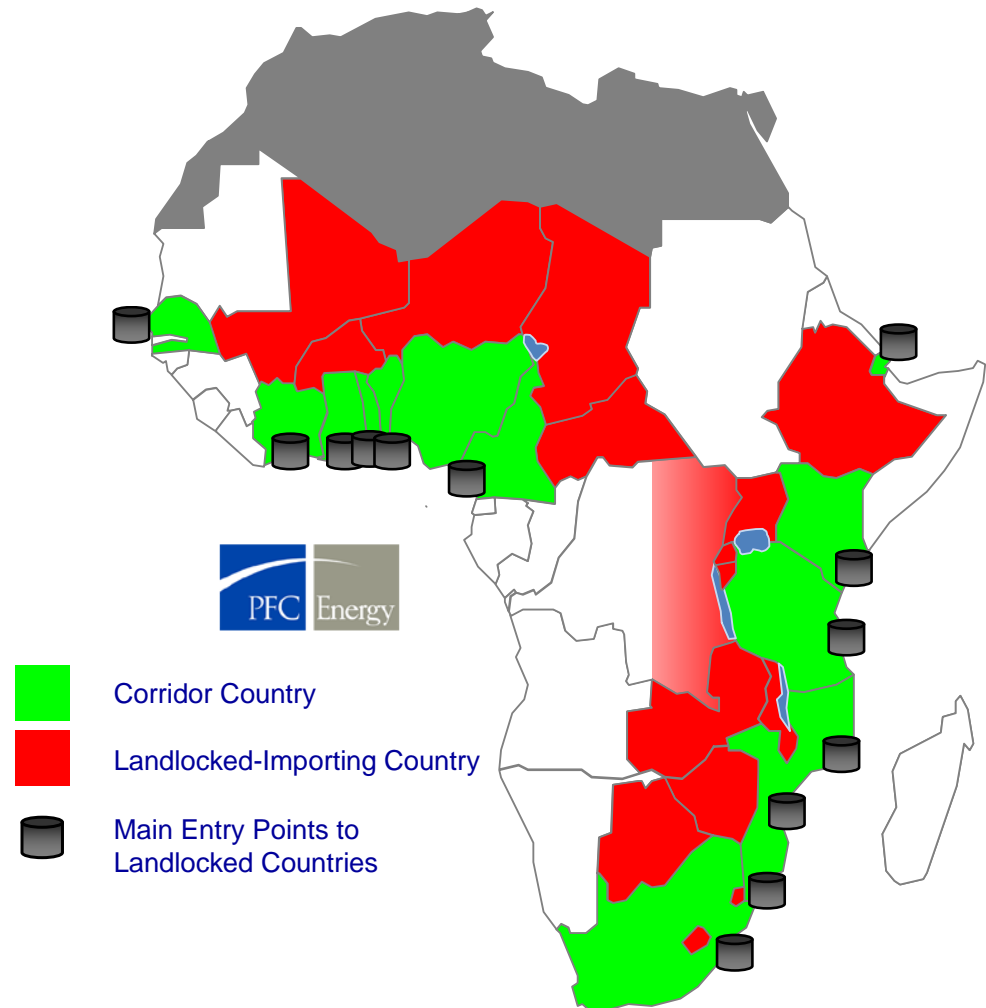
- **Coega versus Lobito competition still hot**
- **Would led to development/entry in the marketing sector of the region for PetroSA / Sonangol**
  - Integration of activities
  - Would increase competition
  - Would be made through acquisition
- **Impact of Coega on local refineries combined with clean fuel investments**
  - Would kill a number of refineries in South Africa
- **Future of Zambian refinery increasingly fragile**
- **Big changes expected in Eastern Africa**
- **Changes in Western Africa are also expected**
  - Greenfield projects
    - Notably upstream-downstream linkages
  - Upgrades
- **New investors required**
  - Indian, Gulf

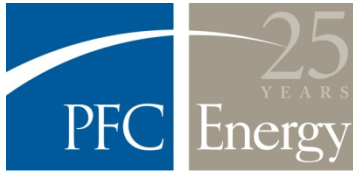
## Main Possible / Realistic Changes in Sub-Saharan Refining Landscape



- **Cooperation between NOCs**
  - Sonangol-PetroCI
  - Sonangol-PetroSA ?
  
- **Push regional integration**
  - Development of an integrated energy strategy
  - EAC, ECOWAS, SADC etc.
  
- **Bilateral cooperation**
  - Co-procurement to lower cost
    - Economies of scale
  - Improve solidarity, cut costs, invest together
  - Co-shareholding in refineries
    - Burkina Faso in SIR
  
- **Create real refining hubs**
  - Small refineries do not have a future
  - Key factors of success:
    - Refinery size
    - Complexity
    - Integration to crude source
    - Processing challenging feedstock
      - Landlocked fields, discounted crude
    - Integration with market
    - Political stability
  - Only few existing projects match these criteria
    - Uganda
    - Angola
    - South Africa
    - Ghana / Nigeria

## Potential Synergies Between Landlocked and Coastal Countries





## Strategic Advisors in Global Energy

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