



# African Energy Commission (AFREC)

JODI Energy Data Transparency Workshop

Role of Energy Data for the Sustainable Development in Africa

Cape Town, South Africa  
30<sup>th</sup> April – 3<sup>rd</sup> May 2019

# Content



## ❑ Introduction

## ❑ Pillars of AFREC new Strategy

- African Energy Information System (AEIS)
- Bioenergy Programme
- Oil and Gas Programme
- African Energy Efficiency Programme
- African Energy Sector Transition



# Introduction

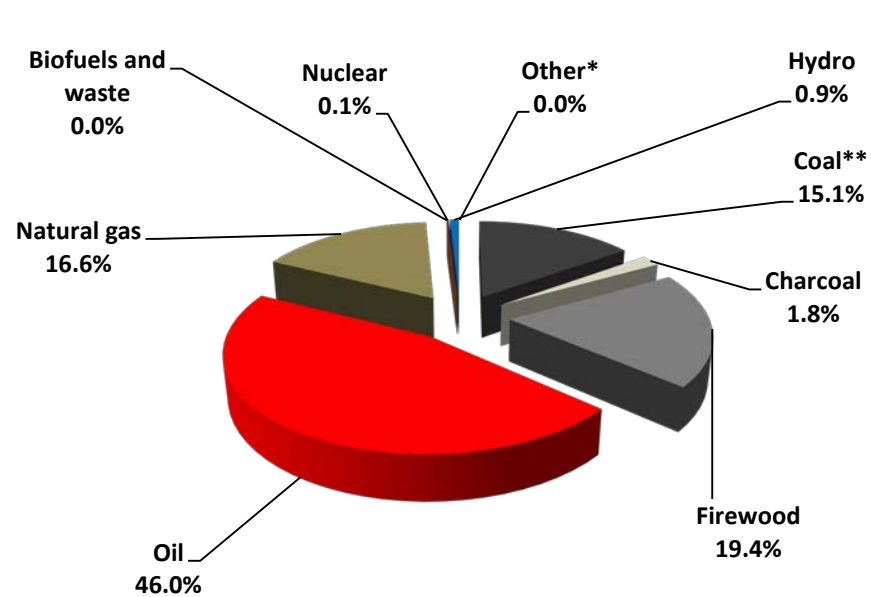


- ❑ AFREC was created by the OAU African Heads of States and Governments in 2001 by a Decision AHG/Dec.167 (XXXVII) of the 37th Summit and was launched by the African Ministers of Energy in the meeting held in February 2008 in Algiers, Algeria
- ❑ AFREC is AUC specialized with broad mandate as per the convention which include:
  - Develop policies, strategies, researches and plans based on Member states, sub-regional, regional and continental development priorities and recommend their implementation;
  - Design, create and update an energy continental data base and facilitate rapid dissemination of information and exchange of information among Member States, sub-regional, regional and continental institution;
  - Provide technical support, mobilize financial support and capacity building to the Member States, sub-regional, regional and continental institution for the energy sector;

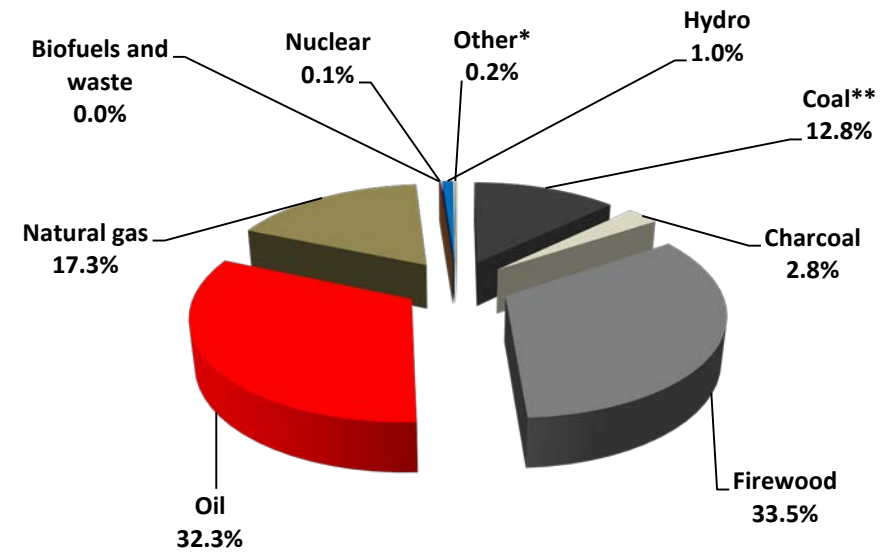
# Africa Total Primary Energy Supply from 2 000 to 2 016 by fuel (ktoe)



2000 - (353 734 ktoe)



2016 - (342 097 ktoe)



# Pillars of new AFREC Strategy



## □ Pillars of AFREC new Strategy”

- African Energy Information System (AEIS)
- Bioenergy Programme
- Oil and Gas Programme
- African Energy Efficiency Programme
- African Energy Sector Transition



## African Energy Information System (AEIS)

### Current Activities



- ❑ African Energy Statistics in 2019 will expand the coverage to include the following:
  - The Carbone dioxide (CO<sub>2</sub>) emission.
  - Energy Prices and Taxes data. Indeed.
- ❑ Started creation of the African Energy Efficiency Indicators Database for Residential Sector in 2017 and the first version of this publication published and disseminated in March 2019.
- ❑ AFREC has started in 2019 creating the energy efficiency database for industry. Other sectors like transport, Service public & commerce, Agriculture, etc will follow in the coming years.



# Data Collection, Process and Dissemination



Year

Year + 1

Year + 2

DATA

COLLECTION

PROCESS DATA

DISSEMINATION



Oil



Natural Gas



Coal



Electricity



Firewood

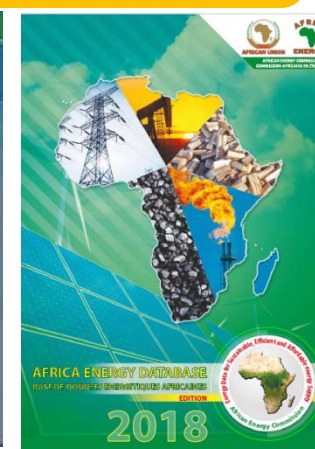


Charcoal

Etc.

COUNTRY

AFREC



## African Energy Information System (AEIS)

### Objectives of the Improvement



- AEIS to be more inclusive and comprehensive by including all the necessary energy data and indicators;
- Energy data collection to be more efficient, sustainable with required quality;
- Energy data validation and processing to be more robust with high level of standard;
- Develop online energy data collection system;
- Create an effective way of Dissemination of energy data to the wide range of stakeholders in Africa and beyond;
- AFREC to support Member states to build national energy information system;



## Some Improvement underway



- Revamp the AFREC webpage
- Develop the online data collection system;
- Capacity Building Programme to African Expert (Train of the trainers Programme )





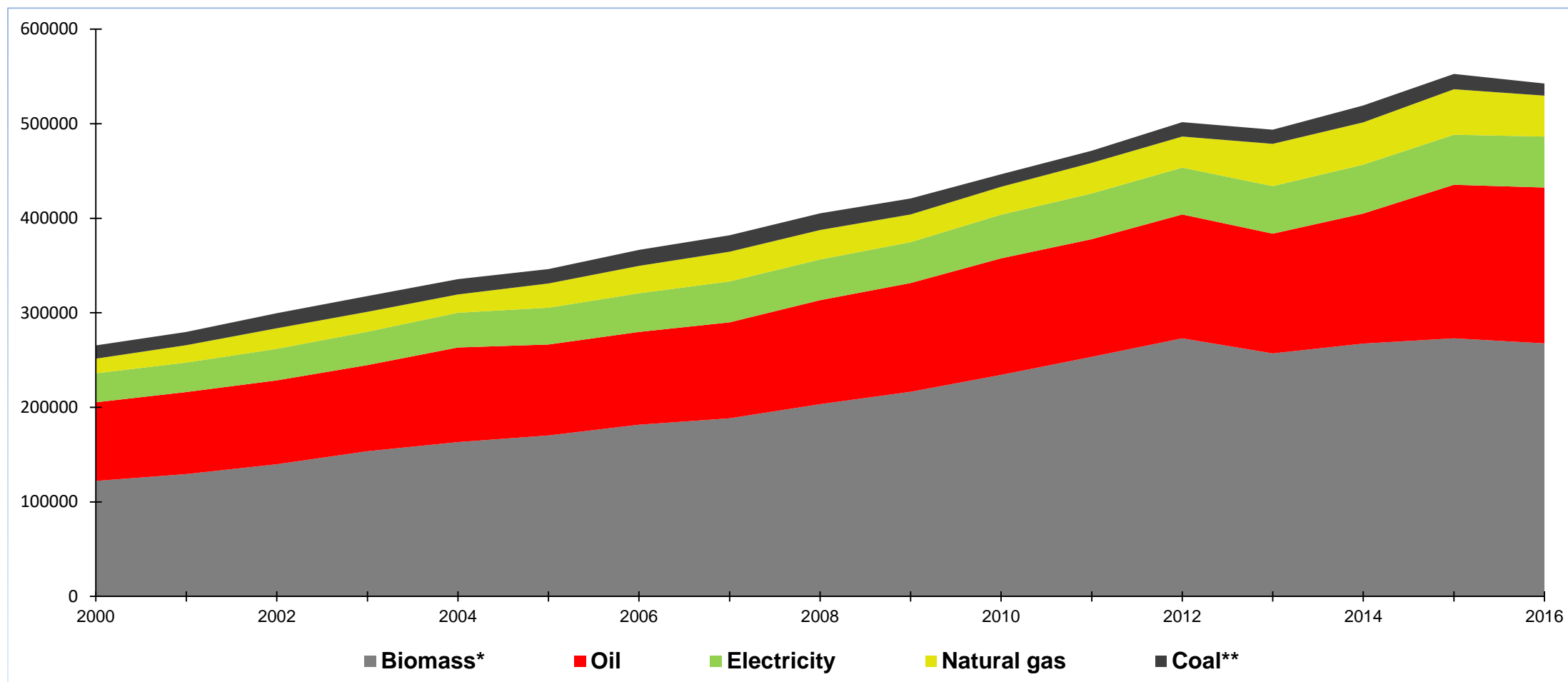
## Bioenergy Programme

Building Capacity for enhancing bioenergy Reporting, monitoring and sustainability in African Countries



Food and Agriculture  
Organization of the  
United Nations

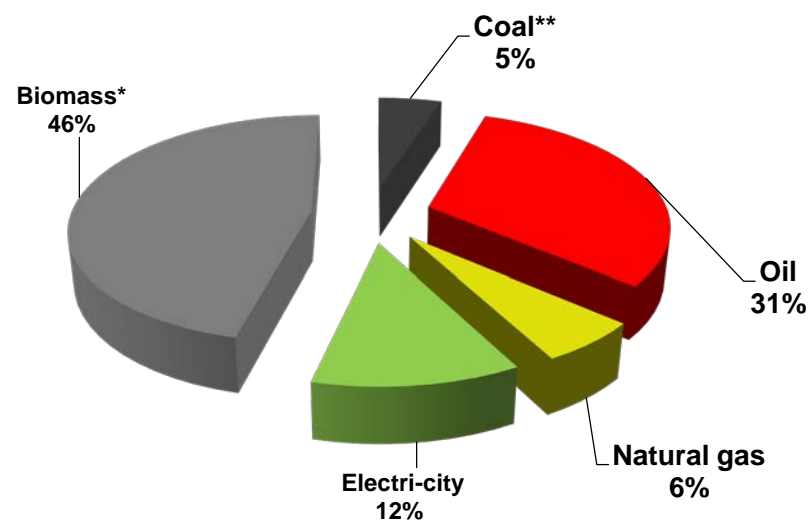
## Total final consumption from 2 000 to 2 016 by fuel (ktoe)



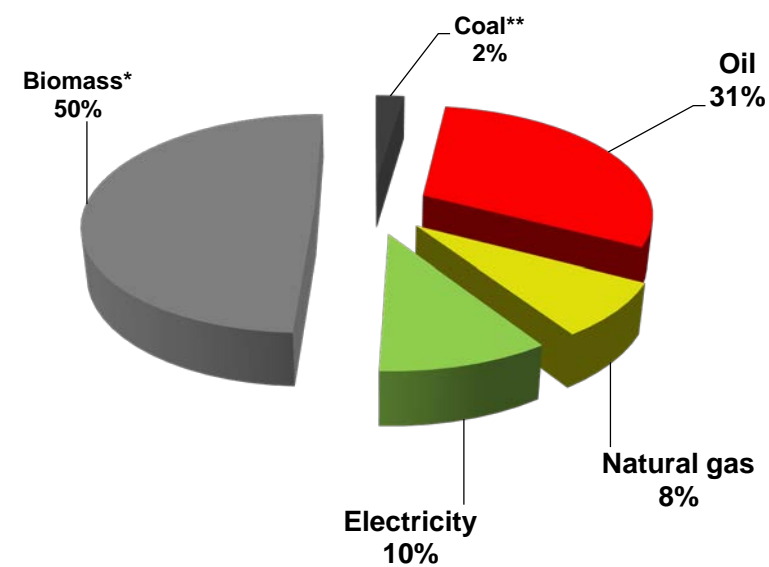
## Fuel Shares of Total Final Consumption



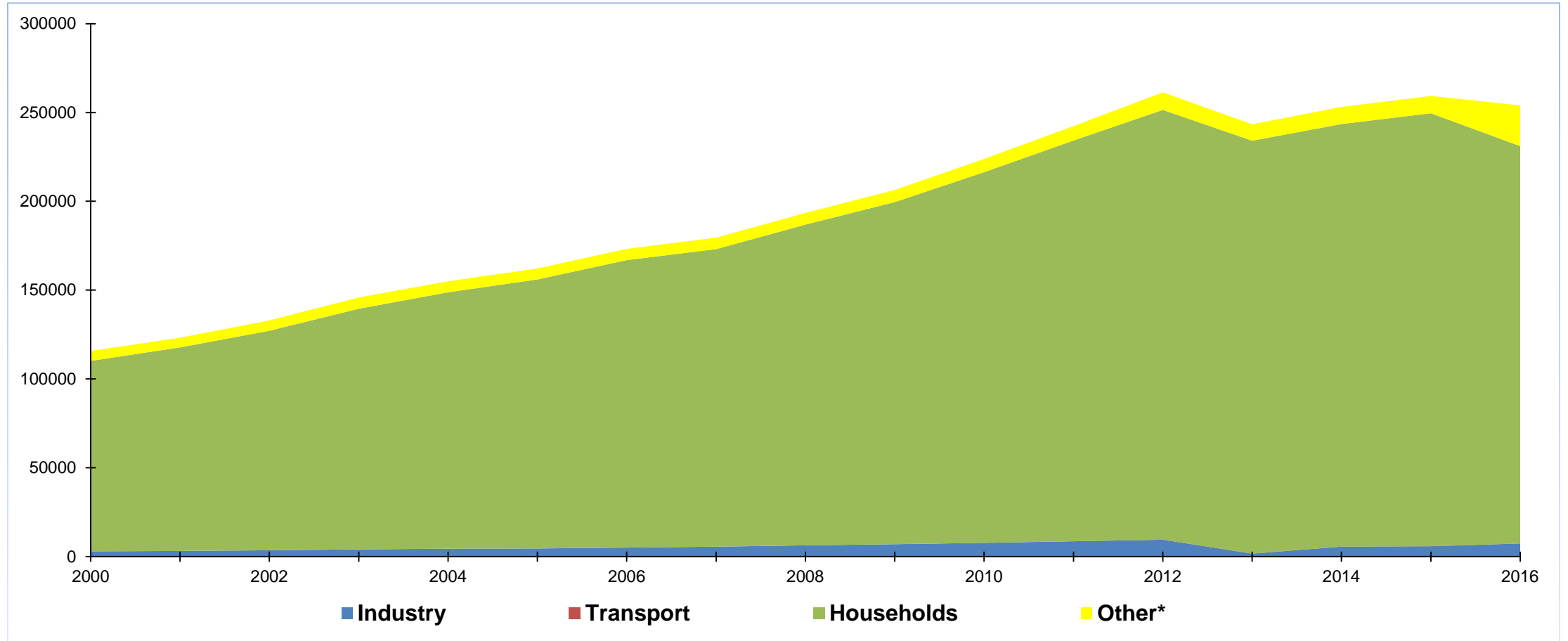
2000 - (122 112 ktoe)



2016 - (267 566 ktoe)



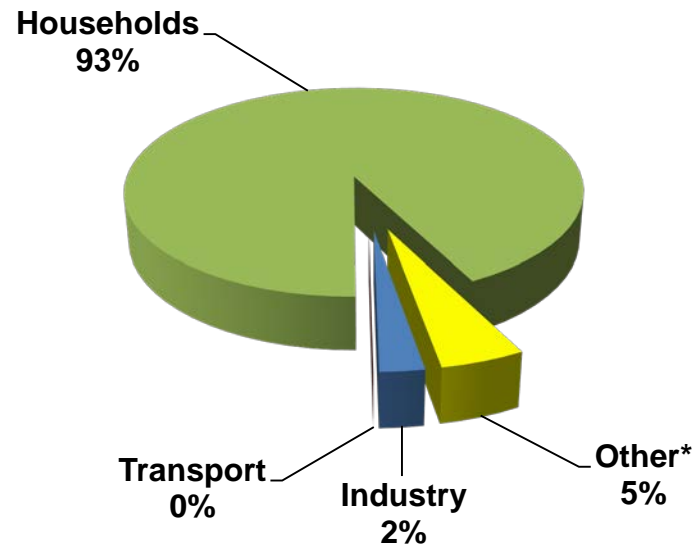
## Total Final Consumption from Firewood by sector (ktoe)



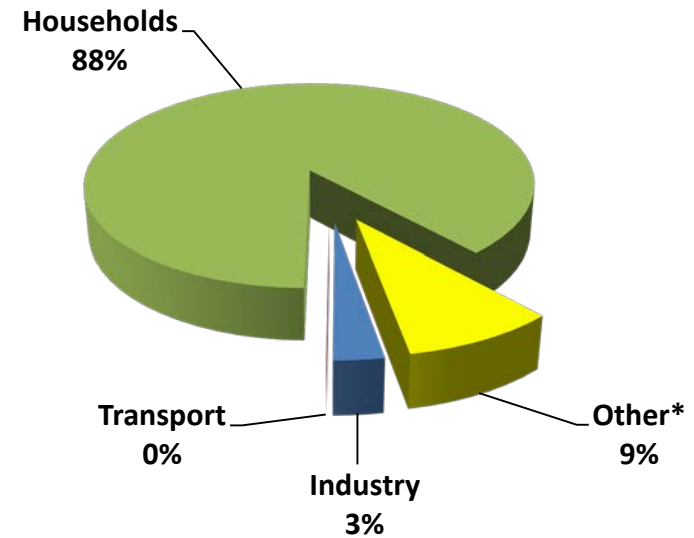
## Total Final Consumption of Firewood by sector (ktoe)



2000 - (107 225 ktoe)

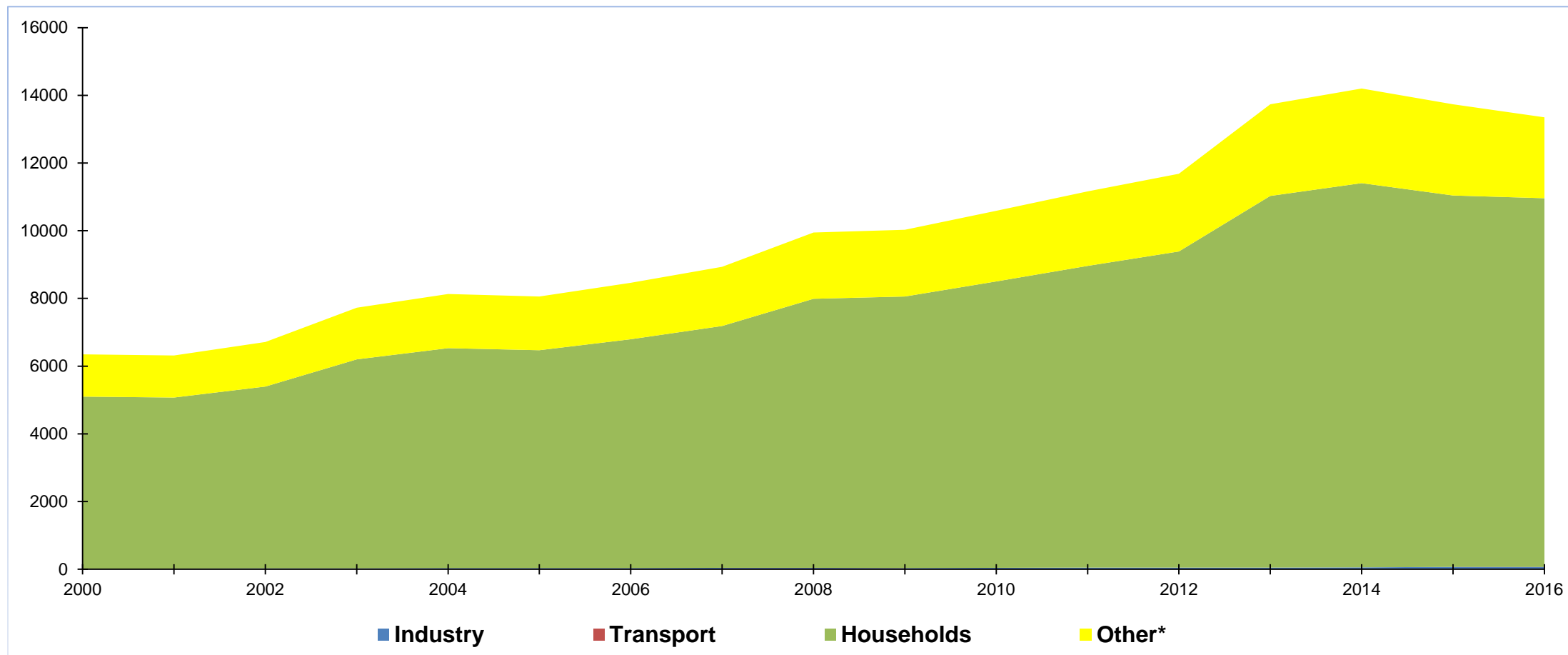


2016 - (223 642 ktoe)



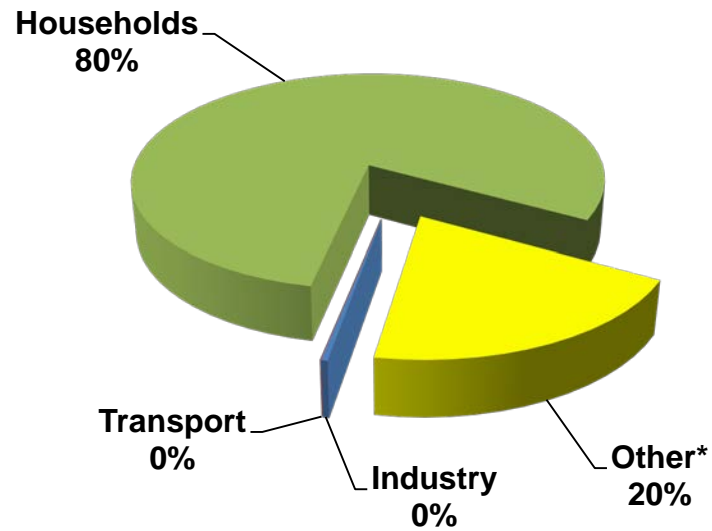


## Total Final Consumption of Charcoal by sector (ktoe)

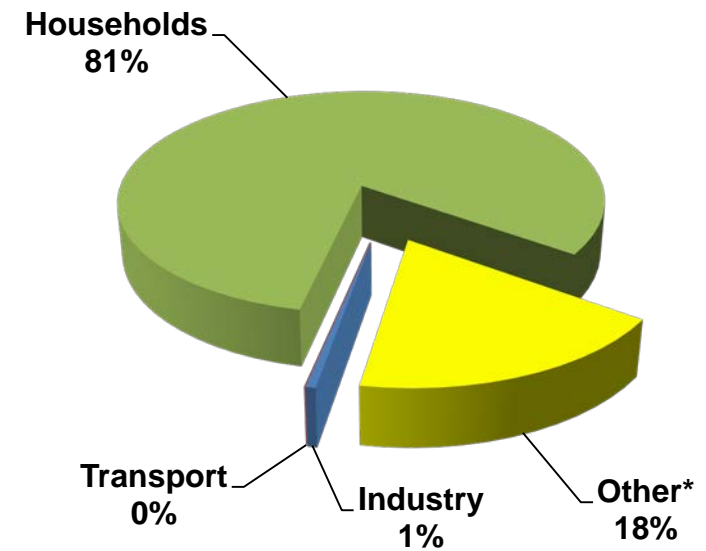


## Total Final Consumption of Charcoal by sector (ktoe)

2000 - (5 075 ktoe)



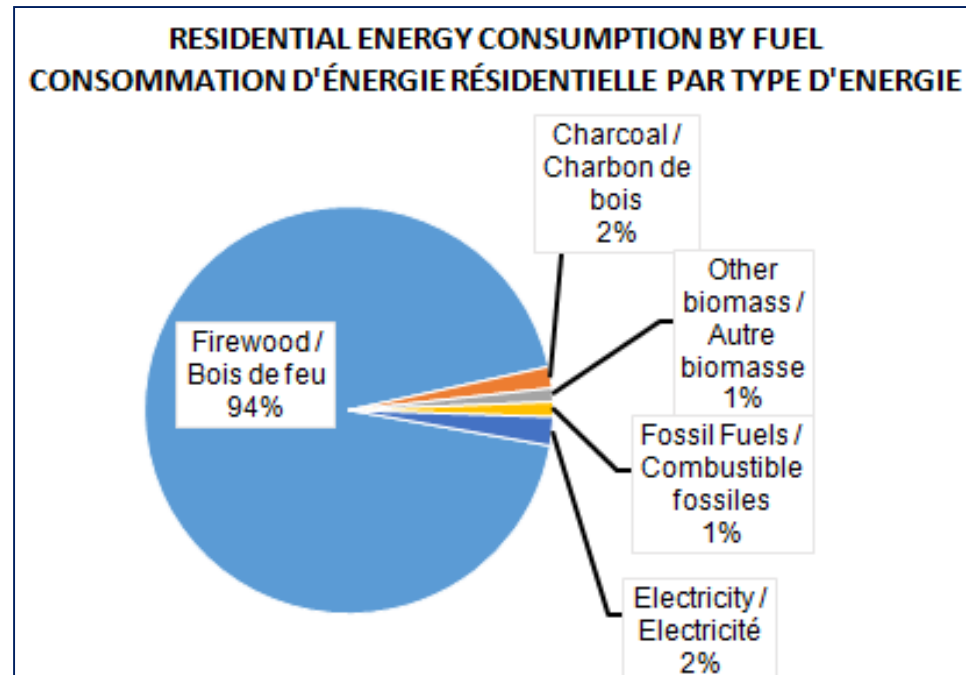
2016 - (10 885 ktoe)



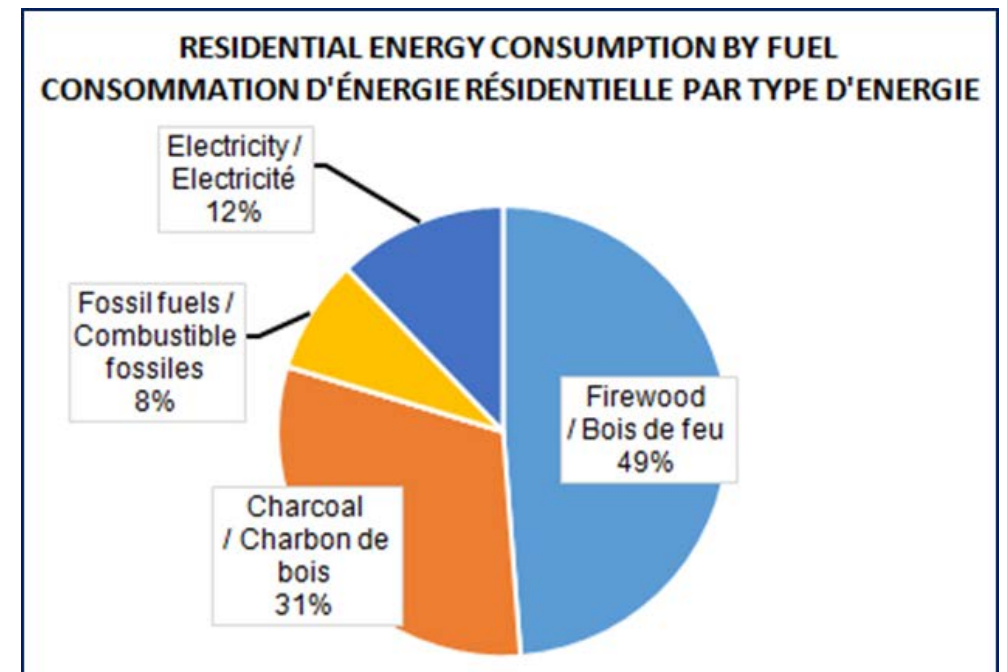
## Samples of Household Energy Consumption



### Niger



### Nigeria



## Objectives of the programme



1. Improve the capacity of the African countries to measure/collect and analyse bioenergy data and establish a strong system of continuous monitoring through the implementation of the Sustainability Indicators for Bioenergy (GSI) developed by FAO.
1. Propose tailored recommendation and policies that the individual country can implement to improve the monitoring and sustainability of bioenergy production and consumption.

## Bioenergy Programme- Project Description



- AFREC will be Implementation Agency of the and FAO will provide technical support;
- will propose make tailored policy recommendations that promote bioenergy pathways and support the countries in transforming these recommendations into effective policies;
- Phase One is planned to include up to 15 countries (depending on fund mobilisation) with the highest production and consumption of bioenergy (Nigeria, Ethiopia, Congo DR, Uganda, Kenya, Mozambique, Cote d'Ivoire, Zambia, South Africa, Zimbabwe, Madagascar, Sudan, Burkina Faso, Tanzania and Ghana)
- Estimated cost of phase One is USD 12 million which will be mobilize from Green fund and development partners;
- fund mobilization action plan will be carried out through bilateral communication and through special events organized specifically for fund raising

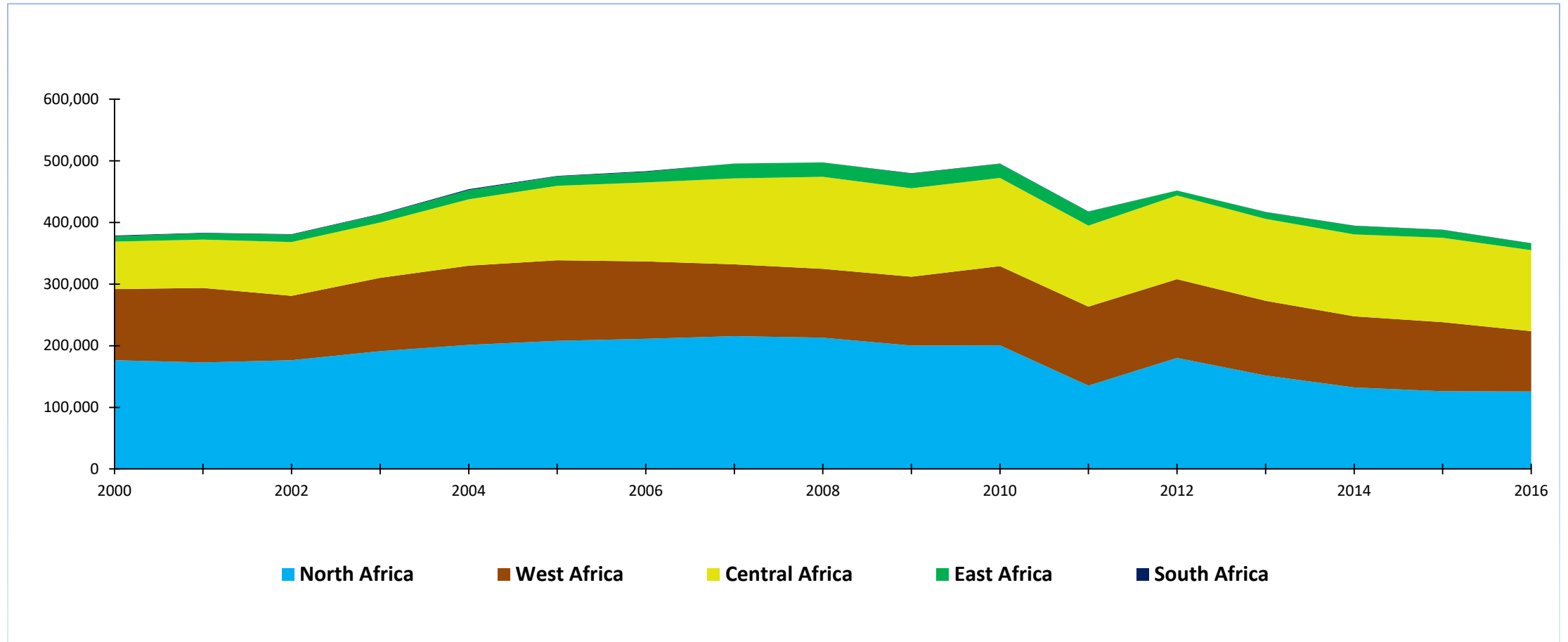


## **Oil and Gas Programme**

**African Domestic Market for Oil Products and Natural Gas**



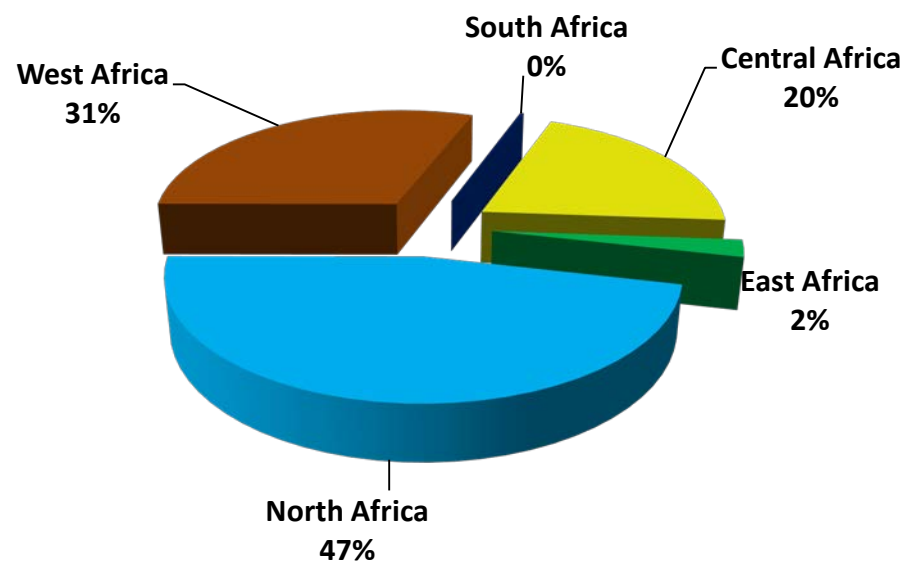
## Crude Oil Production in Africa by region (kt)



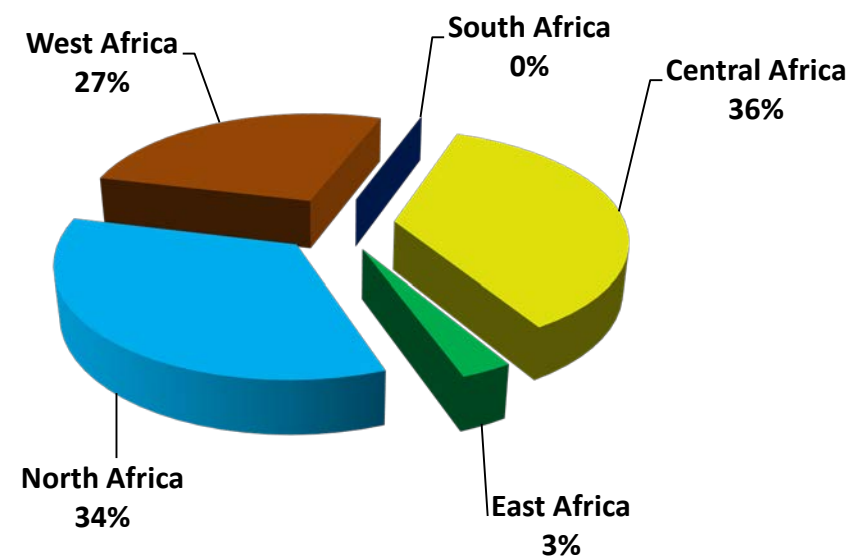
## Regional Shares of Crude Oil Production



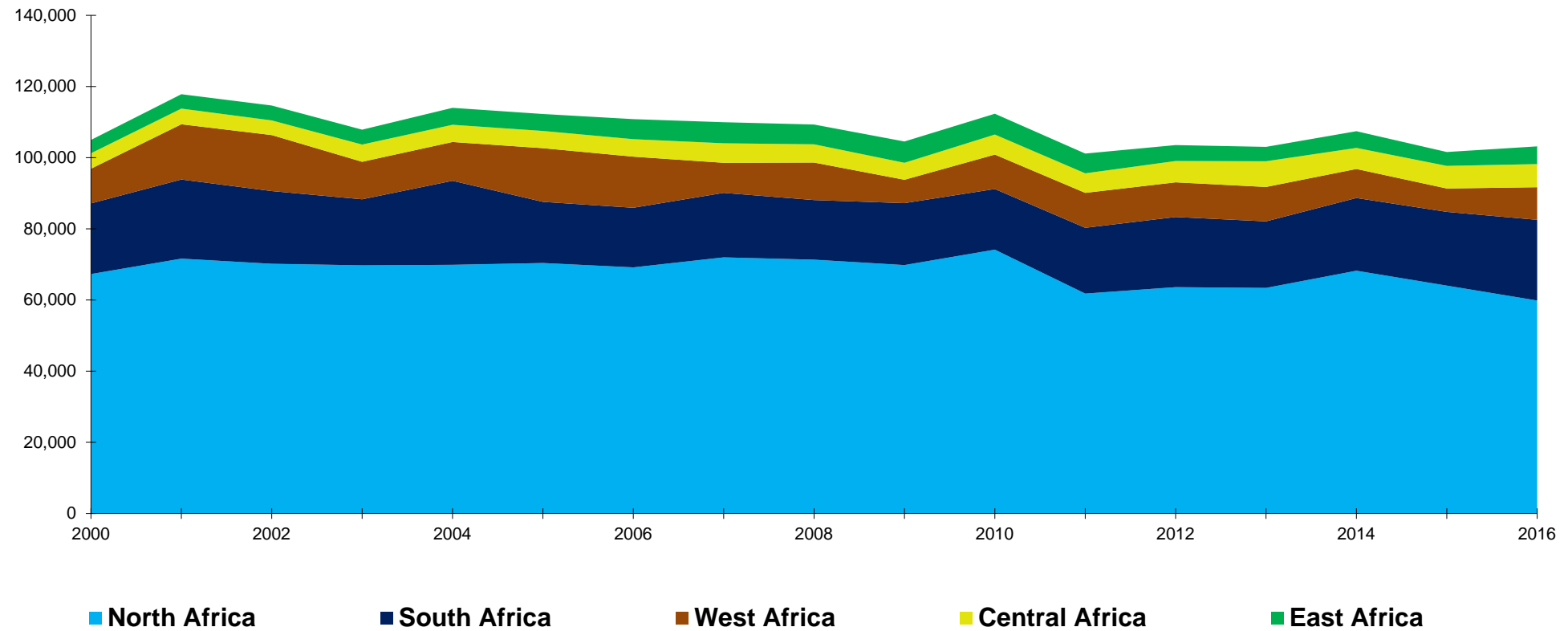
2 000



2 016



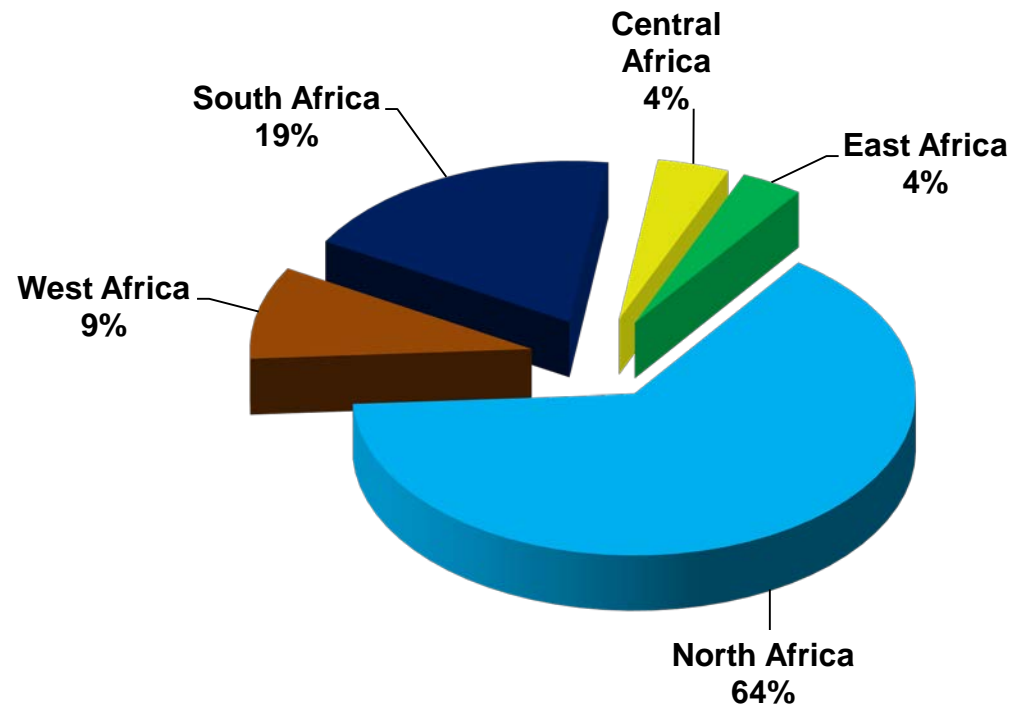
## Refinery Production in Africa by region (kt)



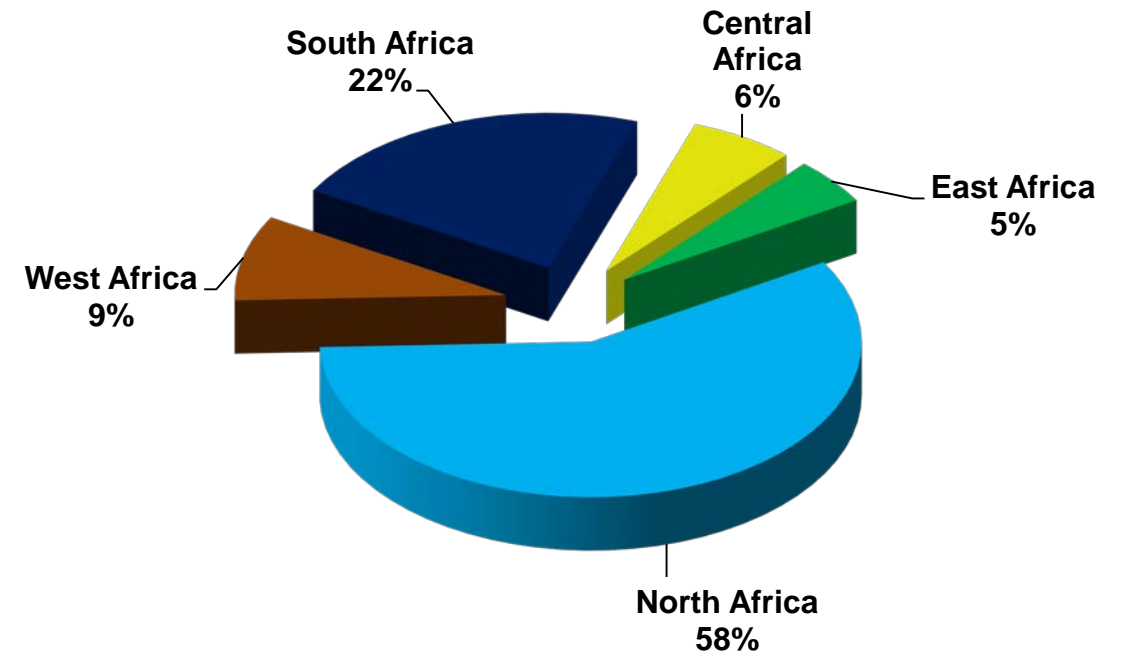
## Regional Shares of Refinery Production



2000 - (67 350 kt)



2016 (59 869 kt)

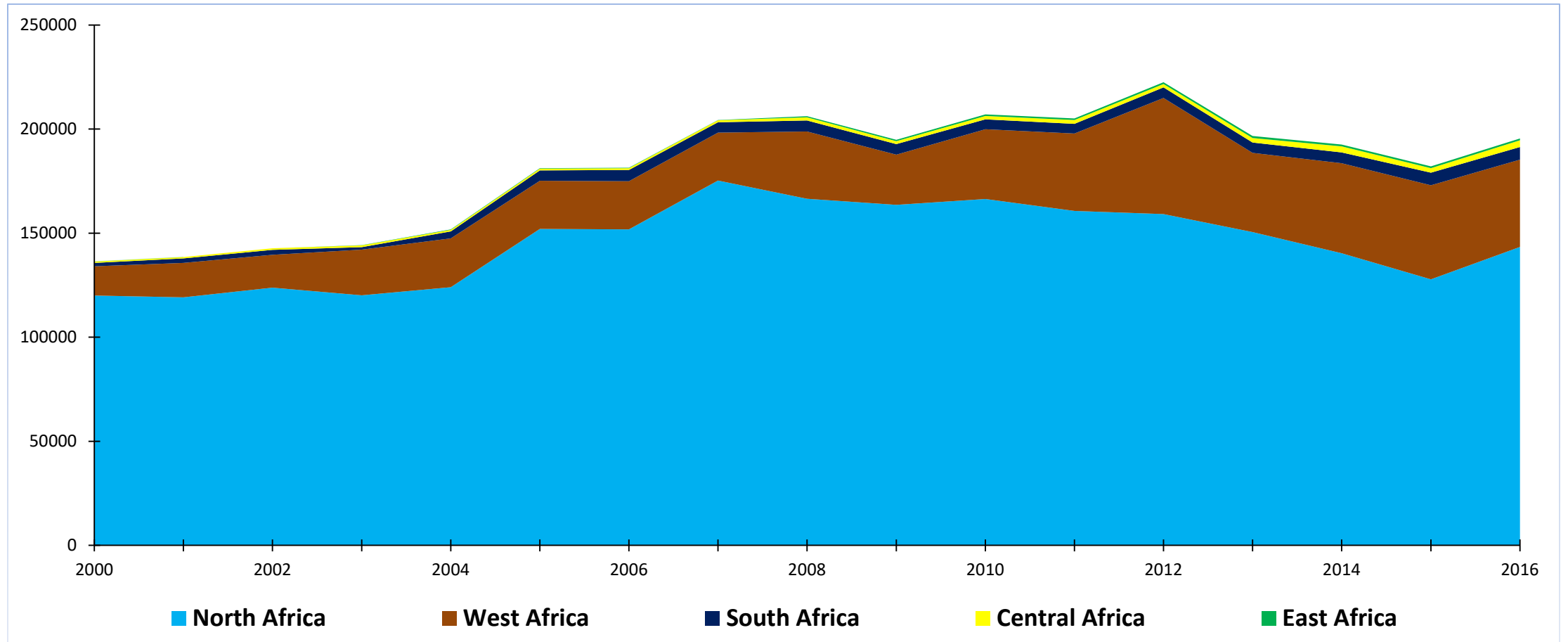


## Status of Oil Production in Africa



- ❑ Oil & Gas represent 50 – 80% of government revenues of major exporting countries in Africa such as Nigeria, Angola and Algeria
- ❑ Africa produces almost 10 million barrels per day, representing about 10% of global production;
- ❑ Africa's crude oil consumption is the lowest in the world;
- ❑ Over 70 – 80 % of the crude oil produced in Africa is exported indicating that most of the energy resources on the continent are not fully exploited at the domestic level.
- ❑ majority of African countries are also net energy importers of oil products

## Natural gas production by region (Million cubic meters)

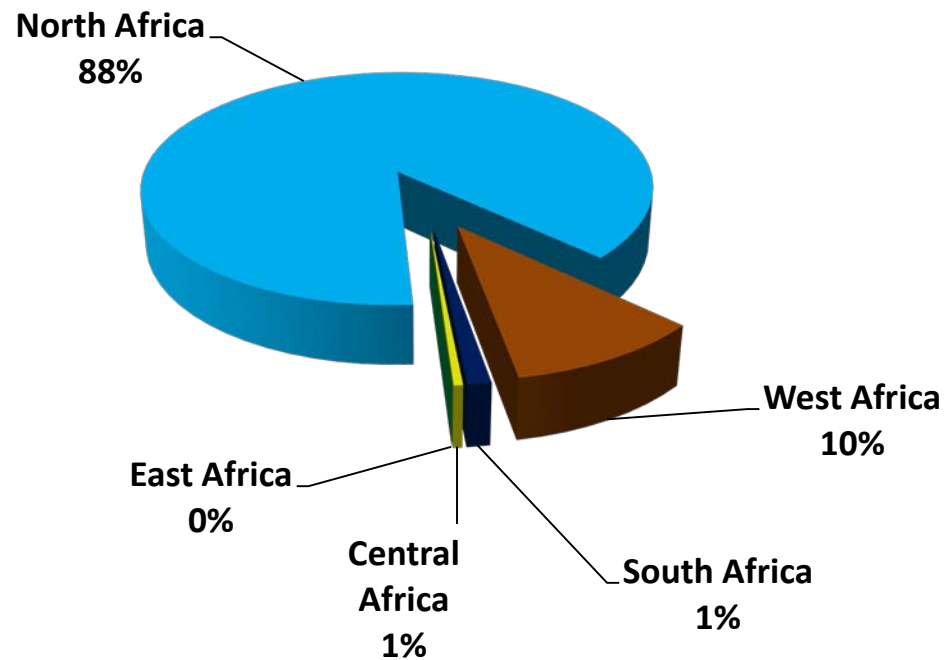




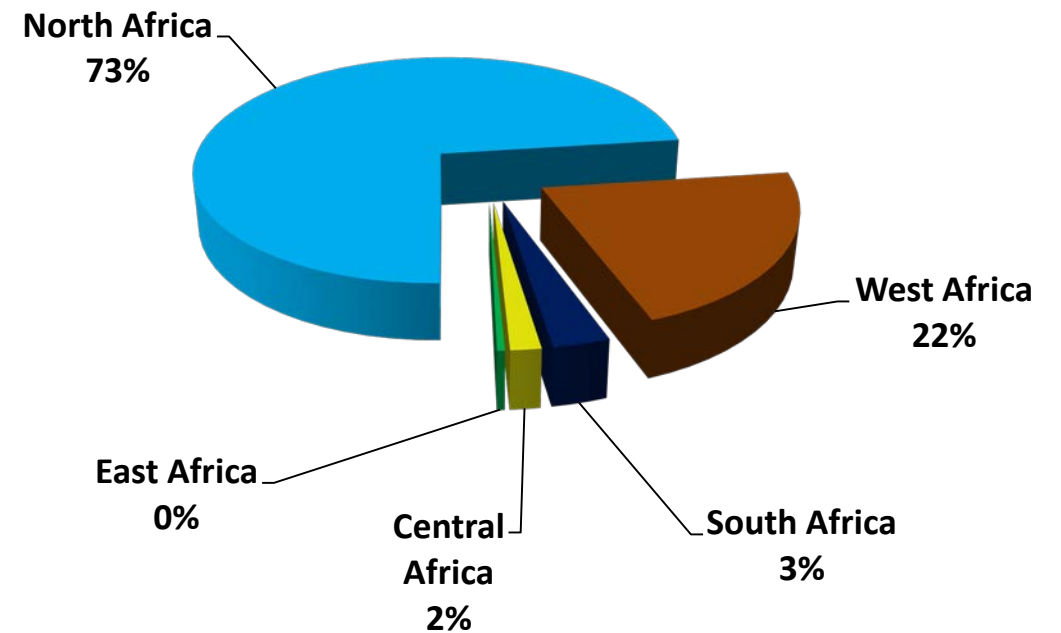
## Regional Shares of Natural Gas Production



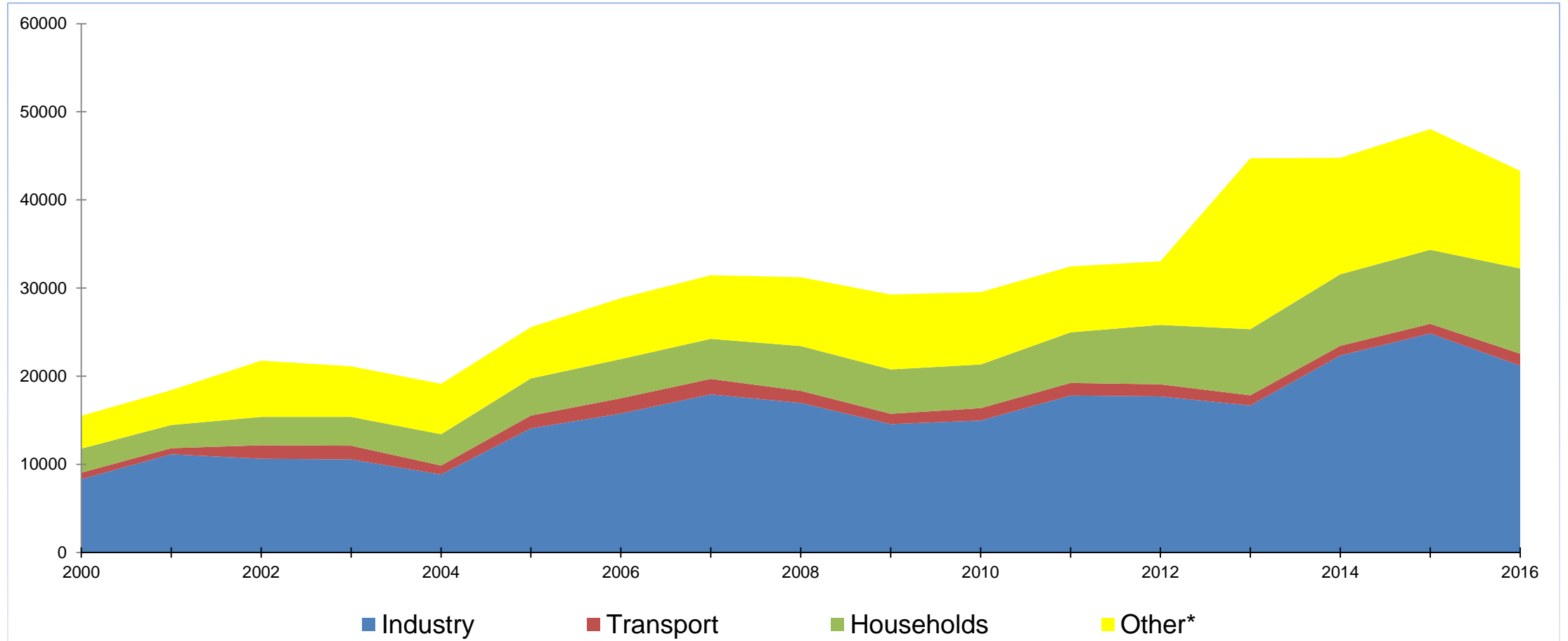
**2000 - (120 017 Mcm)**



**2016 – (143 337 Mcm)**



## Total Final Consumption of Natural Gas by sector (ktoe)



## A. Programme African domestic market for oil products



- ☐ This programme will focus in creating African domestic oil products market in collaboration with main African stakeholders mainly crude oil producers, net oil products consumers, current owners of unused and underused refineries and regional and national authorities.
  
- ☐ The programme will concentrate on the following:
  - Create Domestic African Market for the crude and oil products
  - Develop policies, strategies and action plans for expansion of refinery production capacity in Africa;
  - Revisit the existing petroleum policies and laws with a view to strengthening policies targeted to petroleum products market.

## **B. Integrate the domestic Natural Gas in African Energy Sector**



- ☐ The programme will focus exclusively on creating domestic natural gas market in Africa with target outcome on a market model from policy and investment approaches.
- ☐ Five attributes on which the market model could be addressed include:
  - New Market Structure
  - New Market Practices
  - A proto-type financial liquidity system
  - A regional Infrastructural System



**Thank You !!!**

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## African Energy Efficiency Programme

**Transforming Africa to Higher Efficiency Lighting and Appliances with a Strategic Integrated Energy Policy Approach at the Continental Level**



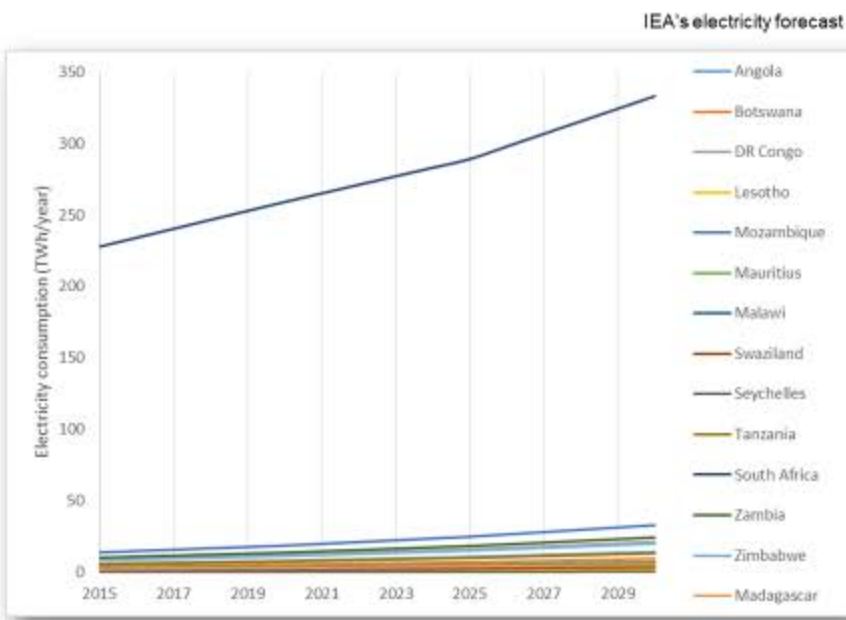


# Introduction



- ❑ The significance of this programme is based on the reality that **large-scale tangible results in saved energy** can be achieved in the **short-term** with significant savings with **very low cost**
- ❑ AFREC in collaboration with **UN Environment's United for Efficiency Programme (U4E)** are design a programme to support continental level market transformation to higher efficiency lighting and appliances (products which use more the half of all electricity).
- ❑ Accelerating the Continental transition to much more efficient electrical products would save all consumers in Africa more than \$ 175 Billion by 2030 and avoid the need to construct more than 50 large (1 GW) power plants over the next twenty years.

# OPPORTUNITIES IN THE SADC REGION



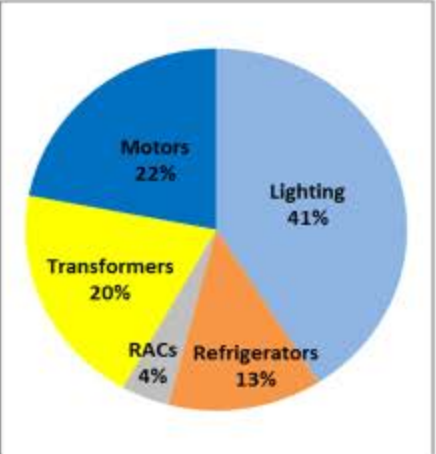
**\$50,000 million in electricity savings readily available by 2030 – from more efficient lighting, appliances, equipment.**

**Regional standards and policy harmonization process started**



**\$ 35,000 million investment in new more energy-efficient products**

## POLICY SCENARIO 2030 ENERGY SAVING SHARE



**Energy saving (TWh)**

→ 38 ≈



*Qatar electricity production in 2015*

*Power Plants 17,620 MW*

**CO<sub>2</sub> (million tonnes)**

→ 28 ≈



*15 million cars*

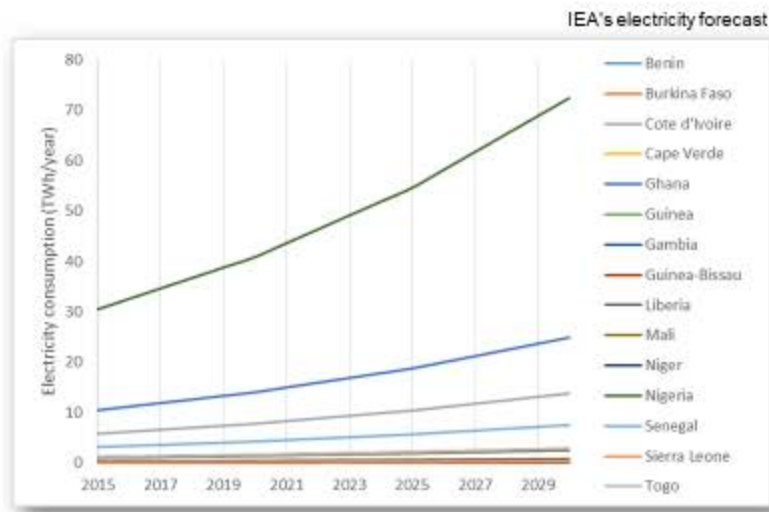
**Electricity bill saving (billion \$)**

→ 2 ≈



*GDP Cabo Verde 2016*

# OPPORTUNITIES IN THE ECOWAS REGION



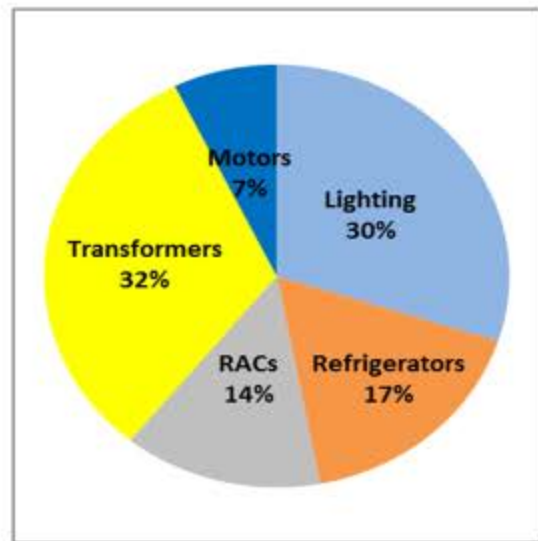
**\$25,000 million in electricity savings readily available by 2030 – from more efficient lighting, appliances, equipment.**

**Regional standards and policy harmonization approved for:**

- on-grid and off-grid lighting;
- clothes washers, fans, refrigerators, room air-conditioners, standby power, televisions and motors.



## POLICY SCENARIO 2030 ENERGY SAVING SHARE



Energy saving (TWh)	→	14	≈	
CO <sub>2</sub> (million tonnes)	→	6	≈	
Electricity bill saving (billion \$)	→	2	≈	

**\$ 12,000 million investment in new more energy-efficient products**

*Ghana electricity production in 2015*

*Power Plants  
6,160 MW*

*3 million cars*

*GDP Cabo Verde 2016*

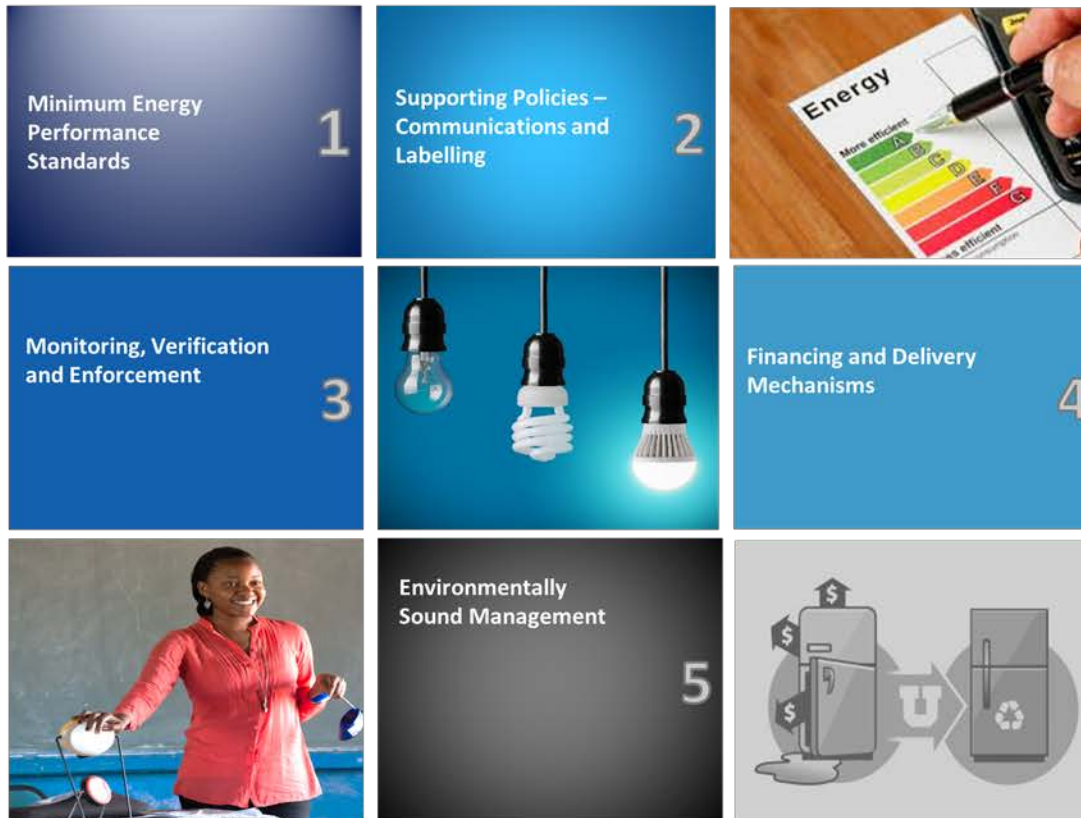


# Programme Description



- ❑ The Proposed Continental Harmonisation Programme is proposed over a five-years duration starting from 2020 as a first-phase.
- ❑ The programme will be implemented jointly by AFREC and UN Environment's United for Efficiency initiative and in partnership with partners at the continental, regional and country levels ;
- ❑ The Programme will consist of the following:
  - Regional and associated country level market assessments, country savings assessments , data compilation, baseline analysis and country savings assessment modelling to 2030 and 2040 ( One region per year).
  - Working with one African Region per year to adopt policies and measures at the regional level that can readily to be adopted into national legislation in a harmonised fashion (lighting, cooling appliances (air conditioners, residential refrigerators and freezers), general service electric motors, fans, distribution power transformers and information and communication technologies)
  - Providing in-country and remote support to priority countries to adopt the continental / regional MEPS and labels, product registration and testing systems, and to develop strategic national policies for energy efficiency lighting and appliances;

# The Integrated Policy Approach Transforms Markets



Country assessments  
of potential savings &  
policy readiness

Global consensus  
on best practice  
policies

Gain political  
commitment  
from countries  
and regions

Implement national  
& regional product  
policies

# African Energy Sector Transition



- ❑ The African Energy Sector Transition programme is motivated by Africa Agenda 2063, the United Nations 2030 Sustainable Development Goals, and the Paris Agreement goal.
- ❑ Currently the African countries are responsible for very low emission of global CO2 emission levels (4%), but are expected to pursue the development aspirations which, if not consider the climate constraint, could lead Africa to become emitters of substantial emissions in the coming.
- ❑ In short, the African Energy Transition Programme is aiming to provide answers for the fundamental question for the African nations is how to align the imperatives of development aspirations, achievements of Africa Agenda 2063 and SDGs, and climate change policies, by maximizing the synergies while minimizing trade-offs.
- ❑ The African Energy Sector Transition analytical and engagement dimensions is inspired by the international “Deep Decarbonization Pathways (DDP)” initiative.
- ❑ The initiative, coordinated by the Paris-based Institute of Sustainable Development and International Relations (IDDRI) since 2014, is active today in around 40 countries where it supports the deployment of in-country capacities to elaborate context-driven strategies articulating development, sustainability and climate objectives





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