



# CENTRAL AFRICAN PIPELINE SYSTEM ( CAPS)

## A Conceptual Study

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# CENTRAL AFRICAN PIPELINE SYSTEM



## AGENDA

1. Background
2. Objective
3. Energy Statistics
4. Pipeline System Concept
5. Pre-Feasibility Studies Scope







# End Energy Poverty in the Central Africa Region by 2030

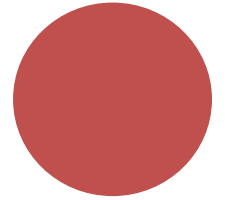
# Background

Global focus is gradually turning away from crude oil as a major source of energy to natural gas due to its abundant availability, environmental friendliness, and cost effectiveness;

The Pipeline System for Central Africa aims at improving the competitiveness of the energy sectors in Congo, Cameroon, Equatorial Guinea, Chad, Central Africa Republic, Angola, DRC, Rwanda, Burundi and Sao Tome & Principe

- By promoting the use of cheaper and environmentally cleaner gas from ECCAS producing countries in lieu of solid and liquid fuels for power generation and other industrial, commercial uses,
- And diversifying energy supply sources;

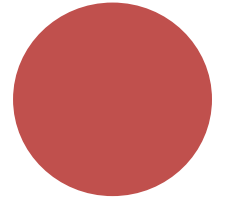
This will foster regional economic and political integration that would support economic growth, and in particular the development of the Central Africa electricity market.



# Objectives

- CAPS' main objective is to enable the transportation, storage and distribution of fuel products and LNG for electricity production.
- This aims at supplying future connected ECCAS industrial hubs made of refineries, gas processing plants, power generation plants.

This will ultimately boost the development of mining industry in ECCAS sub-region. The potential for natural gas as a cost-effective, long-term solution to power homes, businesses and end shortages in the mining industry being enormous.





# Energy Statistics

***Rule of thumb on Power:  
1,000MW per 1 million people***

**Cameroon:** Just 54% of the population has access to electricity. The country's installed electricity generation capacity at present is approximately **1,402 MW**, of installed generation capacity to serve a population of over **25 million people**. 56.15% of which is from hydropower, 43.84% from fossil fuels (17.55% from natural gas and 26.29% from oil)

**Congo:** 3 out of 5 people do not have access to electricity. The country faces particularly severe challenges in bringing energy of any kind to its rural communities. In 2018, electricity capacity totaled **600 MW** in Congo Brazzaville , of installed generation capacity to serve a population of over **5 million people**

**Chad :** has one of the lowest rates of electricity access in the world. Just ten percent of the population has reliable electricity, and that rate falls to about one percent in rural areas. Chad's ability to achieve increased energy access and poverty reduction is constrained by significant challenges in the power sector. It currently only has about **314 MW** of installed generation capacity to serve a population of over **15 million people**

**CAR:** The Central African Republic does not currently produce either petroleum or natural gas. The country's petroleum needs are met through imports; in the absence of any domestic refining capacity, only refined products are imported. The vast majority of the population still depend on traditional biomass use for the majority of their energy needs. The country's installed electricity generation capacity at present is approximately **46 MW** to serve a population of over **4 million people**



# How to End Energy Poverty by 2030 ?

## Implementing the Central African Pipeline System: CAPS

**Building Energy Infrastructure**

LNG Pipelines  
Fuel Pipelines  
Pumping Stations  
LNG Terminals  
Power Plants  
Oil Refineries  
Storage Depots



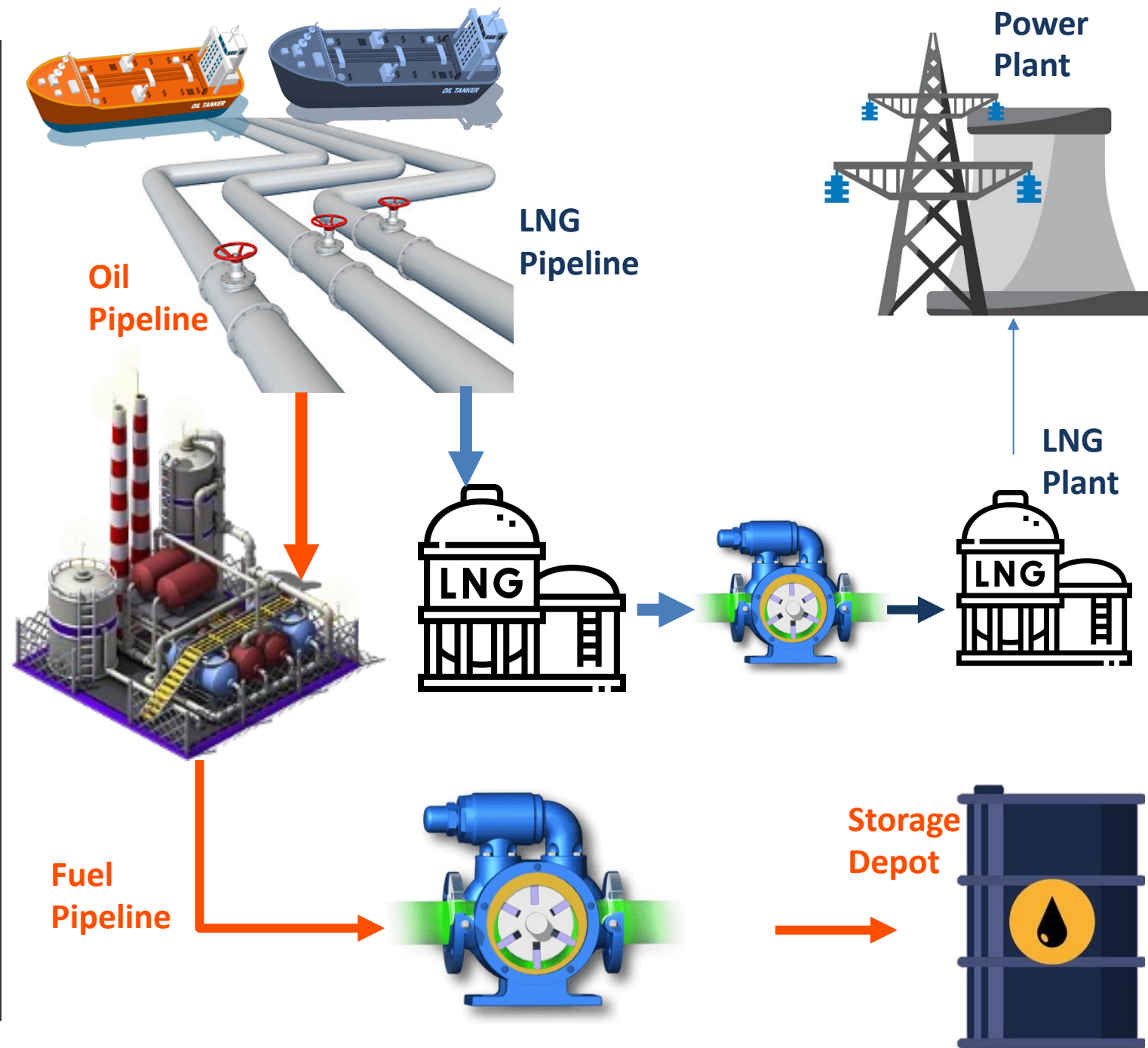
# Building Infrastructure to End Energy Poverty in the ECCAS by 2030

The high cost and inadequate availability of energy is a major obstacle to economic growth and poverty reduction in the central Africa region.

The future of The Economic Community of Central African States (ECCAS) must pass through the development of a comprehensive strategy. We've called this strategy "**Energy Poverty-Free Zone 2030.**"

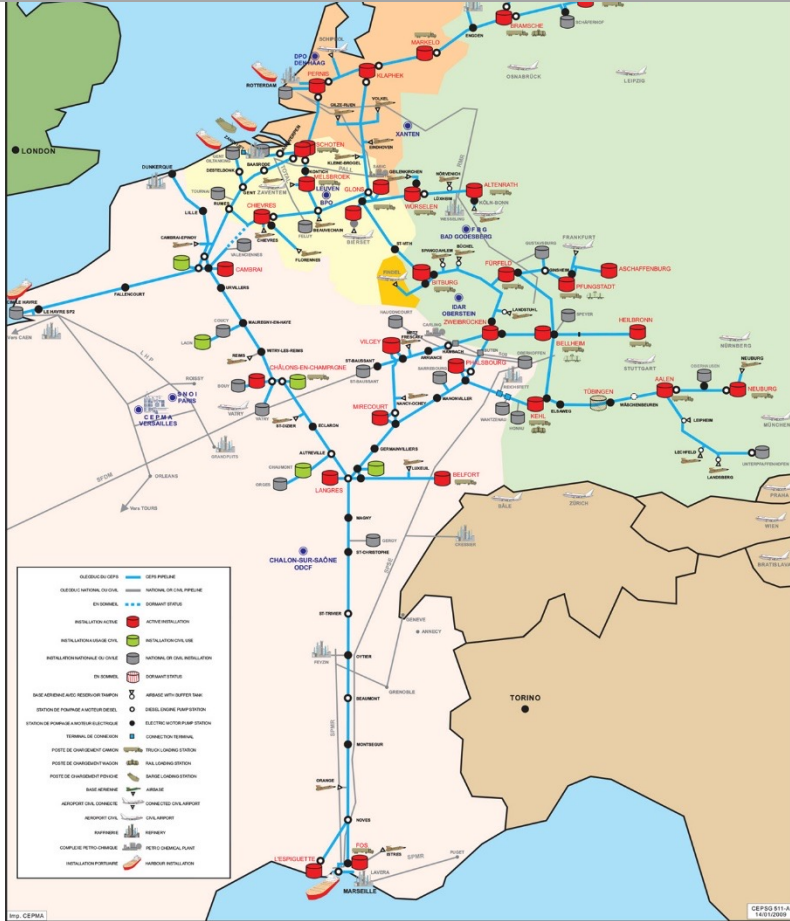
Key elements have been identified as missing from ECCAS countries as a community, to end energy poverty. These are: **LNG pipelines, Fuel Pipelines, pumping stations, LNG terminals, power plants, oil refineries, fuel storage depots.**

To achieve the goal of ending energy poverty in this region, these key pieces of infrastructure need to be completed by 2030





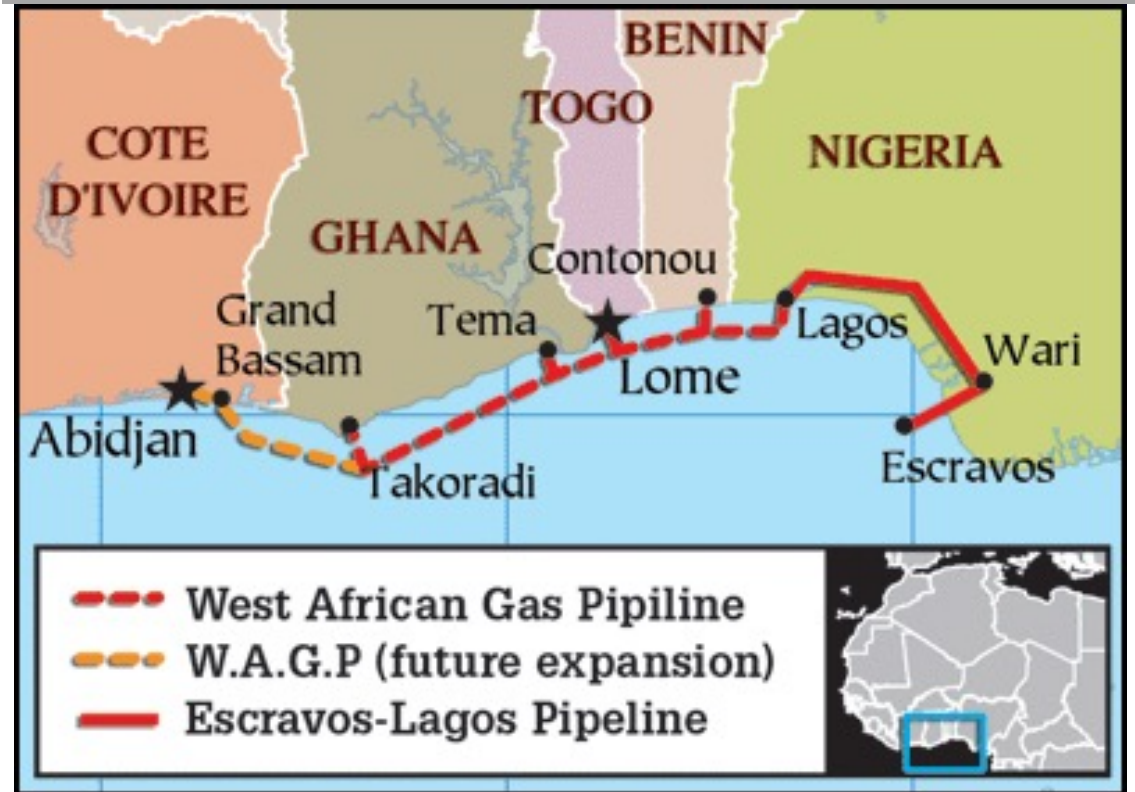
## Central Europe Pipeline System – Since 1950



**5,200 Km of Pipeline – France, Belgium, Germany, Netherlands, Luxembourg**

## What Inspired Us

### West African Gas Pipeline – Completed in 2008



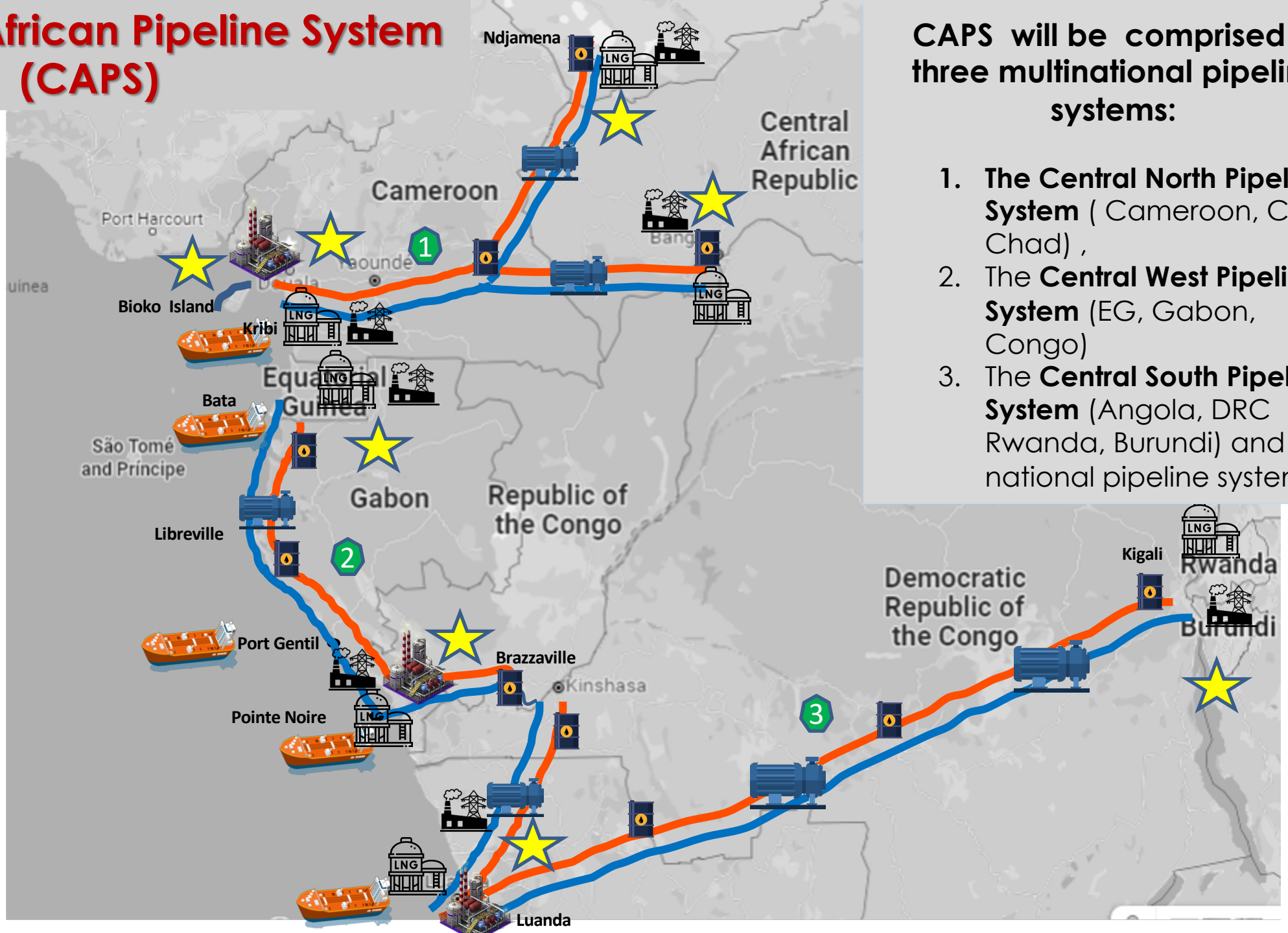
**678 Km of Pipeline – Operated by Chevron**

# **Central African Pipeline System**

## **The Concept**



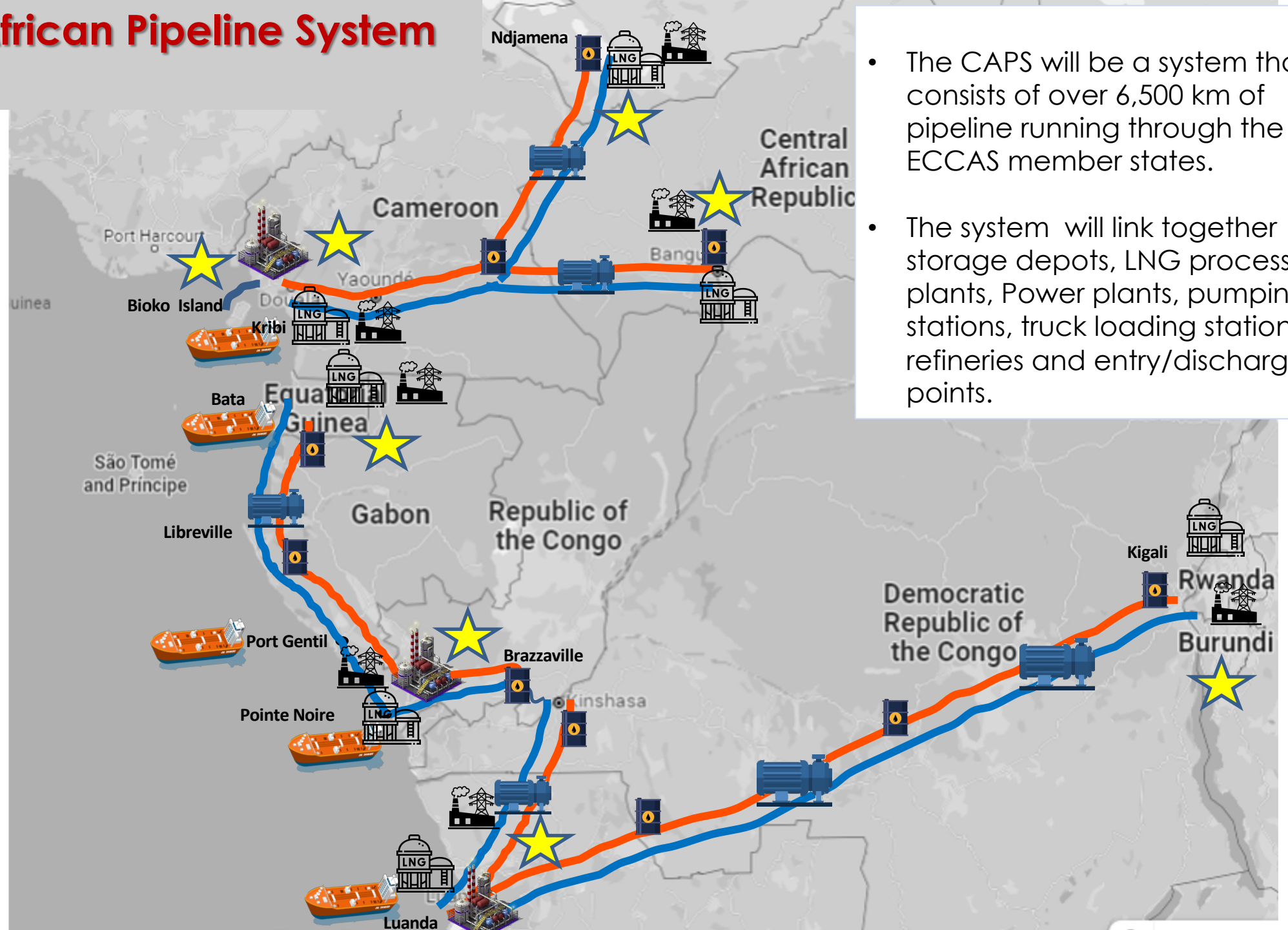
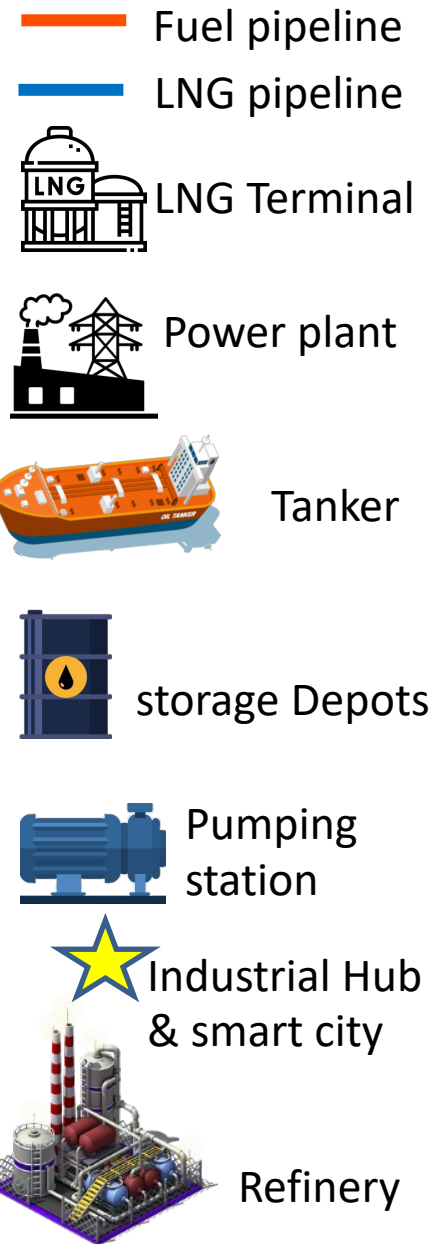
# The Central African Pipeline System (CAPS)



CAPS will be comprised of three multinational pipeline systems:

1. **The Central North Pipeline System** ( Cameroon, CAR, Chad) ,
2. **The Central West Pipeline System** (EG, Gabon, Congo)
3. **The Central South Pipeline System** (Angola, DRC, Rwanda, Burundi) and 11 national pipeline systems

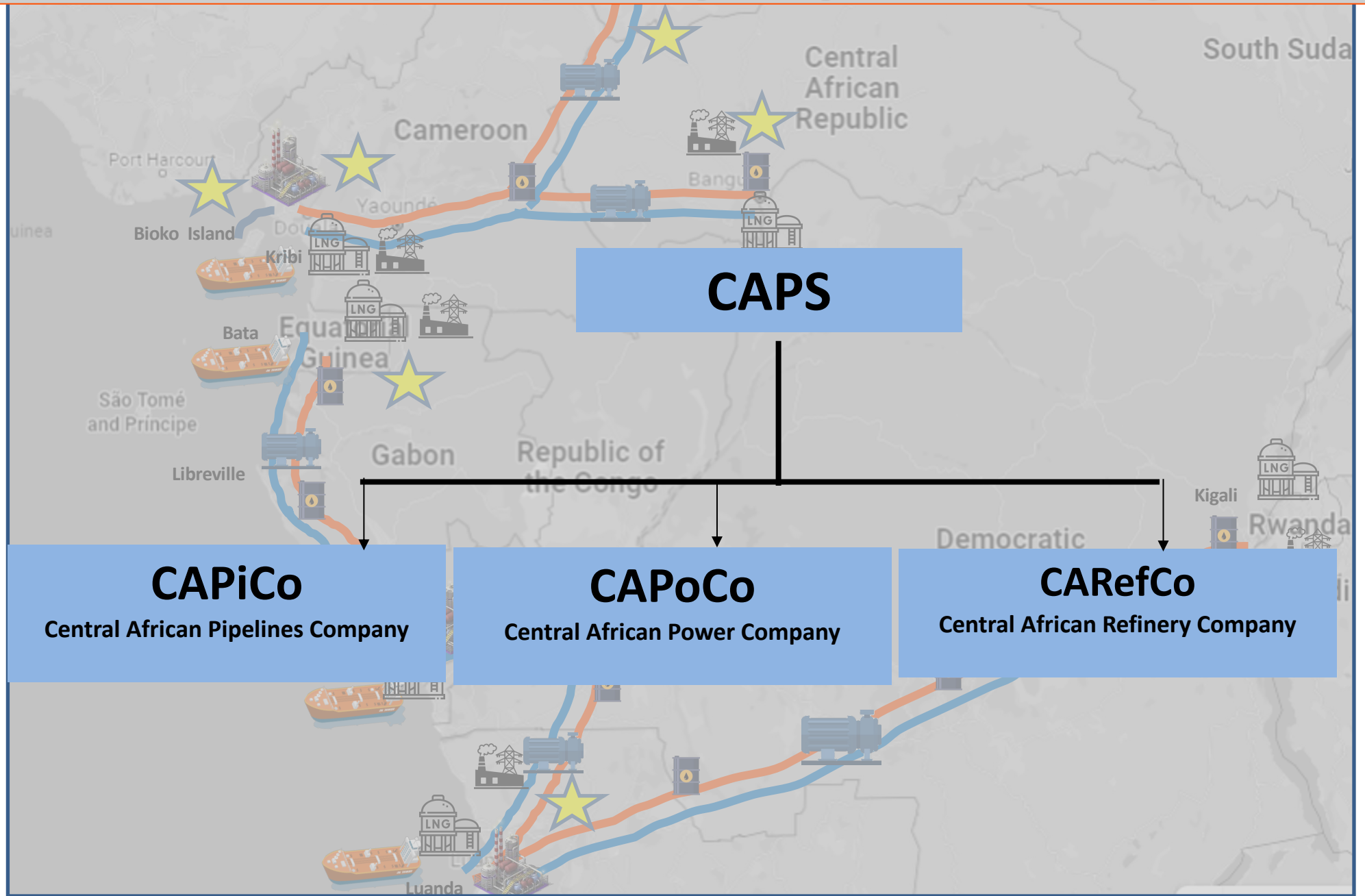
# The Central African Pipeline System (CAPS)



- The CAPS will be a system that consists of over 6,500 km of pipeline running through the 11 ECCAS member states.
- The system will link together storage depots, LNG processing plants, Power plants, pumping stations, truck loading stations, refineries and entry/discharge points.



# The Central African Pipeline System (CAPS) Overall Management Plan



# CAPS Overall Project Timeline



## Phase 1

**Project Completion**  
Cameroon, Equatorial  
Guinea, Congo, Gabon

2022 - 2025

## Phase 3

**Project Completion**  
Angola, DRC

2026 - 2028

## Phase 2

**Project Completion**  
Chad , Central Africa Republic

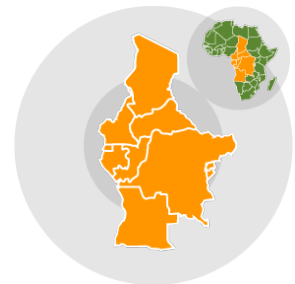
2024 - 2026

## Phase 4

**Project Completion**  
Rwanda, Burundi

2028 - 2030

...





# Phase 1 - ( Congo , EG , Gabon , Cameroon )



## Step 1

### **Pre-Feasibility Studies**

Reserves estimation,  
social & environmental  
impact, Economics



Dec 2022

**Construction** of Pipelines ,  
Power Plants, storage depots,  
refineries

## **Step 3**



May 2024

Dec 2024

**Commissioning**  
and Start-up of  
Refineries and Fuel  
pipelines

## **Step 5**



May 2025

Dec 2025

## **Step 2**

**CEMAC Leaders Agreement**  
Signatures at CABEF 2023  
**FEED and Detail** Engineering of  
Gas Pipelines and Power Plants



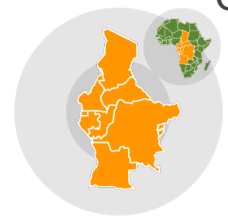
## **Step 4**

**Commissioning**  
and Start-up of  
LNG Pipelines and  
Power plants

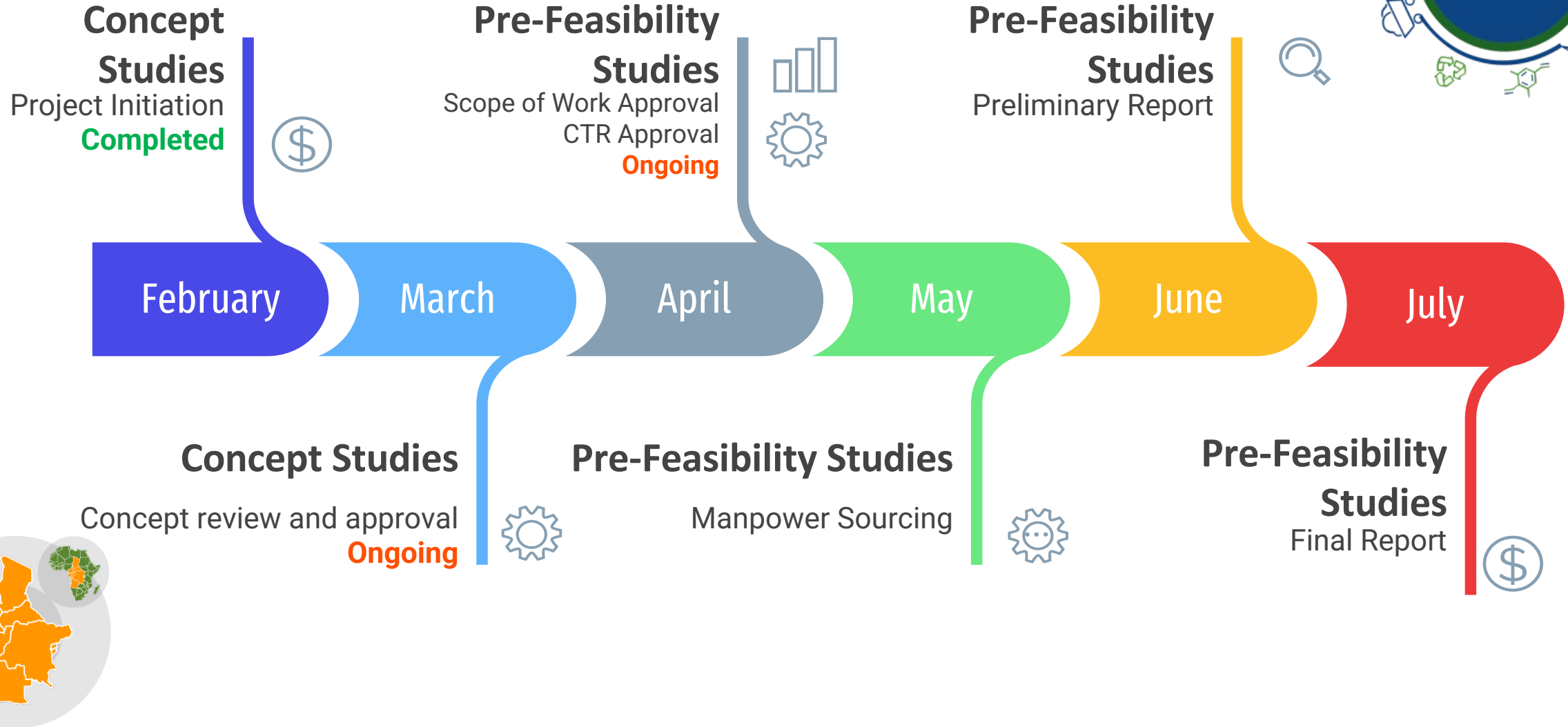


## **Step 6**

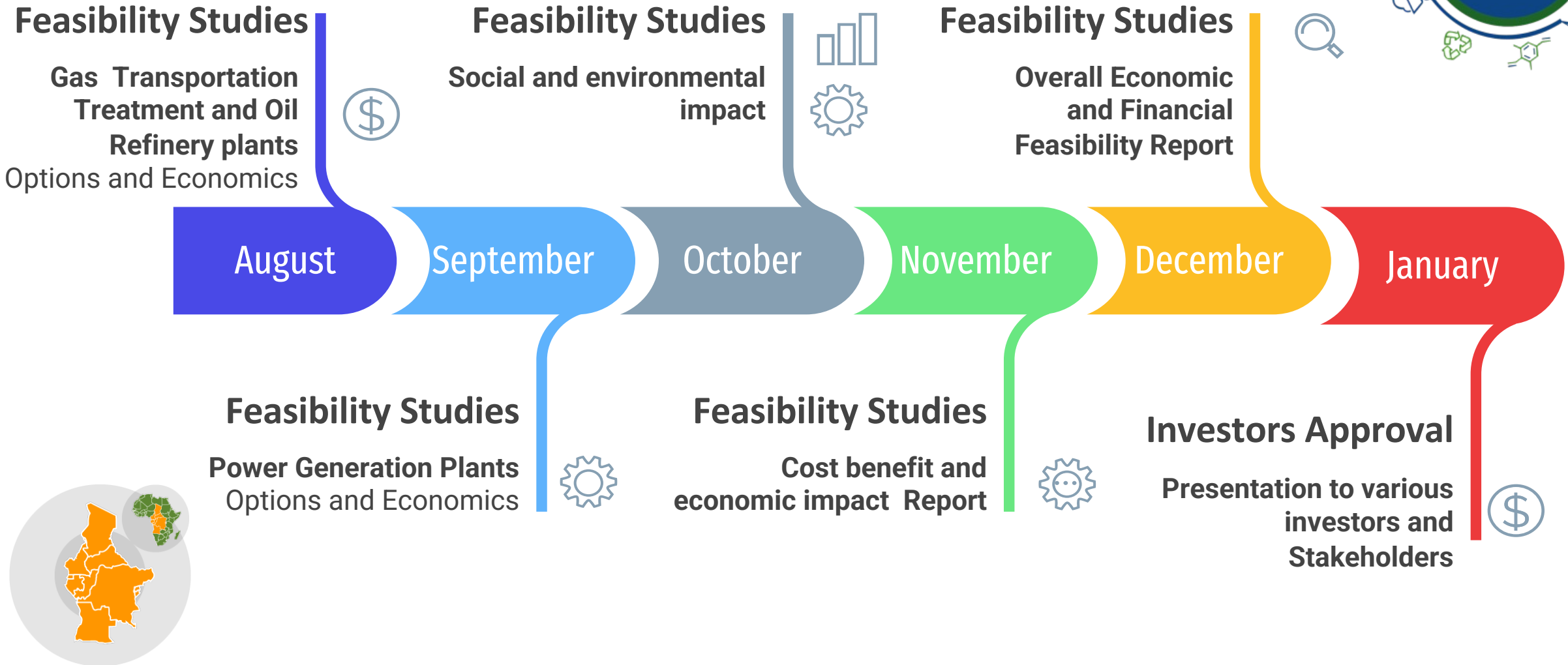
**First Megawatts**  
& **First fuel** to hit  
homes and businesses  
in CEMAC



# Step 1 : Pre-Feasibilities Studies ( Q1 – Q2 2022)



# Step 1 : Feasibilities Studies ( Q3 – Q4, 2022)





# FEASIBILITY STUDIES

## PROPOSED PROJECT MANAGEMENT TEAM



**CABEF PERMANENT  
SECRETARY**

**CABEF ADVISORY  
COMMITTEE**

**CABEF PROJECTS  
OPERATIONS DIRECTOR**

**ECCAS Energy  
Legal Framework**

**ECCAS Gas  
Reserves Estimation**

**Pipelines Design**

**Oil & Gas Processing  
Design**

**Electricity Production  
Design**

**Facilities Design**

**Business  
Financing**

**CEMAC Senior  
Legal Expert  
???**

**Senior Reservoir  
Geologist  
???**

**Senior Pipeline  
Engineer  
???**

**Senior Process  
Engineer**

**Senior Electrical  
Engineer**

**Senior Facilities  
Engineer  
??**

**Expert Finance &  
Economics  
??**

**Junior Legal Associate  
??**

**Junior Reservoir  
Geologist  
??**

**Geomatics Engineer  
??**

**Process Safety Engineer  
??**

**Instrumentation &  
Control Engineer  
??**

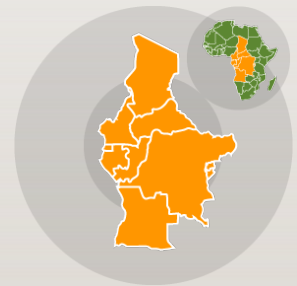
**Civil and Structural  
Engineer  
??**

**Business Economist  
??**

**Mechanical Engineer  
??**

**Cost Estimation  
Engineer  
??**

**ECCAS and African local content will drive the project**



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**THANK YOU**

## SERVICES OFFERED

### TRANSPORT 5 120 km of pipeline

Around the clock operations.

- **Diesel, gasoline, domestic fuel, naphtha: point to point transport.**
- **Aviation fuel: banking system**

Specifications for both civil and military aviation fuel are unified permitting storage and transport of only one type of aviation fuel. Once a client enters fuel into the network, delivery can be made almost immediately at any point (banking system).



### STORAGE a capacity of 1.3 Million m<sup>3</sup>

- In 34 CEPS depots and 5 non-NATO depots operated by the CEPS, 24 of them equipped with truck/rail loading stations.



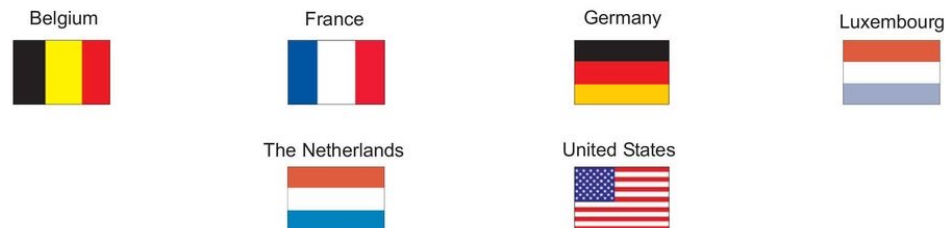
### QUALITY CONTROL

- Carried out systematically at entry and delivery points and by taking samples during transport and storage.
- Means: modern, internationally certified laboratories, standard methods and testing equipment.
- Highly qualified and experienced laboratory technicians.

## FOR ITS MANAGEMENT, OPERATIONS AND FUNDING, THE CEPS OPERATES AS AN INTEGRATED SYSTEM

### ORGANISATION

#### Six Member Nations :



### BOARD OF DIRECTORS

Under the authority of the North Atlantic Council, a "Board of Directors", **BOD**, defines the general policy, missions, objectives and resources of the System. Each Member Nation and the Military Authorities are represented thereon.

### CEPMA Central Europe Pipeline Management Agency

**CEPMA** is the executive managing agency for the CEPS.

Tariffs, contracts and procedures to be applied are the joint responsibility of **CEPMA** and the **National Organisations**.

### NATIONAL ORGANISATIONS

Each Host Nation is responsible for its own organisational system.

This is undertaken by a **National Organisation** dealing with administration and legal support in each country:

- Belgian Pipeline Organisation, the **BPO** (Belgium and Luxembourg),
- Service National des Oléoducs Interalliés, the **SNOI** (France),
- Fernleitungs-Betriebsgesellschaft, the **FBG** (Germany),
- Defensie Pijpleiding Organisatie, the **DPO** (The Netherlands).

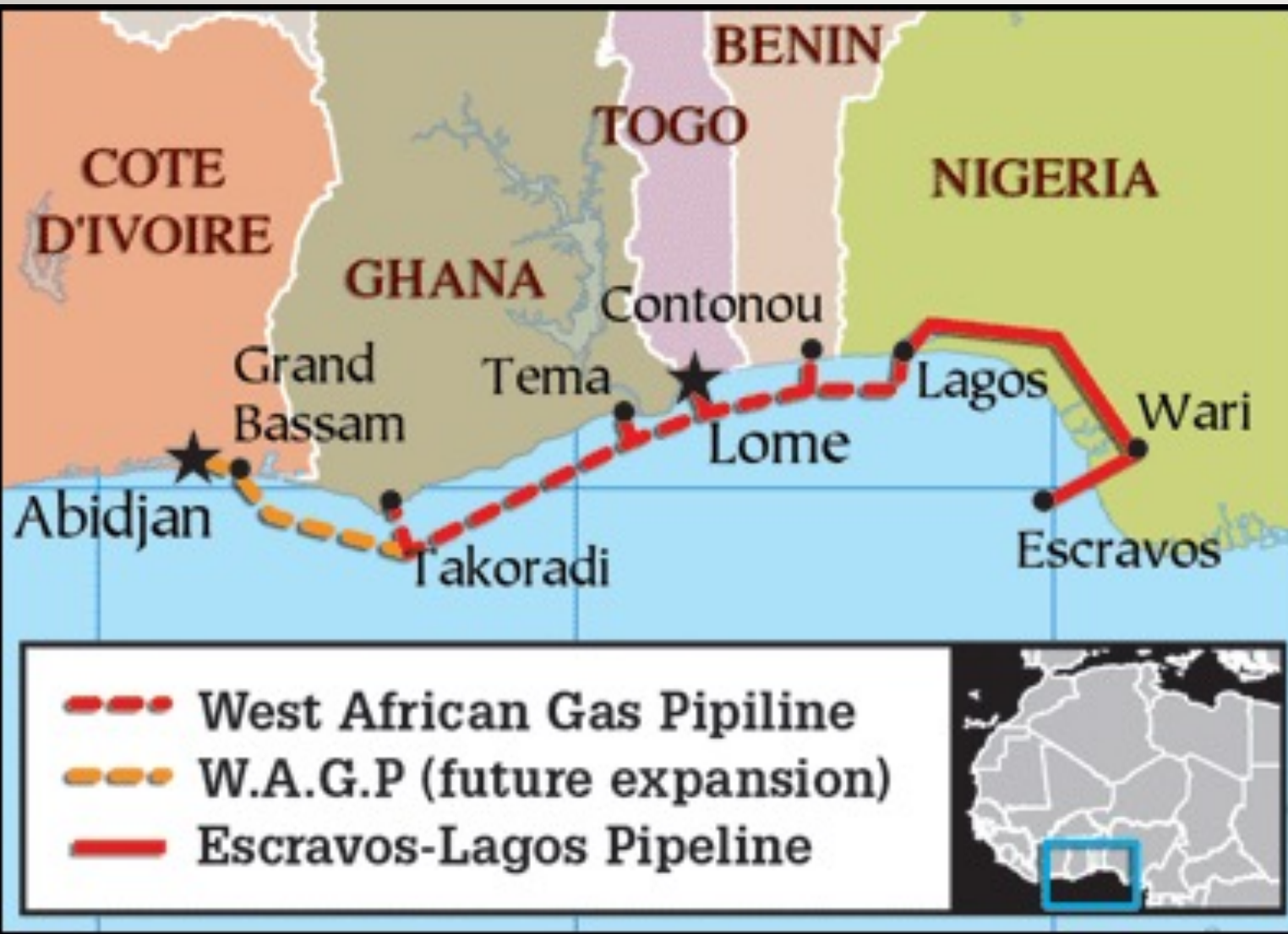
### DIVISIONS

Transport, storage, entry/delivery operations, quality control of product and maintenance of installations are carried out by the **Divisions** under the authority of **CEPMA**.

There are five **Divisions**: one in Belgium, one in France, two in Germany, one in The Netherlands.



## WEST AFRICAN GAS PIPELINE



The West African Gas Pipeline is a natural gas pipeline to supply gas from Nigeria's Escravos region of the Niger Delta area to Benin, Togo and Ghana. It is the first regional natural gas transmission system in sub-Saharan Africa. In 2008, construction was completed and gas introduced into pipeline.

- **Owner:** West African Gas Pipeline Company Limited
- **Length:** 678 km (421 mi)
- **General direction:** east–west
- **Diameter:** 20 in (508 mm)
- **Operator:** [Chevron](#)