

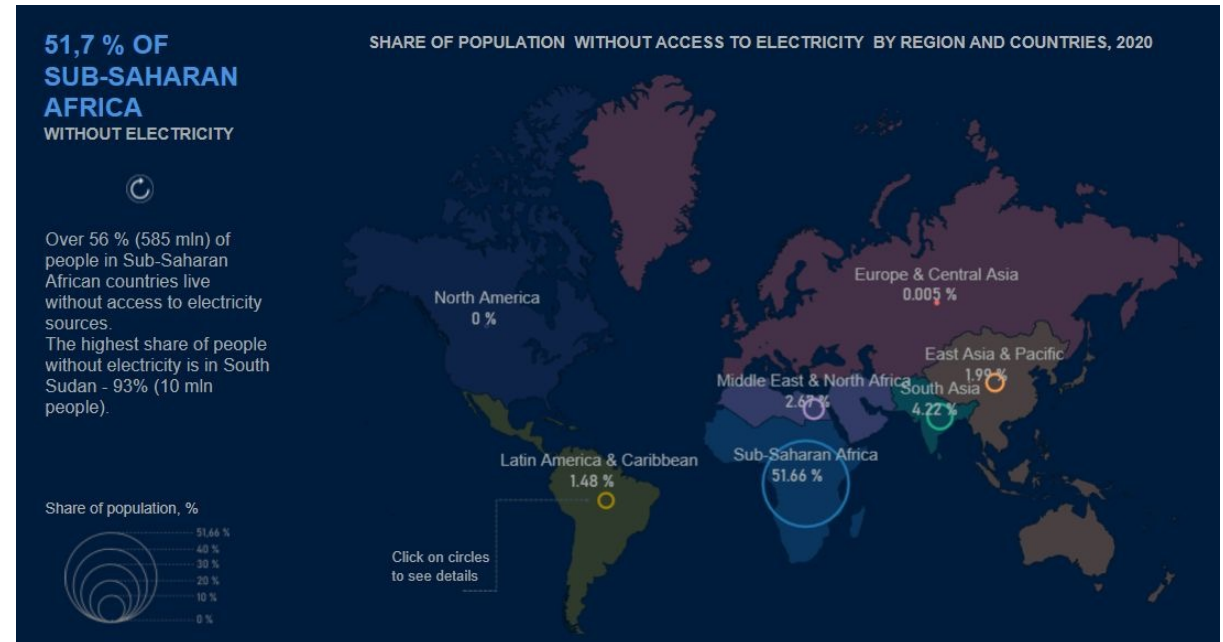
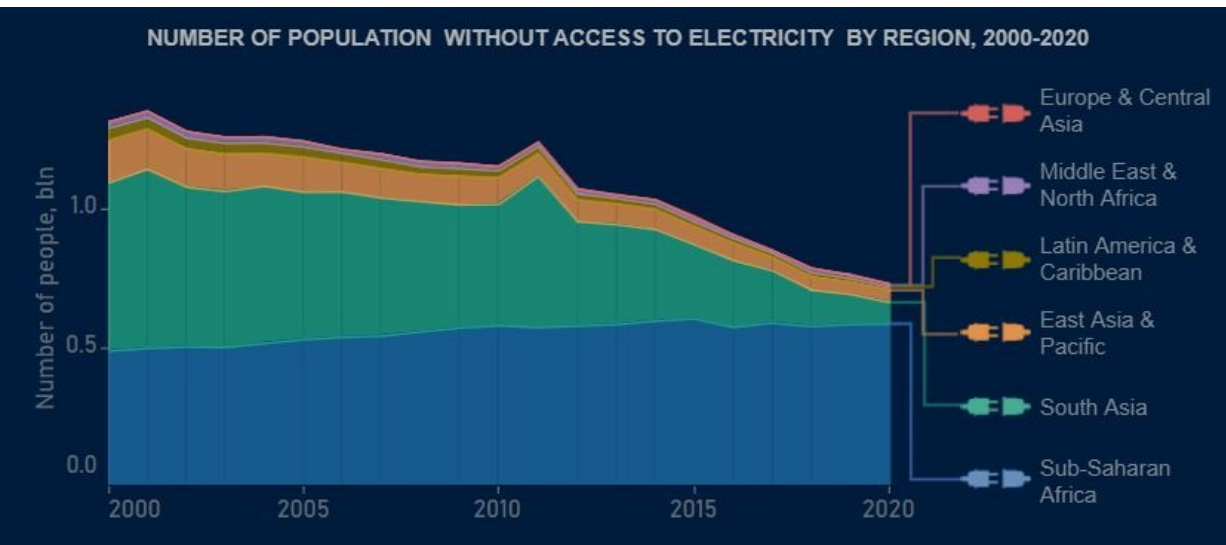


# Rejuvenating marginal fields with new unconventional development

Dr. Ahmed Ouenes

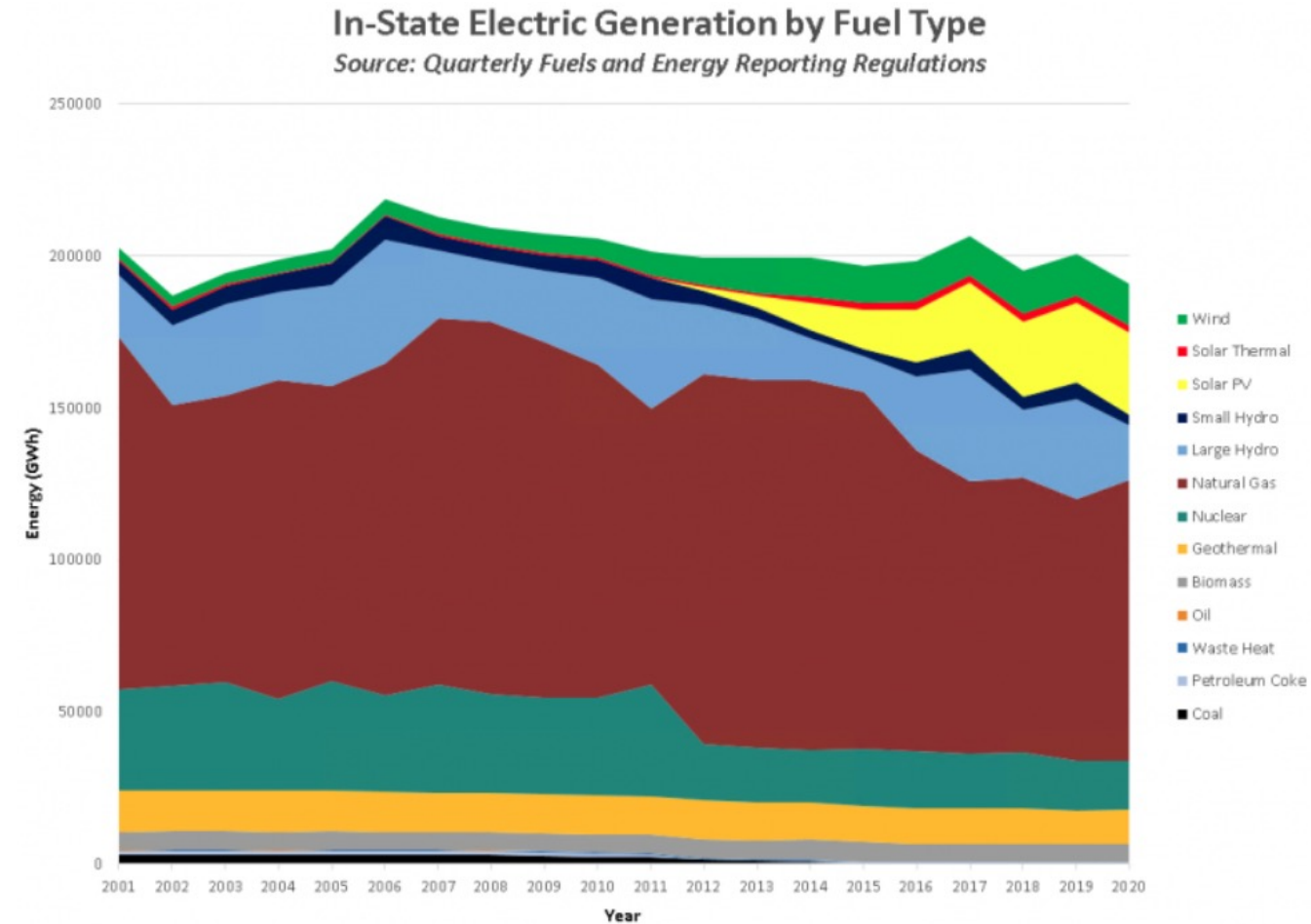
# Energy Transition has been going on for 150 years, BUT... Africa still has no electricity

- Coal replaced wood
- Oil replaced coal
- Gas replaced oil
- But Africa still does not have electricity



- Africa contributes about **3%** to greenhouse gas
- Congo Basin absorbs yearly about 1.5 billions tons of CO<sub>2</sub> which is about **4%** of worldwide emissions of greenhouse gases

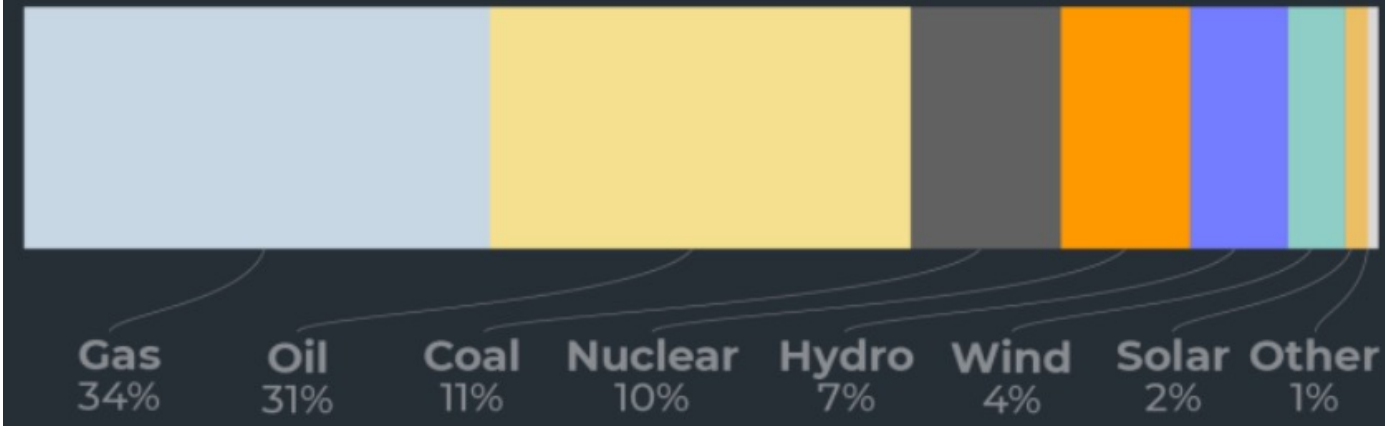
# Energy Transition Needs Gas to Produce Electricity .... Even in California



Half of California electricity is generated by natural gas

# Europe needs gas also BUT... most bankers decided otherwise

## How much of Europe's energy comes from gas?



The Glasgow Financial Alliance for Net Zero, (GFANZ), prevent new loans to oil and natural gas firms and to force loans to subsidize electric vehicles (EVs) and battery manufacturers.

JPMorgan CEO Jamie Dimon: 'Why can't we get it through our thick skulls?' America boosting oil and gas production is 'not against' climate change

AUG 14, 2022, 21:46



# Reality Check in Q3 2022 and new Energy Policies

**Bloomberg**

Africa Edition ▾

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Green

## China Won't Rush Its Clean Energy Transformation, Xi Says

- China has invested more than any other country in clean energy
- Xi makes clear coal and renewables will have to work in tandem

By Bloomberg News  
October 17, 2022 at 4:23 AM GMT+2

President Xi Jinping has promised a slow and steady end to the growth of planet-warming emissions in China, with energy security taking top priority as the country contends with a flagging economy and tumult on global fuel markets.

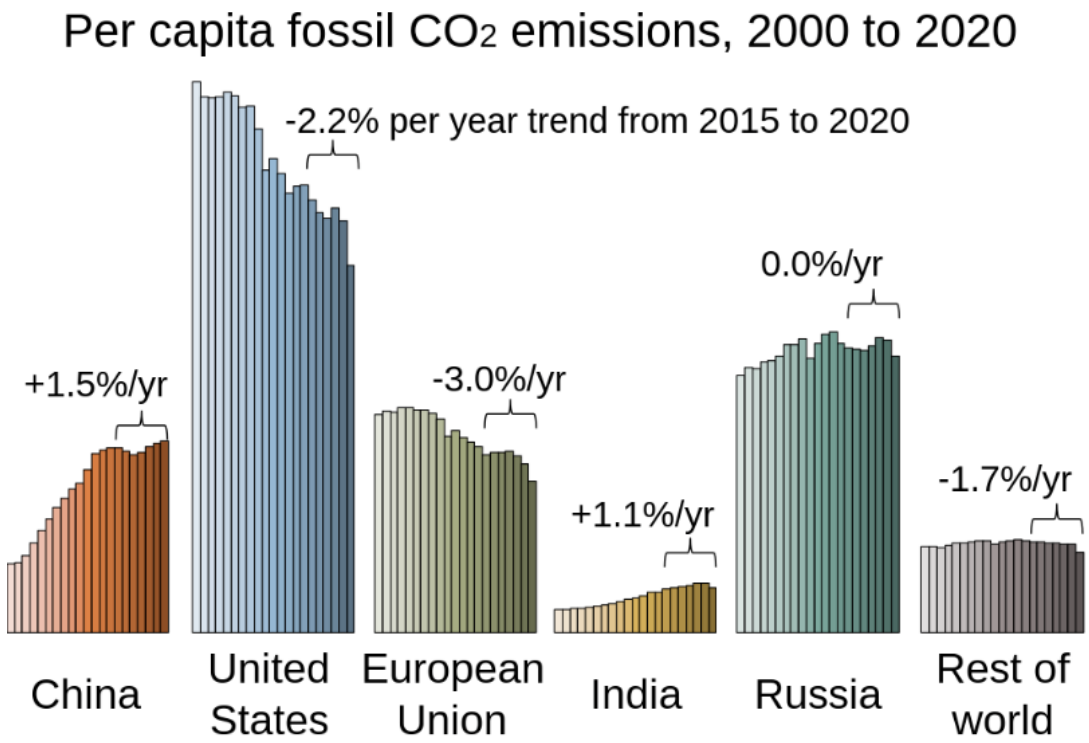
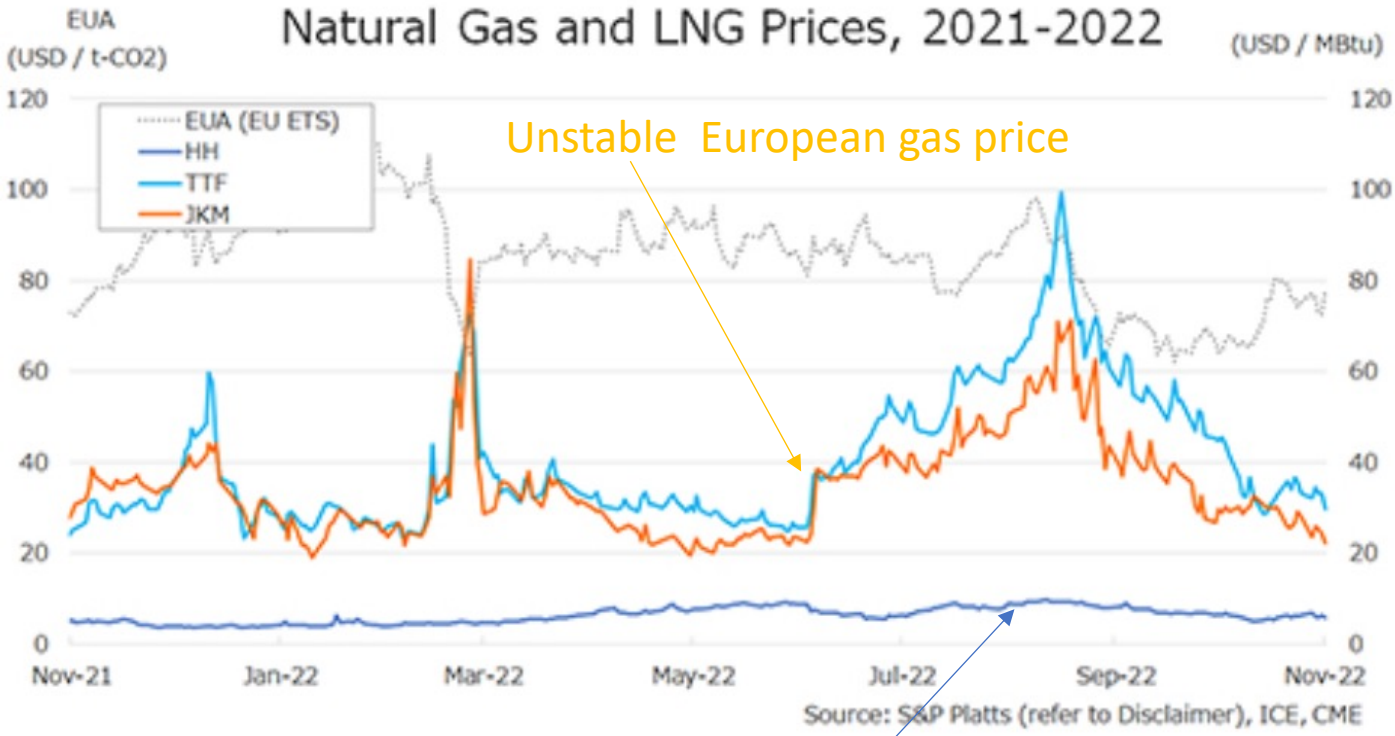
Xi's speech made China's path to decarbonization clear: It won't stop burning fossil fuels until it's confident that clean energy can reliably replace them. The speech shows more emphasis on energy security and the significant role of coal in China's energy supply given the resources endowment, said Qin Yan, lead analyst with Refinitiv.

## U.S. Energy Envoy Calls For More Investment In Oil And Gas

By [Tsvetana Paraskova](#) - Oct 31, 2022, 7:21 AM CDT

- ▶ At the ADIPEC energy conference in Abu Dhabi, the Senior Advisor for Energy Security in the U.S. called for more oil and gas investment.

# A large gas reserve → stable gas price → Consistent reduction in CO2 emissions



# Where new reserves can be found ? Under our feet in marginal fields

George Mitchell and his team spent 15 years to find 'new' sources of natural gas under his feet to replace the company's depleting reserves of natural gas produced from fields becoming marginal not able to honor his obligation to supply Natural Gas Pipeline Co.

1996-1998 Barnett Shale finally produces and increases US gas reserves dramatically

*The Barnett Shale Play: The Phoenix of the Fort Worth Basin. A History.*



Salt Creek Oil Field as seen from 40 Mile Hill, 1923. (Amoco Collection, Casper College Western History Center)

2022 : Wyoming new boom in Frontier sand

Powder River basin

# Unconventional technologies to bring new reserves from undeveloped reservoirs in Congo marginal fields

- Most marginal fields have one or multiple undeveloped reservoirs that can be produced with unconventional technologies
- Hydraulic fracturing and other unconventional technologies could unlock the new reserves from tight sands and shale reservoirs
- For example, some marginal fields in Congo Coastal basin have Mengo and Djeno reservoirs that could benefit from this strategy



# Successful Strategies for developing Unconventionals in Congo

- Avoid repeating mistakes made by early US companies
- Get unconventional experts to help you succeed from day one instead of repeating the trial-and-error approach that cost the USA \$112 billions gone to waste
- Make sure you have the right pumping equipment
- Make sure you are using the right proppant and chemical products that are compatible with Congo complex geology



# Most Powerful Fracing Equipment in Congo for Successful Unconventional Development

## OFFSHORE



Halliburton Stim Star Angola : 8250 HP

## ONSHORE



Olive Energy Zeyt#3 frac spreads : 12 000 HP



# An example of a marginal field

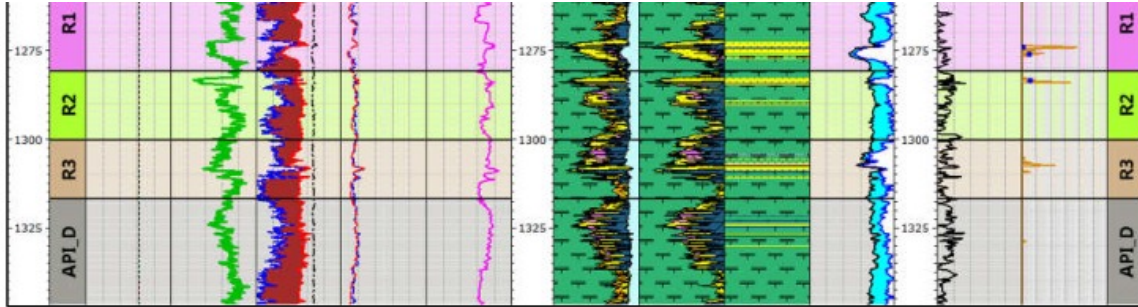
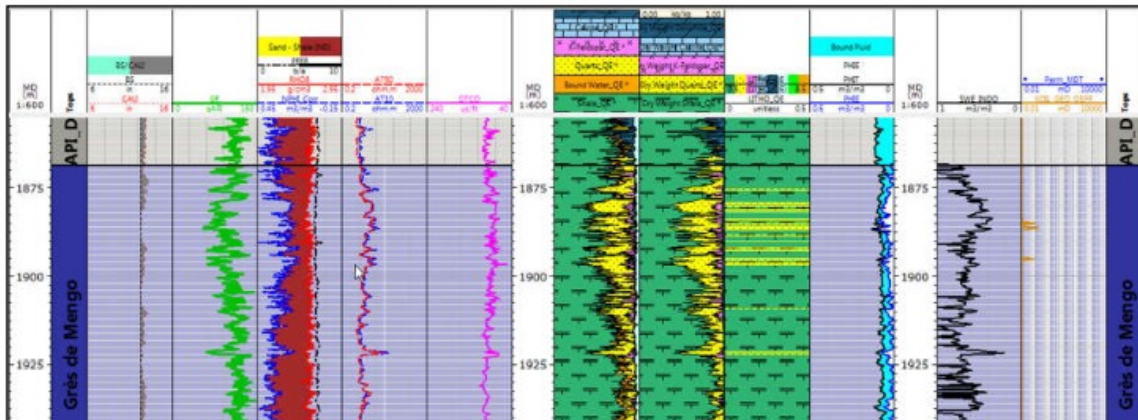


Figure 7 & 8: Petrophysical interpretation

Marginal field producing less than 100 bbl/day from conventional R1/R2/R3 reservoirs



Tight Mengo encountered in 2 existing wells

Olive Energy and its partner SNPC have successfully drilled and produced during 2021 and 2022 multiple wells that have an initial IP from Mengo reservoirs much higher than the current production in this marginal field

# Merci

