The sub-Saharan context

- GDP is rising, but almost half of a fast-growing population lives in extreme poverty: energy is vital to the prospects for development

- Region accounts for 13% of global population, but only 4% of its energy demand: half of this is biomass

- Poor electricity infrastructure is a key impediment to growth

- Large resource base, exploited only in part in the case of oil, gas & coal, largely untouched in renewables

- Domestic energy reforms gaining speed, but two-thirds of energy investment since 2000 went to develop resources for export
In the last 5 years, almost 30% of global oil & discoveries were in sub-Saharan Africa; the region has vast untapped renewables potential, notably hydro & solar.
In sub-Saharan Africa, 620 million people – two-thirds of the population – live without electricity. Only a handful of countries have electrification rates above 50%.
Biomass remains at the centre of the sub-Saharan energy mix

Reliance on fuelwood and charcoal remains high, even as incomes grow; 650 million people still cook with biomass in an inefficient & hazardous way in 2040.
Installed power generation capacity by fuel in sub-Saharan Africa

2012 capacity: 90 GW
- Coal: 45%
- Gas: 14%
- Oil: 17%
- Nuclear: 2%
- Hydro: 22%
- Other renewables: 0%

2040 capacity: 380 GW
- Coal: 22%
- Gas: 25%
- Oil: 7%
- Hydro: 24%
- Solar: 12%
- Nuclear: 2%
- Bioenergy, wind, geothermal: 8%

Renewables account for almost half the growth in overall power supply & for two-thirds of the mini-grid and off-grid systems installed in rural areas.
Different paths to power across the continent

The power mix by subregion reflects local resource endowments; well-functioning regional power pools help to unlock new projects, lower costs & improve reliability
Minor cause, but major effect

Cumulative CO₂ emissions, 1890-2012

Sub-Saharan Africa is on the front line to feel the effects of a changing climate but, even with an extra 25 Gt to 2040, accounts for only a marginal share of emissions
A changing balance to oil production

Oil production in sub-Saharan Africa

The region remains a major global supplier, although regulatory uncertainty, unrest & oil theft in Nigeria make Angola the main producer of crude oil until the 2020s.

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A new global gas player

Increase in gas production in selected countries and regions, 2012-2040

LNG export is the anchor for the east coast gas discoveries, but half of the overall increase in gas output goes to domestic power generation & industry.
Sub-Saharan Africa turns to Asia

Export destinations for all fossil fuels switch towards Asia-Pacific markets: gas & coal volumes rise, but oil exports tail off as more crude is refined within the region
In a reversal of current trends, 2 out of 3 future investment dollars produce energy for sub-Saharan consumers, but this is still not enough to meet their needs in full.
A large step towards universal access, but still a long way to go

Access to electricity in sub-Saharan Africa

Nearly 1 billion people gain access to electricity, but this still leaves 530 million, primarily in rural communities, without power in 2040
How could energy make the 21st an African Century?

- Energy could do more to act as an engine of inclusive economic and social growth
- An African Century Case assesses the impact of faster movement in three key areas:
  - An upgraded power sector; reducing power outages by half & achieving universal access in urban areas
  - Deeper regional co-operation; expanding markets & unlocking a greater share of the continent’s hydropower potential
  - Better management of resources & revenues; more efficiency & transparency in financing essential infrastructure
Energy can build a shorter path to prosperity

Outcomes in the African Century Case, 2040

By increasing the coverage & reliability of energy supply, the African Century Case unlocks an extra decade’s worth of growth in per-capita incomes by 2040
Conclusions

- Energy is a cornerstone of sub-Saharan strategies for poverty reduction & economic growth

- Improvements in sector governance are needed to bring in new energy investors & kick-start development

- More efficient & sustainable use of biomass will create a more healthy domestic energy balance

- Sub-Saharan Africa remains a mainstay of global oil production & emerges as a major player in natural gas

- Concerted action to improve the functioning of the energy sector is essential if the 21st is to become an African century.