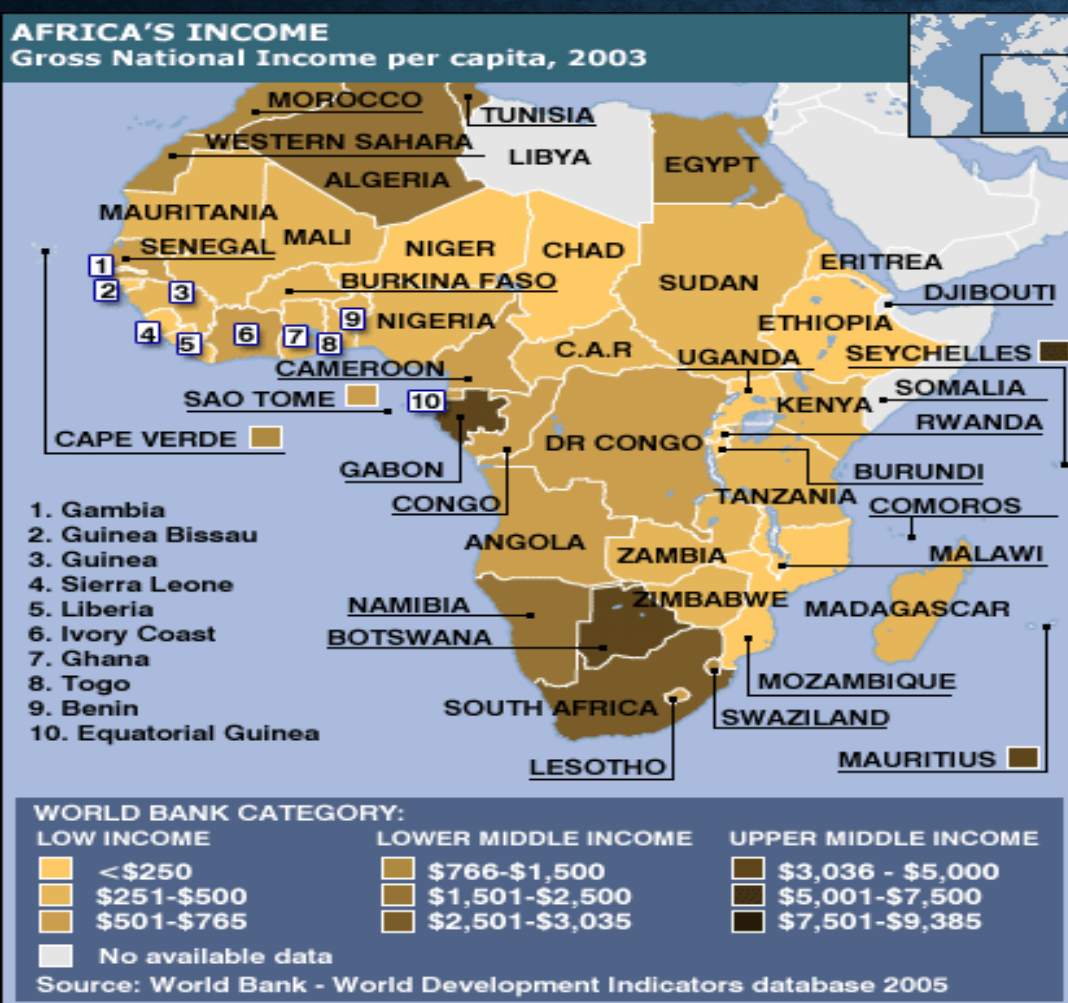


SOLAR ENERGY AND AFRICA ECONOMICS



Presentation by Abdoulaye Diallo

THE NEED FOR ELECTRIC POWER



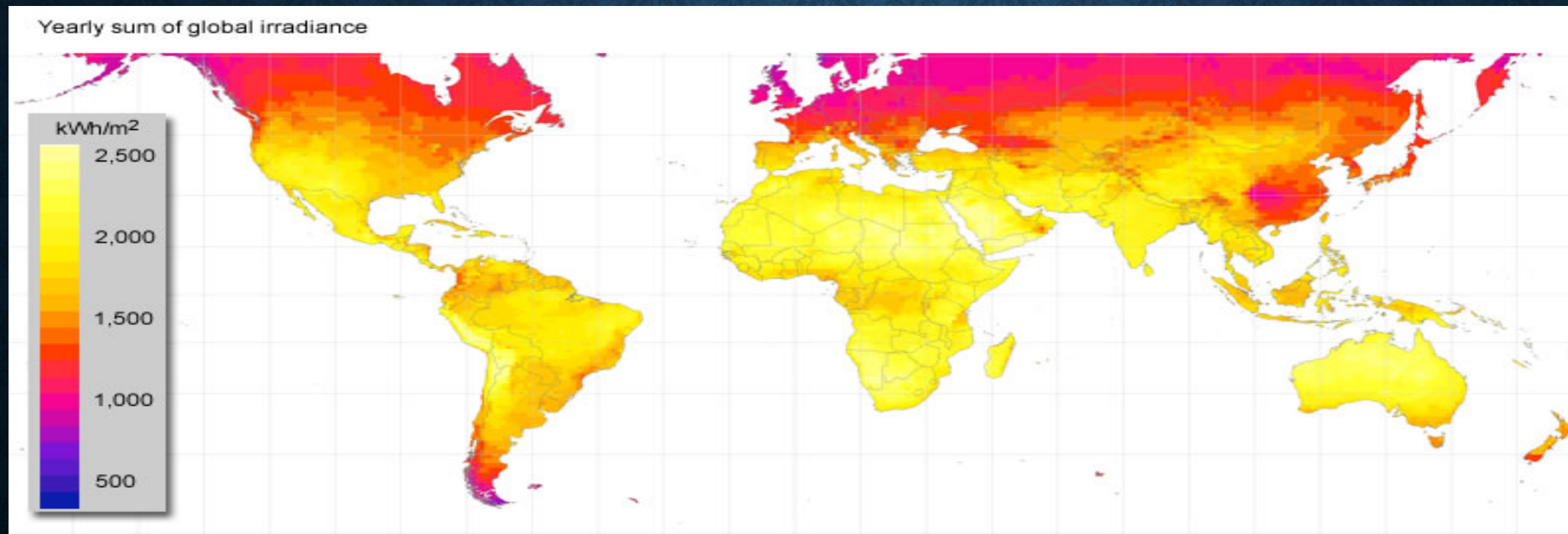
- Shortcomings in the power sector threaten Africa's long term economic growth and competitiveness.
- Today some 25 countries in sub-Saharan Africa are facing a crisis evidenced by rolling blackouts.
- Sub-Saharan Africa, More than 620 million people live without access to electricity



AFRICA AT A GLANCE

- **The continent of sunshine and heat**
- **The hottest homogeneously continent in the world**
- **Mostly very dry**
- **The sunniest countries and places on Earth lie on the African continent**
- **Dominated by clear skies**
- **The solar potential is huge (Solar has more than 11 terawatts of potential capacity)**

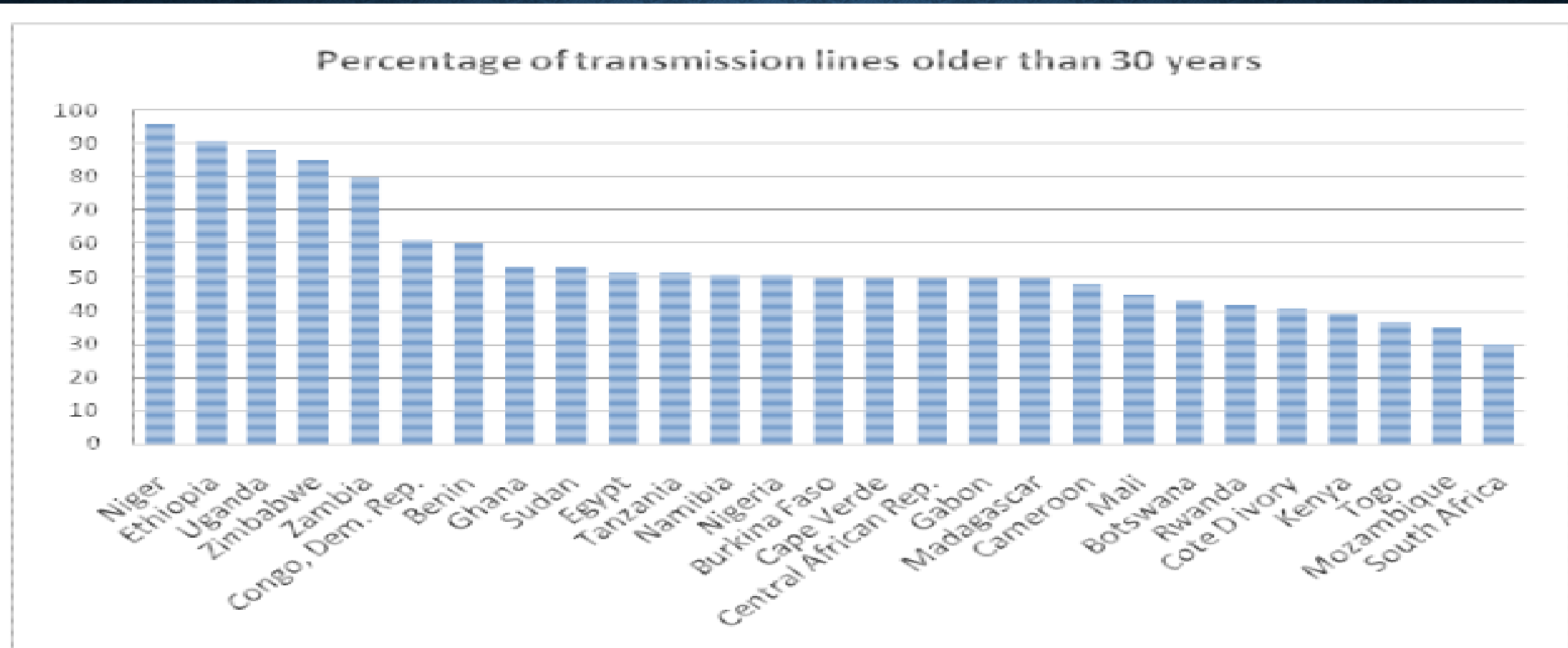
MAP OF YEARLY GLOBAL SOLAR IRRADIANCE



PROBLEMS ASSOCIATED WITH LACK OF POWER

- Almost one in four people live without power worldwide
- reduced GDP per capita
- lack of electricity or power is one of the largest barriers to overcoming poverty.
- Only \$7.5 billion of the \$162 billion available for green energy projects went to the poorest countries most in need of electricity.

POOR ELECTRIC GRID: OBSTACLE OR OPPORTUNITY ?



Source: "Data compiled from Africa's Infrastructure Infrastructure: A Time for Transformation," Agence Française de Développement and the International Bank for Reconstruction and Development / The World Bank, Washington, USA, 2010

KEY ISSUES IN AFRICA'S ENERGY SECTOR

- Low access and insufficient capacity
- Poor Reliability
- High costs
- Frequent blackouts

OPPORTUNITIES FOR SOLAR TECHNOLOGIES

- 1) Off-grid areas
- 2) Residential and commercial retail customers
- 3) Isolated grids
- 4) Peak capacity in growth markets
- 5) New, large-scale power plants
- 6) Solar water purification



NO BRAINER: BE SOLARPRENEUR IN AFRICA

- Potential solar power generation far exceeds electricity demand today and into the foreseeable future.
- Solar can also be an effective element in a broader suite of modern energy solutions, such as solar lanterns, ovens and water heaters.
- From their low base, solar photovoltaics (PV) and concentrating solar power (CSP) both see double-digit growth, collectively growing to account for 12% of total generation capacity and 6% of electricity supply in 2040.
- Solar panels are used in increasingly numbers to power telecommunications systems

THE ROLE OF THE DIFFERENT GOVERNMENTS



Nonexistent.

Except Morocco

MOROCCO: AN EXAMPLE TO FOLLOW



- world's largest concentrated solar power plant (30 square kilometer)
- store energy for nights and cloudy days.
- The African nation already hosts the Turfaya wind farm which, with 131 turbines, is the largest on the continent

SOLAR PANELS USAGE IN AFRICA



- Vaccine refrigeration systems
- Home lighting systems
- Water pumping systems
- 2 way radio power supply
- Repeater stations
- Schools/missions power systems and lighting
- Small businesses

CURRENT USES OF SOLAR ENERGY

- **Salt production**
- **Solar water heating and purification**
- **Solar fruit or crops drying**
- **Tobacco drying**
- **Cooking**

HOW SOLAR ENERGY CAN HELP THE ECONOMY

- Solar Creates Jobs
- Solar Power Reduces Energy Dependence
- Solar Power Saves Money
- Less investment during installation
- Power in remote areas

FINAL NOTES

- The countries of sub-Saharan Africa desperately want economic growth, and many people are frustrated by the lack of power. As we have noted, there is enough support, international attention, and focus to start making progress. Sub-Saharan Africa has vast electricity capacity. To tap those resources, national governments can focus on three areas:
 1. ensuring the financial viability of the power sector, creating
 2. an environment that will attract a broad range of funding
 3. mechanisms, and demonstrating real political will.

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