African Science Academy Initiative (ASADI) VI Conference

Somerset West, 9 November 2010

The state of energy access in Southern Africa

Is universal energy access by 2030 feasible?

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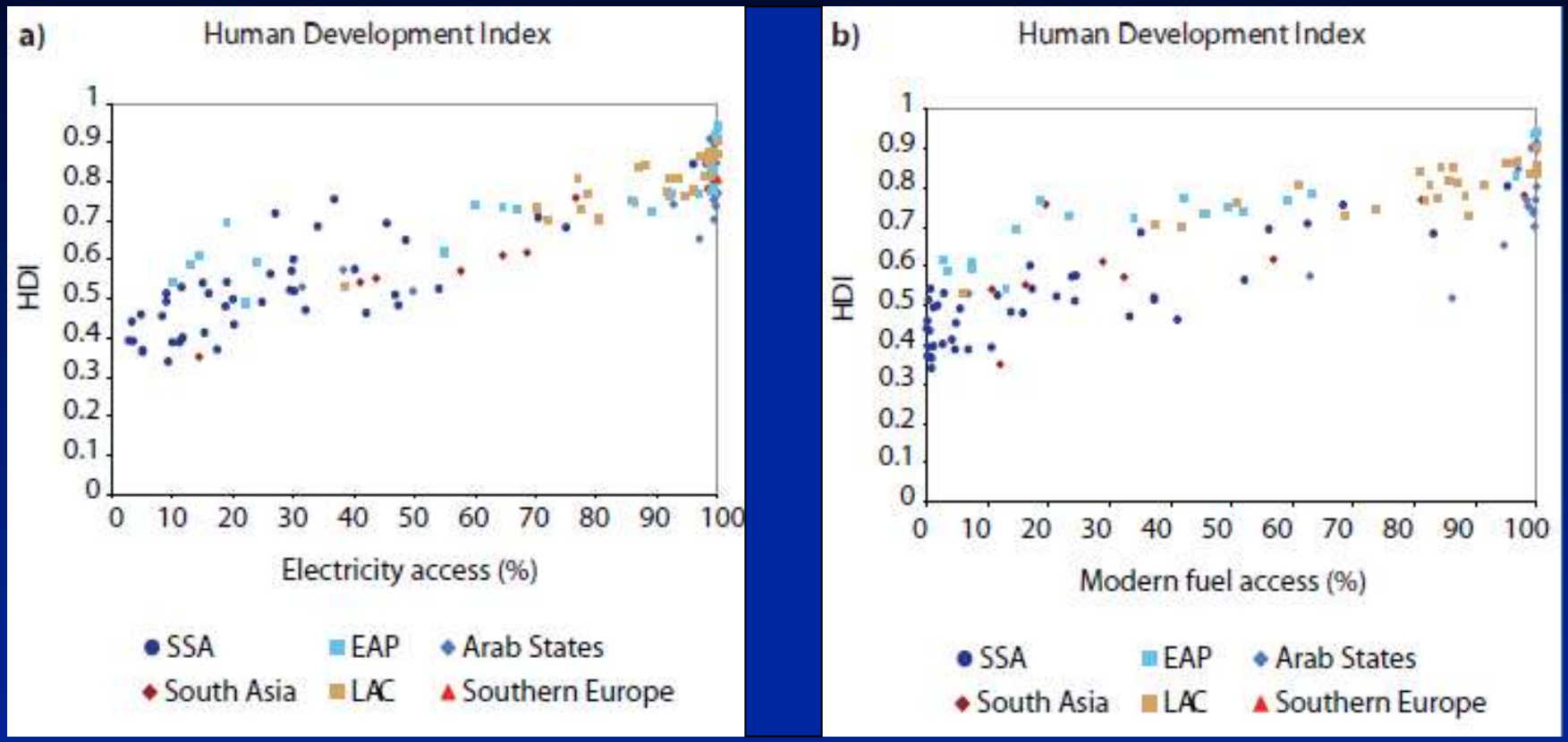
Introduction

- In sub-Saharan Africa 585 million people have no access to electricity and 653 million rely on the traditional use of biomass for cooking
- Out of these 89% live in rural areas and 46% in urban areas
- This lack of access to modern energy services entrenches poverty and has a negative impact on health and education and limits economic opportunities
- The MDGs cannot be achieved without access to modern energy services
- Worldwide more than 1.45 million people die prematurely from household air pollution due to inefficient combustion of solid fuels such as wood and charcoal.
- Extrapolating from the global figures about 360 000 people die every year from breathing smoke from biomass fires in sub-Saharan African households

Energy access and human development



Source: UNDP and WHO (2009)

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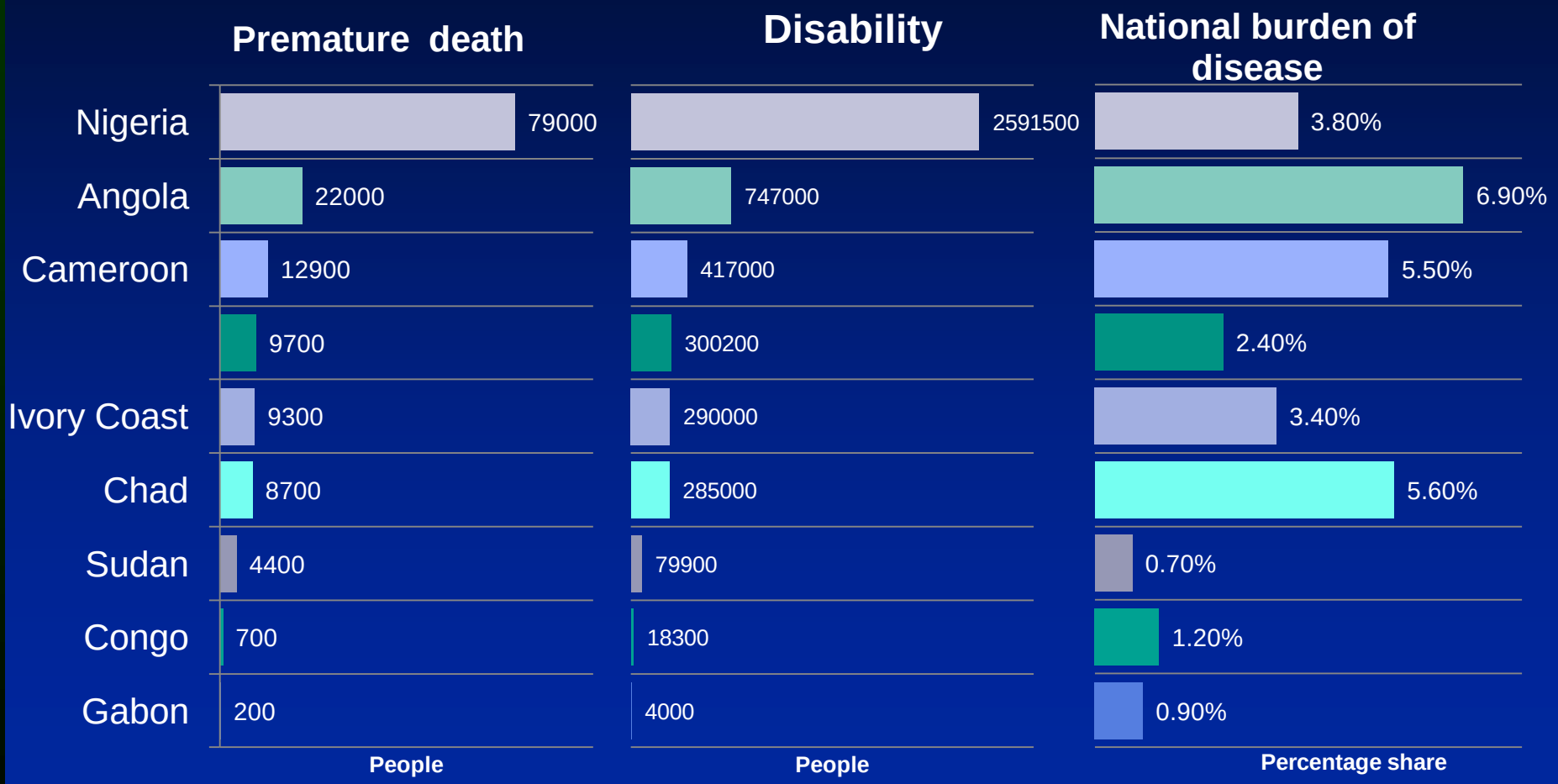
Health impact of solid biomass fuel use

Annual premature deaths, disability and share of total national burden of disease attributable to use of solid biomass

Source: IEA (2008)



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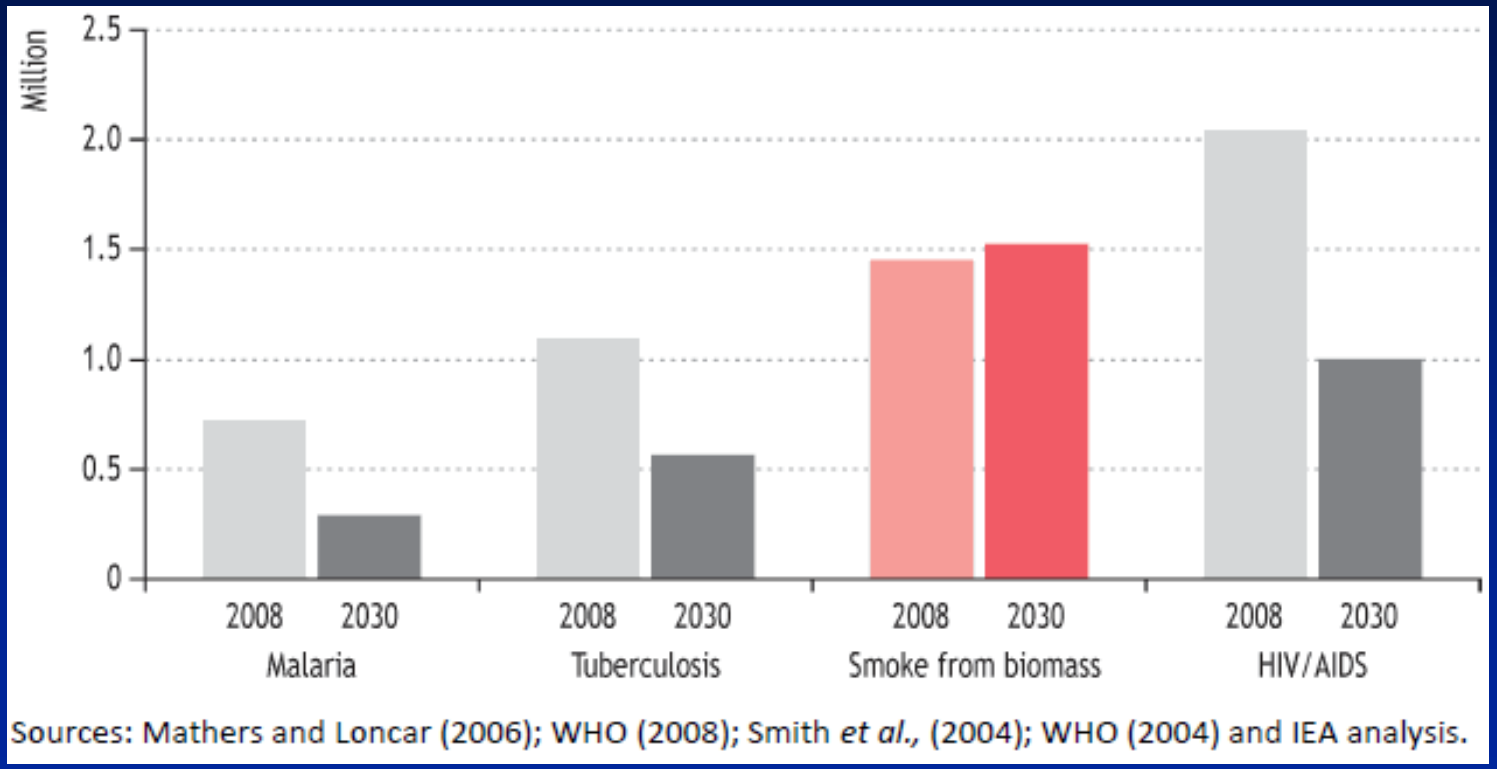
Health impact of solid biomass fuel use

Premature annual deaths from household air pollution and other diseases in 2008 and 2030



Sources: Mathers and Loncar (2006); WHO (2008); Smith *et al.*, (2004); WHO (2004) and IEA analysis.

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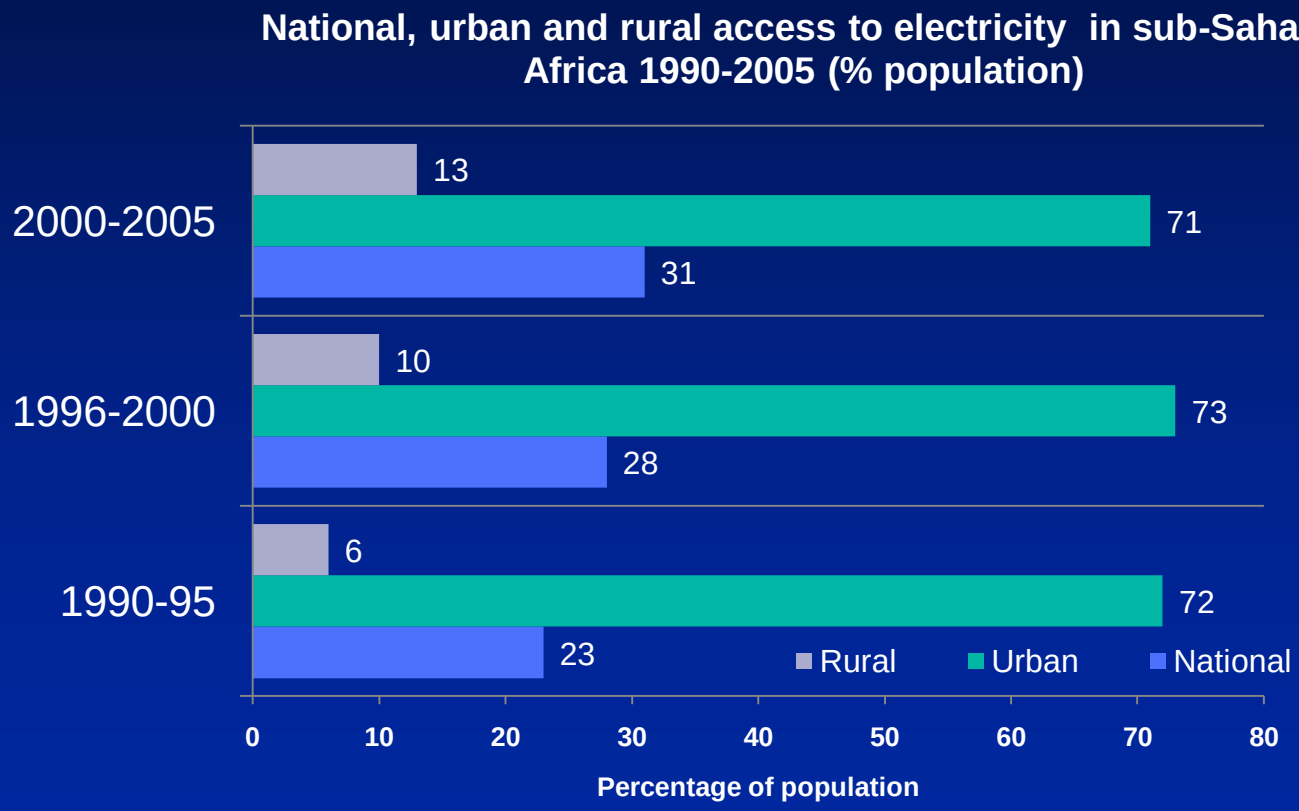
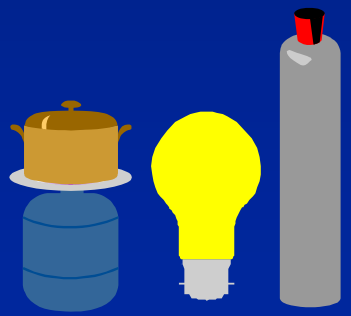
Access to modern energy services

Access to modern energy services - electricity and modern fuels - varies widely between different countries and within the same country



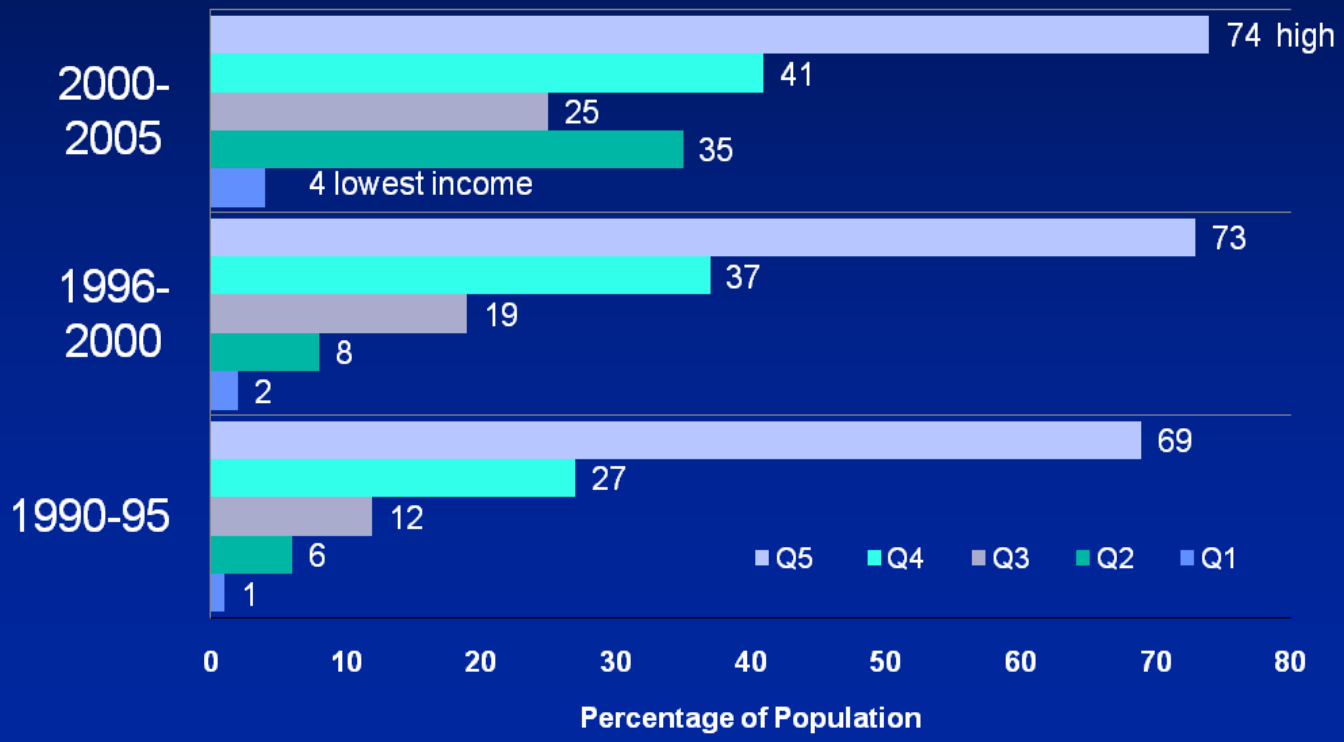


Access to modern energy services

The income divide is also very large. In the whole of sub-Saharan Africa only 4% of the poorest as compared to 74 % of the highest income group have access to electricity

Access to electricity in sub-Saharan Africa 1990-2005 by income quintile

Source: Banerji (2009)



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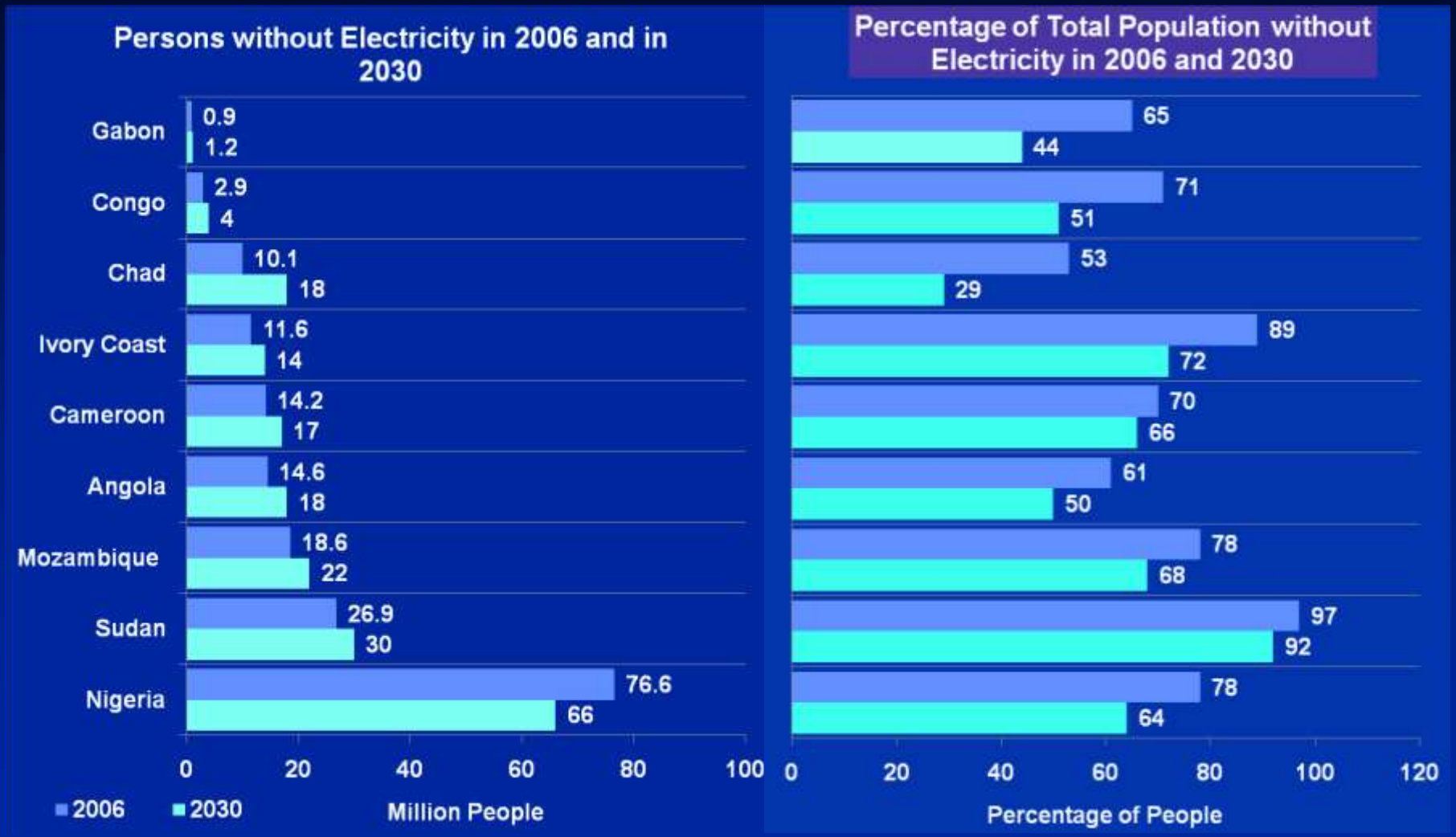
Changes over time

More people will be without electricity in 2030 than in 2006



Source: WHO (2007)

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Electricity access rates in Southern Africa

- Most Southern African countries mirror the situation in sub-Saharan Africa. The rural-urban divide is very large and in 6 countries less than 7% of the rural population have access to electricity. Also the high income groups have far greater access rates than the poor. At the same time 2 countries have achieved access rates of more than 75%.
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National electricity access rates in Southern Africa (%)

Source: UNDP and WHO (2009)

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Increasing access to electricity is feasible

- In Mauritius electrification has been a policy priority, even before independence in 1960. By 2000 the electricity utility had connected practically all households.
- The Botswana Power Corporation connects households on a cost recovery basis and rural customers can apply for loans for their electricity connections. When the upfront payment and the monthly repayments are small and extended over longer periods the uptake of connections increases significantly.
- In Zimbabwe the Rural Electrification Agency targets rural growth centres where local government infrastructure such as agricultural extension, health services, schools and police stations are concentrated. Local councils facilitate enterprise development and lease stands to medium and small enterprises which provide services including automotive, electrical, electronic and general repairs. This increases electricity demand.
- South Africa highly subsidises electricity connections and, under the National Electrification Programme access to electricity is affordable for the urban and rural poor. In addition the Free Basic Electricity tariff allocates 50 kWh per month free of charge to poor households.

Expanding access to modern fuels and improved stoves is also feasible (1)

- Access to modern fuels for cooking ranges widely in Southern Africa from less than 3% of the population in Malawi, Mozambique and Tanzania to 96% in Mauritius and 83% in South Africa
- Access to reliable modern energy services is required not only for cooking but also for entrepreneurial, agricultural and industrial development
- UNDP estimates that delivering modern energy cooking services - improved stoves, LPG and biogas – costs US$26 per person, or US$130 for a family of 5
- At the project level there are many success stories not only in Southern Africa but in all parts of Africa

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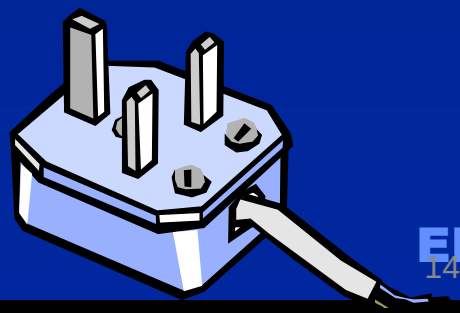
Expanding access to modern fuels and improved stoves is also feasible (2)

- Scaling up of
  - efficient cookstoves, charcoal kilns and other conversion devices is required as a priority
  - decentralised options for electricity: wind, biomass, microhydro, solar energy
- For the scaling up it is necessary to
  - mainstream energy issues into development planning at national and local level
  - mobilize finance for energy for productive end uses
  - develop national and local capacity to deliver energy for specific productive end uses to improve the livelihoods of the poor

The role of mechanical power

- Mechanical power has played an important role in the development of all industrialised countries but it is neglected in sub-Saharan Africa and does not receive the support it requires
  - Mechanical power improves productivity
  - Greater productivity in agro/food processing, water pumping and irrigation leads to economic development and better livelihoods
  - Access to mechanical power – diesel engines, windmills, microhydro, treadmills, electricity – can increase efficiency in production and raise the poor's income



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Energy access and climate change

- If the poor get access to modern energy emissions would increase negligibly and would be outweighed by the benefits in social welfare
- Energy access for poverty alleviation is an opportunity to use renewable and distributed energy sources and technologies with positive emission balances

Conclusions

- UNDP has advocated access to modern energy services for all by 2030
- The following has to be in place or has to be developed at the same time to successfully increase energy access for the millions of poor people in Africa who are left in the dark,
  - Political will
  - Good governance and leadership
  - Policies, strategies and regulations
  - Financial plans and finances
  - Availability of power or alternative energy
  - Capacity of the utility or other energy providers to implement
  - Increasing the poor's ability to pay for energy services

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