

Energy access and energy for poverty alleviation in Africa

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Summary

- Theory: development and access to modern energy services
- Methodology: evolution of the concepts
- History and impact of energy transitions
- Policy framework and implementation
- Key recommendations

Theory and development

- **MACRO POLITICAL and ECONOMIC MODEL** : Production and redistribution of wealth and governance are key drivers
- Theory and mathematical models (input-output table) and empirical facts (surveys) : **lack of access to modern energy services** is a major constraint to growth, development and ultimately to poverty alleviation.
- Limit to small scale **isolated** projects: high transaction costs, non sustainable

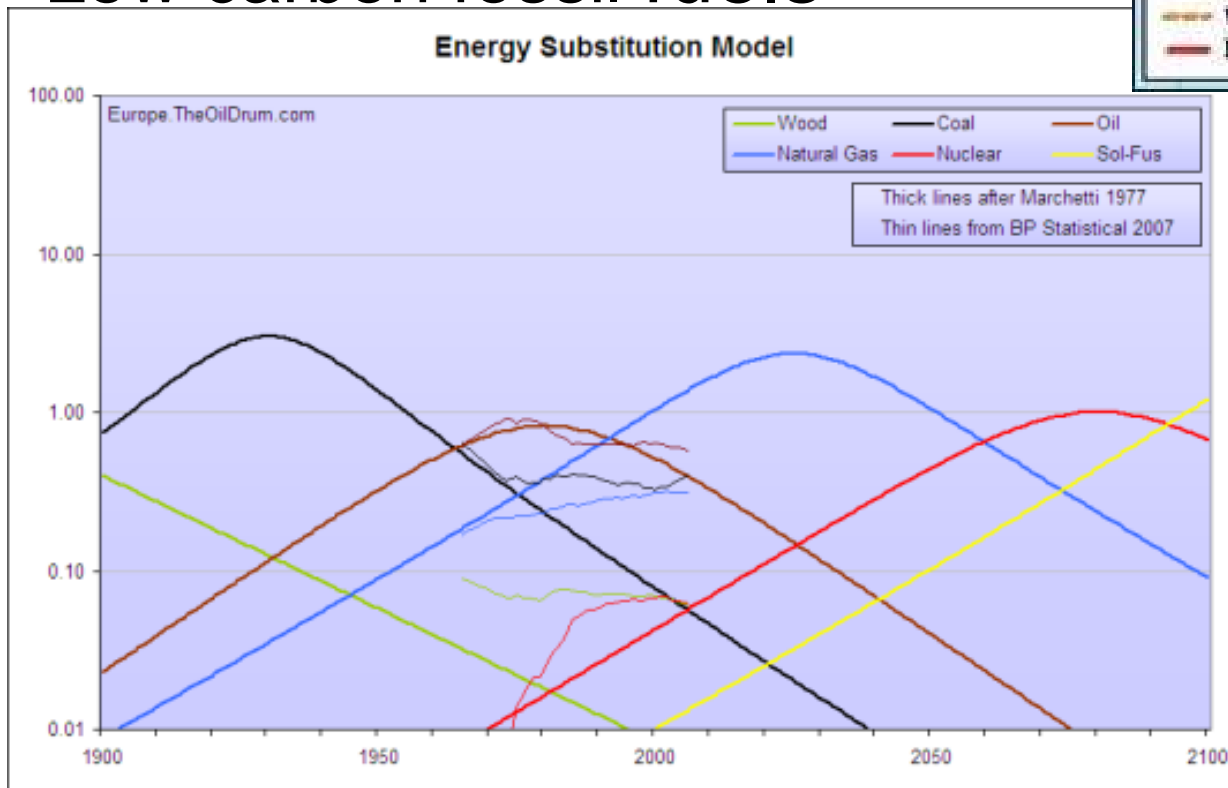
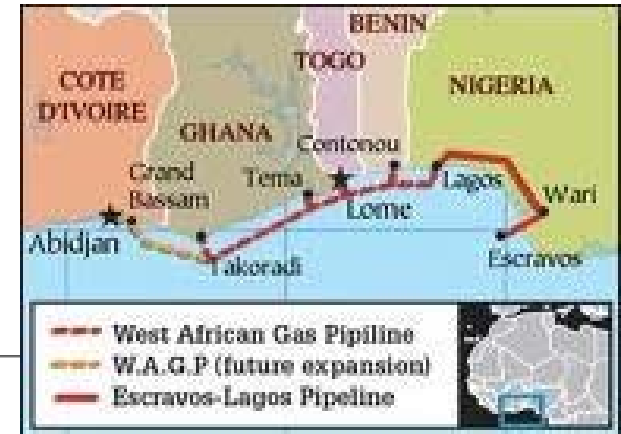
METHODOLOGY

- Measuring access to energy services and not only electricity
- Electricity per capita and Energy development index: Electrification index and modern fuels for cooking index

Countries	Africa	EDI value range	Elect consump. Index	Modern cooking I.
1-10	3	0.74-0.94	0.63-0.9	0.47-0.89
11-20	1	0.69	0.58	0.92
21-30	2	0.52-0.55	0.24-0.35	0.49-0.83

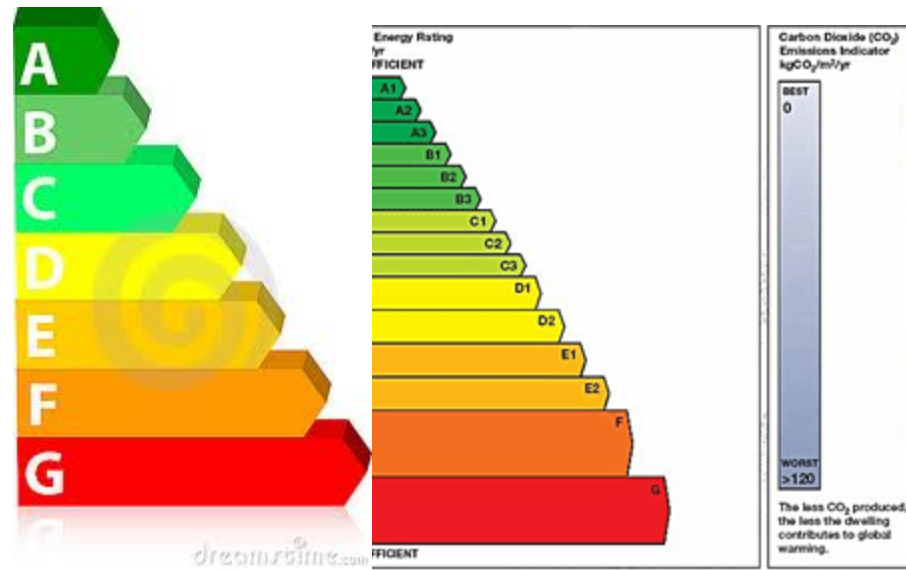
History of energy transition: : Trend towards low carbon energy paths

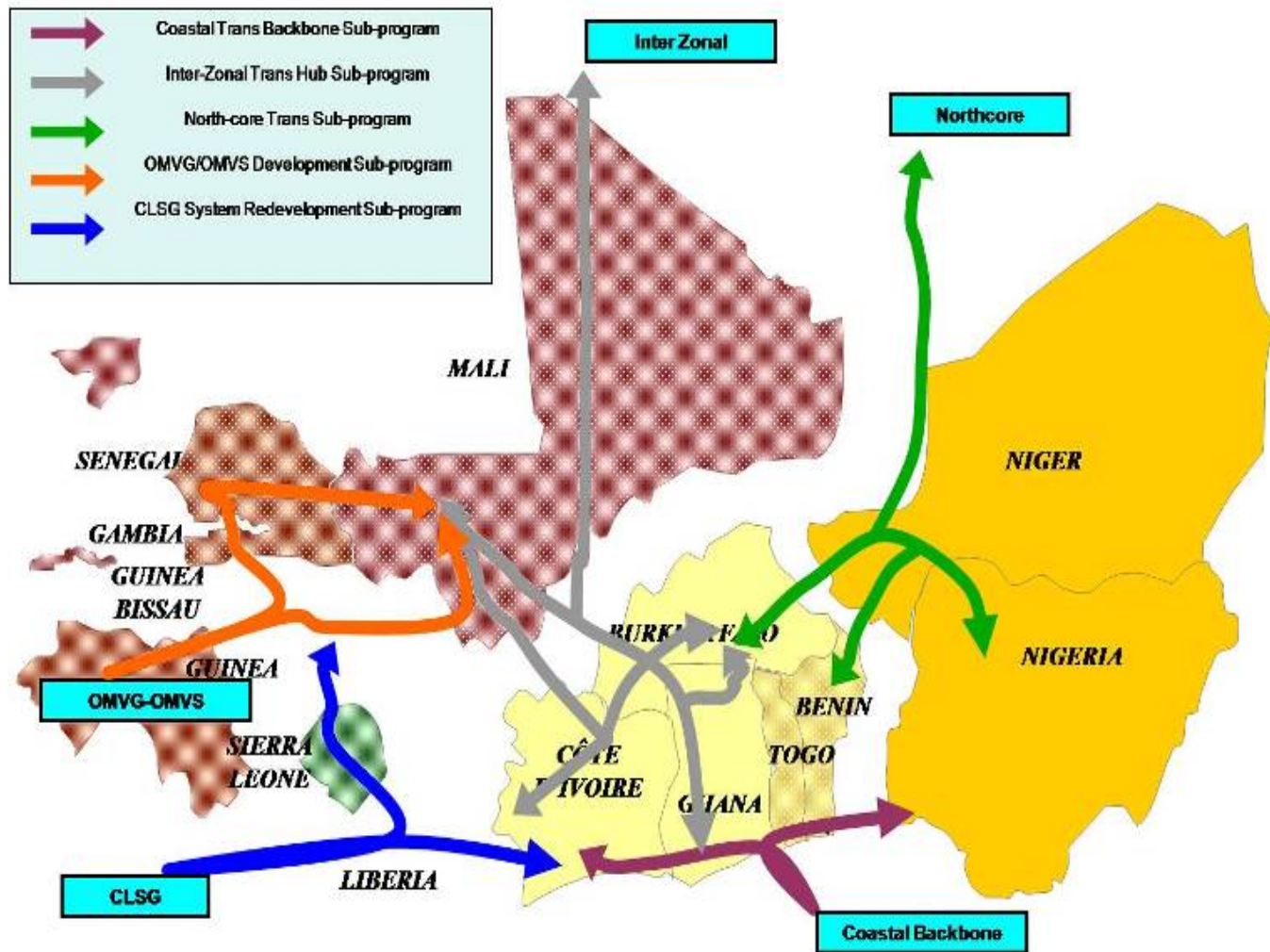
- Renewable energy
- Energy efficiency
- Low carbon fossil fuels



Policy framework and implementation

- Institutional and regulatory framework
 - Laws on renewable energy and energy efficiency:
 - Imports of electric appliances, vehicles : Trade offs between access and greenhouse gas emissions and energy consumption.
 - No obligation from the North : Recycling in the South unwanted items
 - Energy efficiency: buildings, power pools





West Africa Power Pool

Financial mechanisms on large scale

working models

- Households: Solar water heaters, PV solar roofs (selling to the grid) : deducted from the utility bill: visible impact
- Large power plants: CSP, hybrid and centralised PV (> 1 MW) Wind farms: concessional loans, PPP, BOT, access to carbon credit.
- Tariffs /subsidies, incentives: feed in tariffs : who will benefit?



Conditions for poverty alleviation: green industry and services

Internalising added value and jobs creation

- Industries with low technological and financial barriers (local manufacturers and installers)
- Large scale power plants: high barriers to entry
wind farms, CSP, concentrated PV

Strategies for gradual integration: towers for wind farms, PV assembly plants, mirrors assembly,

- Critical mass : regional cooperation



Recommendations

- Strategies to reducing energy poverty not only electricity: concept of EDI
- Conducive institutional framework and financial mechanisms
- Regional cooperation for critical mass for significant technology transfer and low carbon industries and related services
- Human capital : R&D strategy in partnership with leading universities and Research Centres
- Scientific data base by African institutions

Thank you

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