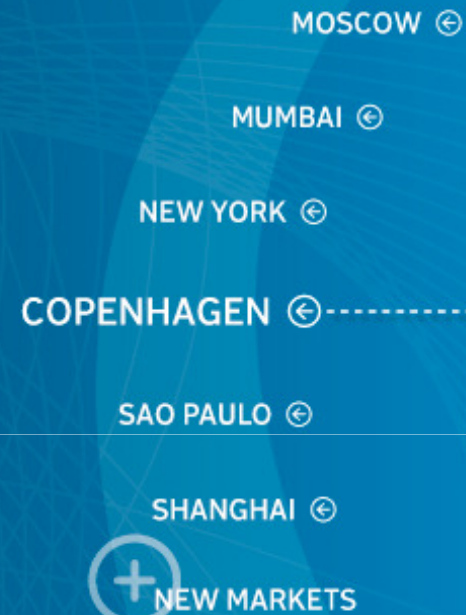




DIIS Conference

13. January 2009

Is There a Market for Danish
Companies in Low Carbon
Solutions for Low Income
Countries?





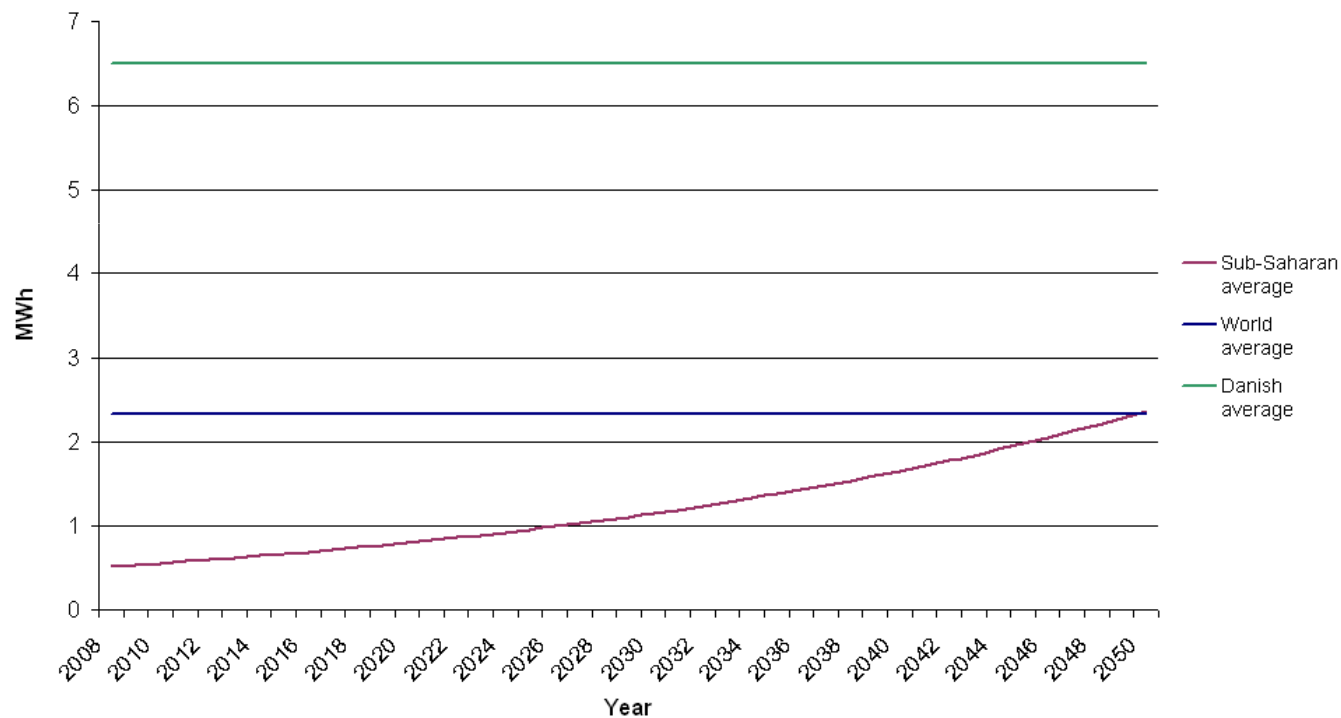
Background

- DI International Business Development (DIBD) is part of DI - the Confederation of Danish Industries
 - Business development consulting in emerging markets for 15 years (BRIC countries <-> Least Developed Countries)
 - Since 2008 developing CDM projects in Sub-Saharan Africa and working on establishing an investment fund for low carbon projects
 - 25 professionals in DK HQ + 25 in offices (Shanghai, Moscow, Mumbai, Sao Paulo)
-



Sub-Saharan Africa Power Consump.

Annual MWh / per capita forecasted with 2,36 % of yearly growth in population



28 GW of energy generation capacity



261 GW of energy generation capacity



Is there really a market in the Low Income Countries for Danish companies?

Yes !

despite many projects rather small
and difficult markets
and lack of financing

with CDM Carbon Credits
and with ODA mechanisms

goes hand in hand with poverty reduction
(energy to the poor)
(energy to productive sectors)
(improving health/environment)



Cut cost & import



Renewable Energy

- Wind power
- Biomass power/CHP
- Biogas power
- Landfill gas power
- Bio fuel (ethanol, diesel)
- Solar Energy (power, heating, cooling)
- Fuel cells
- Hydro power
- Wave power
- Geothermal energy

Energy Efficiency

- Energy-efficient power plants
- Energy-efficient cement factories
- Other industrial energy efficiency
- Efficient electric motors
- District heating, cooling
- Metering
- Building materials
- Pumps
- Ventilation
- BOP energy concepts

Companies:

- Manufacturers
- System/turnkey suppliers
- Construction companies
- Consulting engineers
- Investors

Leading 60 companies listed at:
www.di.dk/Virksomhed/Miljoe/Bright+Green/Aktiviteter/Publikation/





**A few examples from app.
60 identified projects in 4 Sub-Saharan countries
(not exhausted)**



Landfill

- Open waste landfill
- Receiving 500 MT waste per day
- Area covered 6 ha
- Gas for 1 MW
- Specific CDM potential
 - Closure and methane extraction
 - Power generation for grid
- Investment = 2-5m EUR / project





Sugar Factory

- Annual production 140.000 MT Raw sugar
- 8000 Ha own / 12000 out growers
- Current generating capacity 5-6 MV
- Possible to achieve 15-20 MW based on current bagasse
- CDM potential
 - Renewable grid electricity
- Investment size 40m EUR



babcock & wilcox vølund



Brewery

- 3 breweries - 1 under construction
- Production 300,000 HL x 4
- CDM potential
 - Methane extraction from waste water
 - Gas power production for own use
 - Cogen based on collected biomass
- Projects possible in several locations
- Investment 3m EUR / project





Sisal

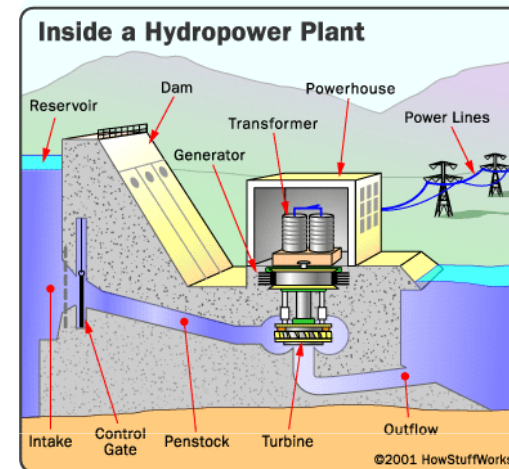
- Sisal fibre used in variety of products
- 10,000 Ha of Sisal
- 5 Sisal estates in two areas
- CDM potential
 - Extraction of methane from sisal waste
 - Power generation for own consumption and grid
- Investment 20m EUR





Wind & Hydro

- 3 mini hydro sites of 3-6 MW each
- 1 wind site of 50-100 MW
- Bundling wind and hydro = steady supply
- CDM potential
 - Renewable hydro and wind power to grid
- Investment size wind 200m EUR
- Investment size hydro 30m EUR



Vestas
No. 1 in Modern Energy



BOP Energy - Reaching the Poor

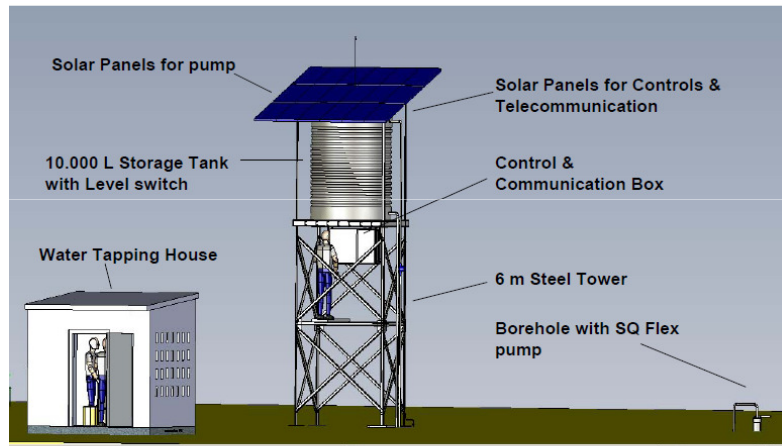
- Rural and city slum households / infrastructure
- Solar power + Solar water heating + Manure biogas + Improved stoves + Renewable stove fuel + Micro hydro + other
- Micro finance and carbon credits
- Local production of systems if possible
- Improve health and decrease children accidents both caused by open stoves
- CDM potential
 - Replacing kerosene, charcoal
 - Fuel efficiency
 - Programatic





Example of Danish a company's BOP approach

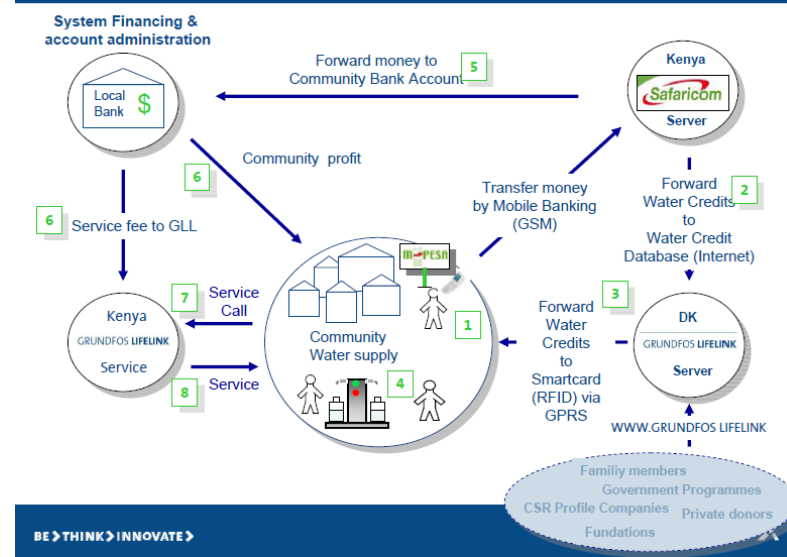
Automatic water system LIFELINK



BE > THINK > INNOVATE > GRUNDFOS



Business Model LIFELINK



BE > THINK > INNOVATE >



What's holding them back?

The non-active

- Prioritising large (BRIC) countries over Low Income Countries
- Limited knowledge of market opportunities in Low Income Countries
- Lacking knowledge of CDM mechanism and how to use
- Don't know CDM developers / too few Danish developers

The active

- Guaranties
- Inefficiency of local CDM office (DNA)
- Some countries poor/lack PPA, power distribution
- Support for project development
- Limited project debt financing
- Limited equity financing

Examples Danish ODA instruments

EKF new CDM guaranties

EKF, MIGA investment guaranties

UNEP Risoe DNA training

Grid emission factor calculations

Danida PPP BOP facility

Danida B2B facility

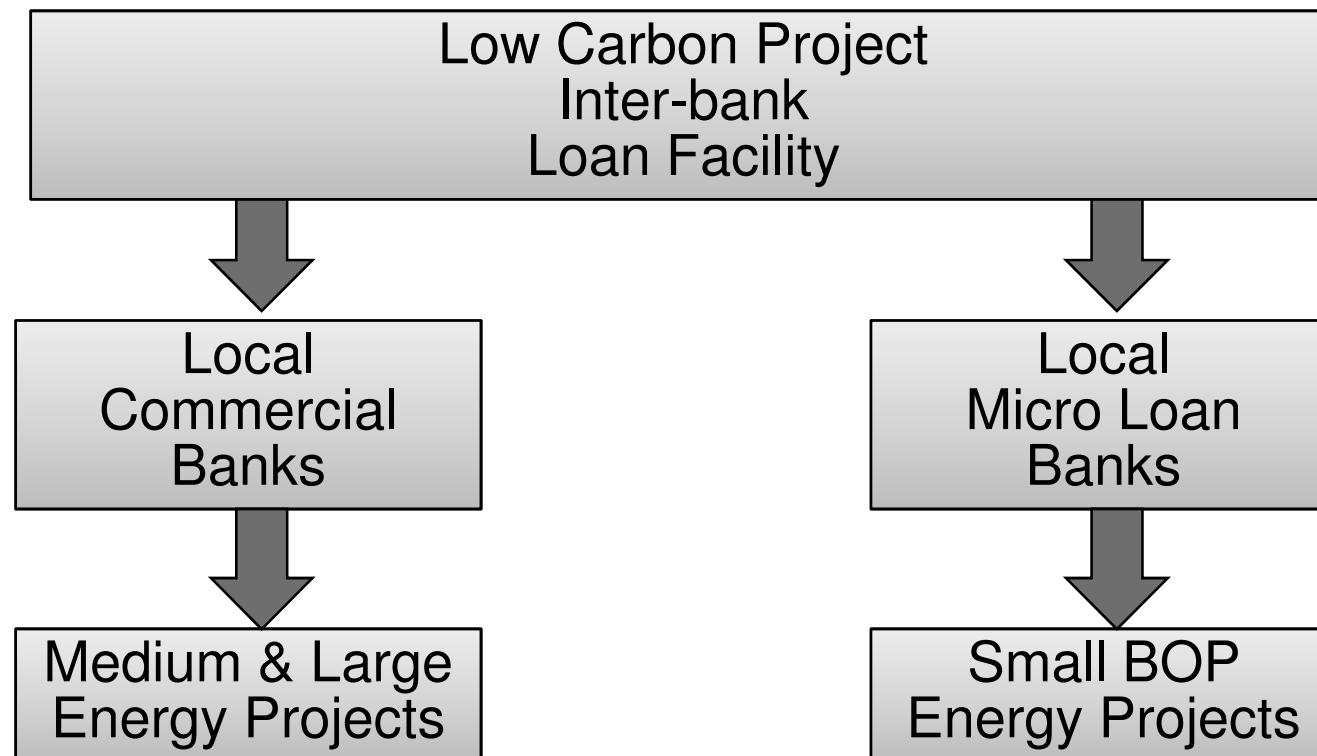
EKF export credit financing (limits!!!)

Will come with above



Idea for financing mechanism

(main problem is lack of long term inter-bank financing)



THANK YOU

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