

Renewable Energy in Namibia why not 100% ?

Economical and financial considerations in connection with a new way of thinking about Energy and value streams

for hon. Saara Kuugongelwa-Amadhila
Friday, January 27, 2012

and the Start-up Consultative Dialogue on
Climate Change from a Business Perspective

Monday, February 13, 2012

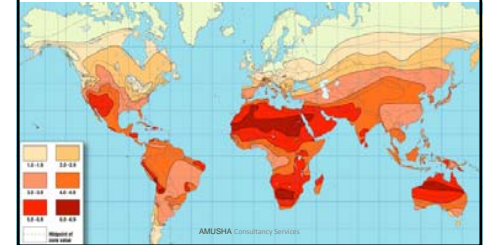
by
AMUSHA
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Adaptation <-> Mitigation

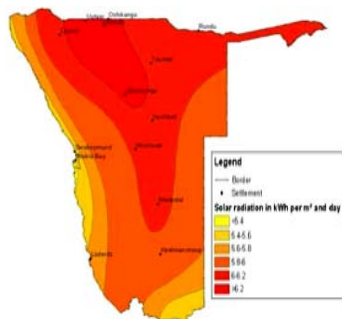
- Adaptation
 - something adapted to fit need
 - change to suit environment
 - diminishing sensory response
- Mitigation
 - lessen something
 - Modification
 - Qualification

Opportunities

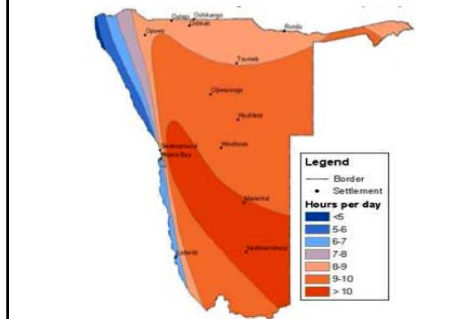
This solar radiation map shows the amount of solar energy in hours (peak sun hours), received each day on an optimally tilted surface during the worst month of the year. (Based on accumulated worldwide solar radiation data.)



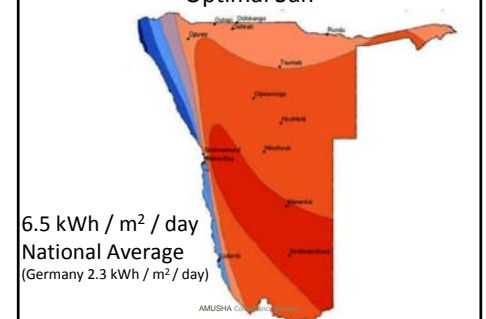
Sunshine kWh per m² per Day



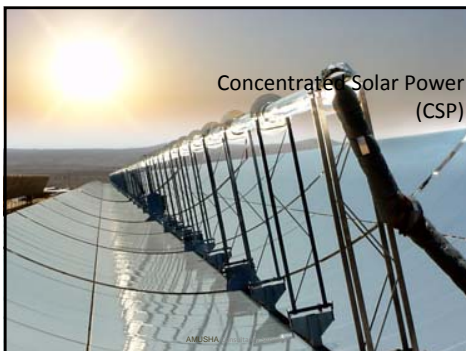
Average Direct Sunshine Hours per Day



Optimal Sun



Concentrate Solar Power (CSP)



354 MW of Opportunities

Functions efficiently since 20 years already ! Why not in Namibia ?

582 MW of CSP are located in *Spain*, and the US has 507 MW of capacity today.

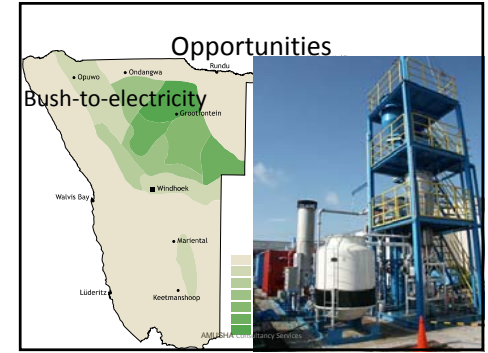
About 17'000 MW of CSP projects are under development worldwide, ...

Why not in Namibia ?

Opportunities

Concentrated Solar Power (CSP) Plants can solve most of Namibia's generation problem:

- Proven and tested technology
- Decentralised installation possible (Unit size 15 - 1500 MW)
- Powerful Namibian sunshine gives a lot of MW
 - Up to double the output from the same investment than elsewhere
- Energy can be stored in the form of heat
- Mariental can have 50 MW
- Keetmanshoop can have 50 MW
- M'tal, K'hoop and Lüderitz could trade Power with each other
- Lüderitz can have 80 MW WindPower
- Another 300 MW or more in other places mainly Karas, Hardap, Erongo, Omaheke, Otjozondjupa & Khomas
- All these MW will **create jobs in local manufacturing**



Opportunities

- Bush-to-electricity can
 - Produce >50 MW sustainably = > 10% of National Peak Demand
 - Produce Power on demand
 - Create up to 20'000 direct jobs in rural areas
 - Keep the money in the regions !!!
 - Increase cattle production
 - Create jobs in agriculture & meat industry
 - Create other secondary jobs
 - Increase exports
 - Improve National Cash Balance

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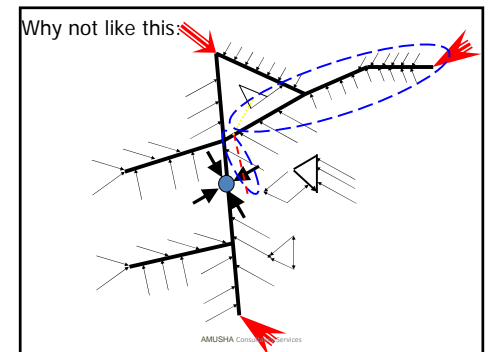
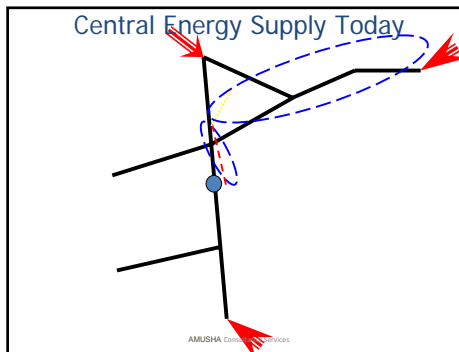
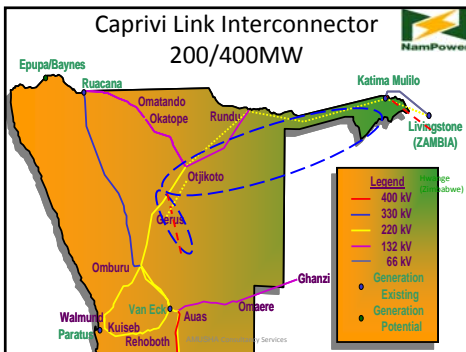
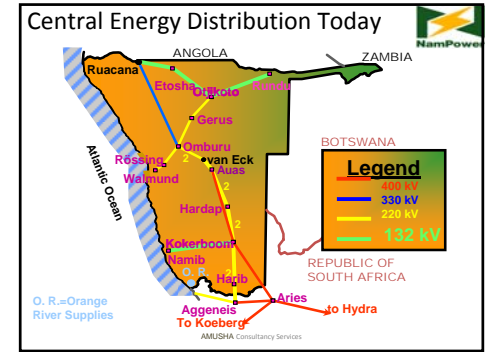
Opportunities

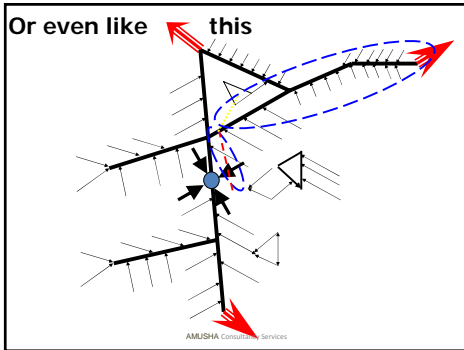
Stirling Motor
(can be manufactured
in Namibia, creating jobs)

Dish-Stirling technology.
30 to 50 kW per unit
No water needed
Must follow the sun precisely
Can use ANY source of heat:

- Sun
- Vegetable oil
- Gas
- Geothermal heat
- Wood
- Charcoal
- etc.

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why not ?

You may see things and say: "Why?" But I dream things that never were; and I say: "Why not?"

(George Bernhard Shaw)

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What do we need ?

- National independent power generation
- Long-term sustainable power supply at stable prices
- De-central generation and distribution of electricity
- Widespread rural electrification
- Stable and affordable prices.
- More money in the pockets of "ordinary" people
- More value addition in the country = **jobs**

What do we NOT need:

- A monopoly that controls 100% generation, bulk purchase and distribution.

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How to get there ?

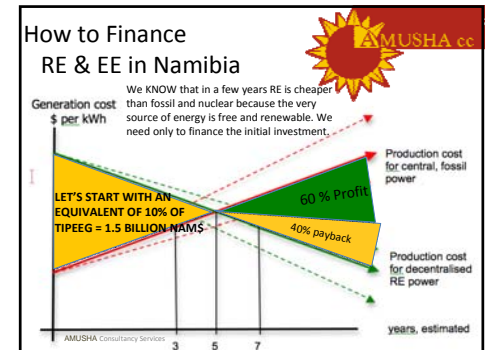
We need:

- Grid management (= smart grid) and generation needs to be separate and independent entities
- We need a Renewable-Energy-In-feed-Tariff (REFIT) that makes it viable to invest in RE !
- Introduction of "life-cycle-costing" instead of "cheapest offer" and "never mind the running cost".
- Independent Power Producers must be invited and encouraged rather than frustrated by complicated and lengthy negotiations
- CLEAR COMMITMENT FROM GRN FOR RE & EE
- International support
- Investors, who think "out of the box".

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The most important slide

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How to Finance RE & EE in Namibia

- Over approx. five years, ANY renewable solution is cheaper per kWh than ANY fossil or nuclear generation
- In order to mobilise private capital, we must create favourable and secure conditions for investment in Renewable Energy = REFIT
- For that, I propose a fund under a section 21 company that will subsidise every kWh produced up to the level of break-even for the producer = an insurance against losses.
- The producer must run its device on at least 85% of capacity and – in turn – pay 40% of the profits back to the fund to be used for
 - Other projects in RE and EE
 - Research and Development (find Namibian solutions to Namibian problems)
 - Bursaries, Training and Human Resource Development
 - Marketing and Information about RE & EE

Start with the equivalent of 10% of TIPEEG - and see, which initiative creates more jobs.

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What's next ?

- Do you need more information ?
 - If so, which one ? Please let me have your questions.
- Should I talk to other people ?
 - If so, to whom ?
- What else can I do to promote this concept ?
- How can we mobilise international support in addition to our own contributions to implement RE & EE in Namibia large scale, so that it has an impact on the National economy ?

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THANK YOU

PLEASE FEEL FREE TO REQUEST MORE DETAILED INFORMATION

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