Renewable Energy Options for Harambee

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Presented at

Renewable Energies and Harambee

FNCC, Windhoek – 03 August 2016

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Harambee ≡ "Pull together in the same direction"

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Introduction

- Man needs **food** and **thermal comfort**;
- Man works for these – from birth to death;
- Man harnesses these locally and from afar;
- Man shows love through provision of food and thermal comfort;
- Man fights, and protects these with all they have;
- Technology eases their harnessing, storage, transmission, protection, and provision.

Irresponsible technology threatens man's livelihood.

Access to modern energy services

Access to modern energy services for

- cooking and heating,
- lighting and communications, and
- mechanical power for productive uses

is a vast area of unmet need.

The poor are particularly disadvantaged!

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Universal access to modern energy services …

The benefits are transformational:

- lighting for schools,
- functioning health clinics,
- pumps for water and sanitation,
- cleaner indoor air,
- faster food-processing and
- more income-generating opportunities,

etc.

… essential for strengthening economies, protecting ecosystems and achieving equity!

World access to energy

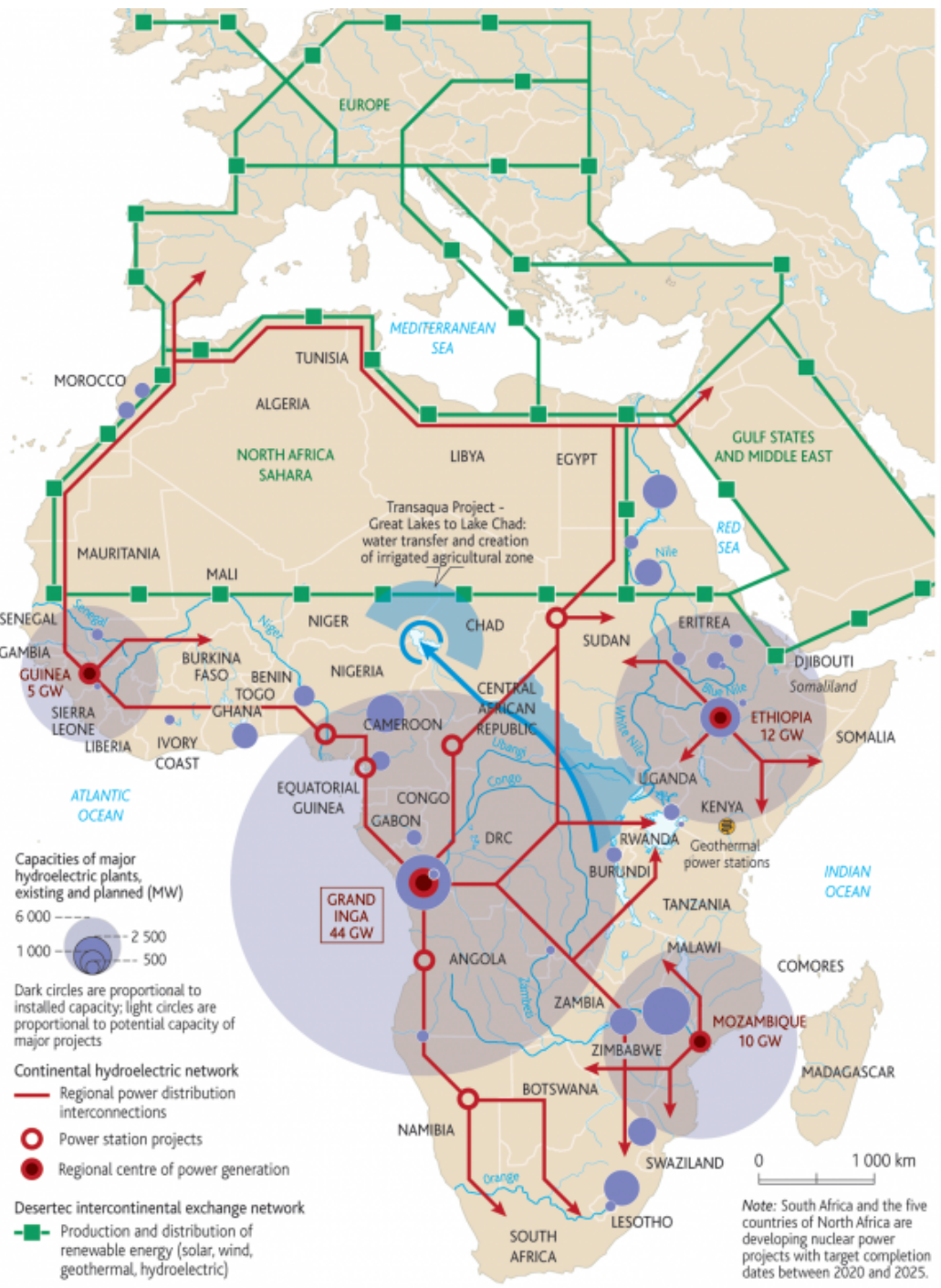
Number of people without access to electricity by region in the New Policies Scenario (million)

	Without access to electricity		Without access to clean cooking facilities	
	2011	2030	2011	2030
China	3	0	446	241
India	306	247	818	730
Latin America	24	0	65	53
Middle East	19	0	9	8
World	1 258	969	2 642	2 524
Sub-Saharan Africa	**599**	**645**	**695**	**879**

Only region where population without access increases over time

WHY???

Africa's Hydropotential



Our continent's immense resources have strong potential to boost energy access and improve the lives of our people.

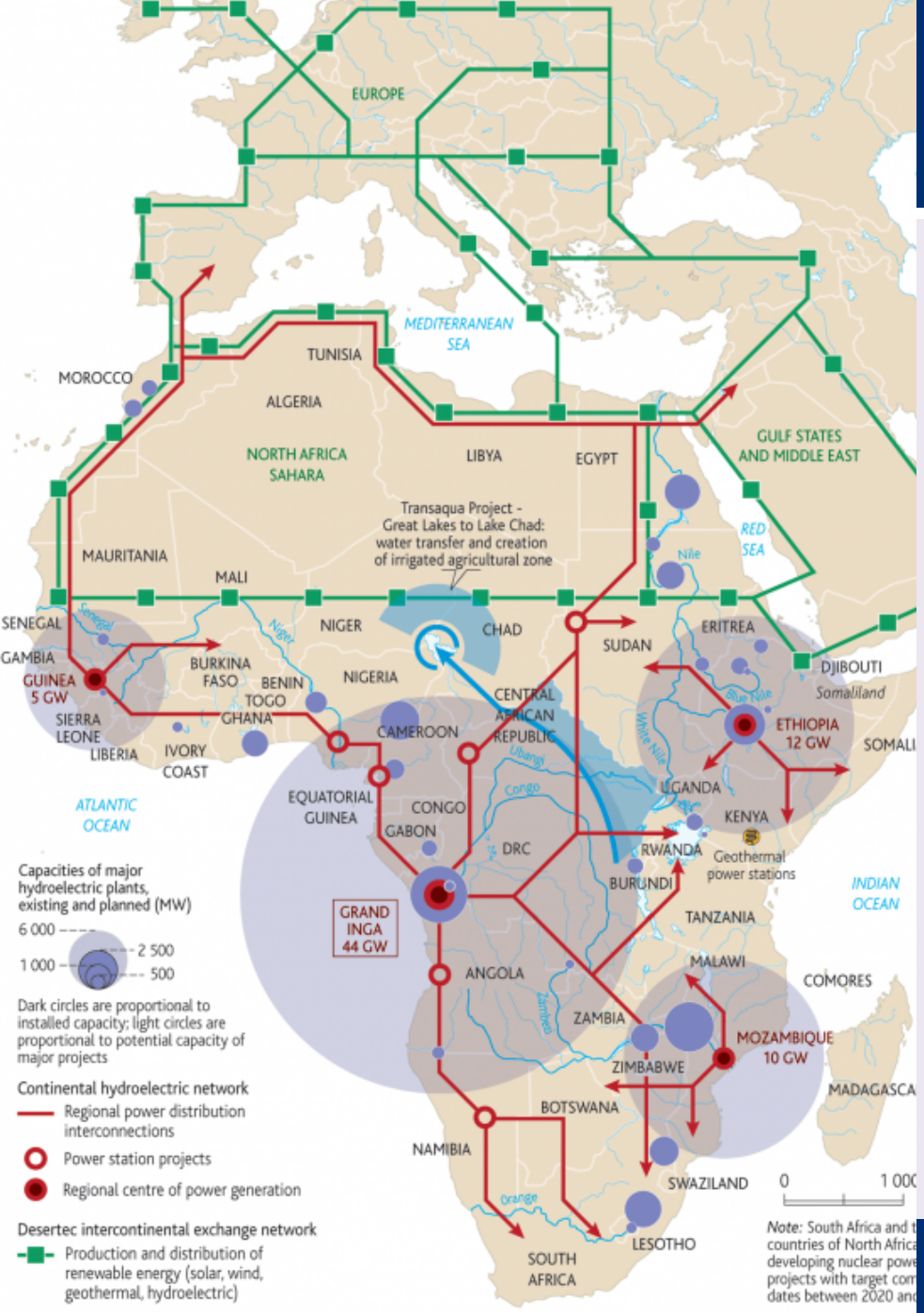
Total installed capacity from all sources in Sub-Saharan Africa today = 68 GW

Potential hydro – 71 GW

In general – environmentally friendly

What is stopping us?

Regional Interconnection is necessary



Africa's immense resources have strong potential to boost energy access and improve the lives of its people.

The opportunities are huge: in renewables and energy efficiency, hydrocarbon reserves, and huge gas reserves.

But in order to capitalise on these, there needs to be improved regional interconnection and more concerted efforts across national borders.

Let's work together


TOYOTA
NAMIBIAN SUN

Abundant resources, yet …

To achieve Africa's aspiration of

universal energy access,

responsible environmental custodianship, and

uncompromised energy security:

bold and visionary policies that stimulate trust and cooperation between public and private sectors, **coupled with**

regulatory and fiscal consistency,

will be essential.

The Challenge

Low tariffs, poor project preparation, issues with Power Purchase Agreements, and absent regulatory frameworks stunt investment and financing in the energy sector;

Coal supplies 75 % of power generation in Southern Africa, but is considered a contributing factor to global warming;

Weak, or absence of, infrastructure and foreign commitments inhibit use of the region's abundant petroleum and natural gas resources; and

Pricing and infrastructure hurdles such as grid connections, manufacturing, and quality testing impede development of the region's renewable energy potential.

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Opportunities?

- Exploit the abundant local energy resources for the benefit of the population;
- Develop clear and objective value chains around each energy resource;
- Build local capacity;
- Develop and implement deliberate policies for energy access for the entire population;
- Participate actively in regional power pools;
- Develop a national energy wealth fund – for sustainability and future security.

Harambee Statements

'A shortage of electricity will have a serious and negative impact on Namibian industries, investment attraction, growth and job creation.'

Harambee Goal and Outcomes #11 [HPP11]

The desired outcome/s with regard to electricity supply during the Harambee period will be:

- Increase in local electricity generating capacity from 400 MW to 600 MW;
- Provision of electricity to all schools and health facilities by 2020; and
- Increase in the rural electrification rate from 34 % in 2015 to 50 % by 2020.

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Harambee Goal and Outcomes #11 [HPP11]

Key performance indicator	Base line	Annual target			
	2015	16/17	17/18	18/19	19/20
Zero national loadshedding during the Harambee period	130MW	250MW	250MW	250MW	250MW
Increase in local electricity generating capacity from 400 MW to 600 MW	400	40	150	55	44
Provision of electricity to all schools and health facilities by 2020	1370	66	76	64	51
Increase in the rural electrification rate from 34 % in 2015 to 50 % by 2020.	34%	36%	40%	45%	50%

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Proposed strategies and actions to attain HPP11

- National Integrated Resource Plan [NIRP]
- Review of the single buyer model
- Increase emphasis on renewable energy Solutions
- Other short-term generating projects
- Rural electrification
- Schools and health facilities
- Imports during peak demand
- Demand management measures
- Long-term electricity security

Sustainable
energy solutions for all

Namibia Energy Institute

- Centre for Nuclear Sciences
- Centre for Oil and Gas
- Centre for Electricity Supply
- Centre for Renewable Energy and Energy Efficiency

Smart Energy partnerships

A symbol of hope for universal energy access in Namibia

Smart partnerships with NTA and universities to develop Curriculum development in the energy sector

Demonstration systems, Monitoring, Quality control and Data Acquisition,

Namibia Energy Institute (NEI)
Strategic Goals

1. Collaborate with industry, government, development partners and academic institutions in transformational research projects and educational outreach for new approaches to the world's energy opportunities.

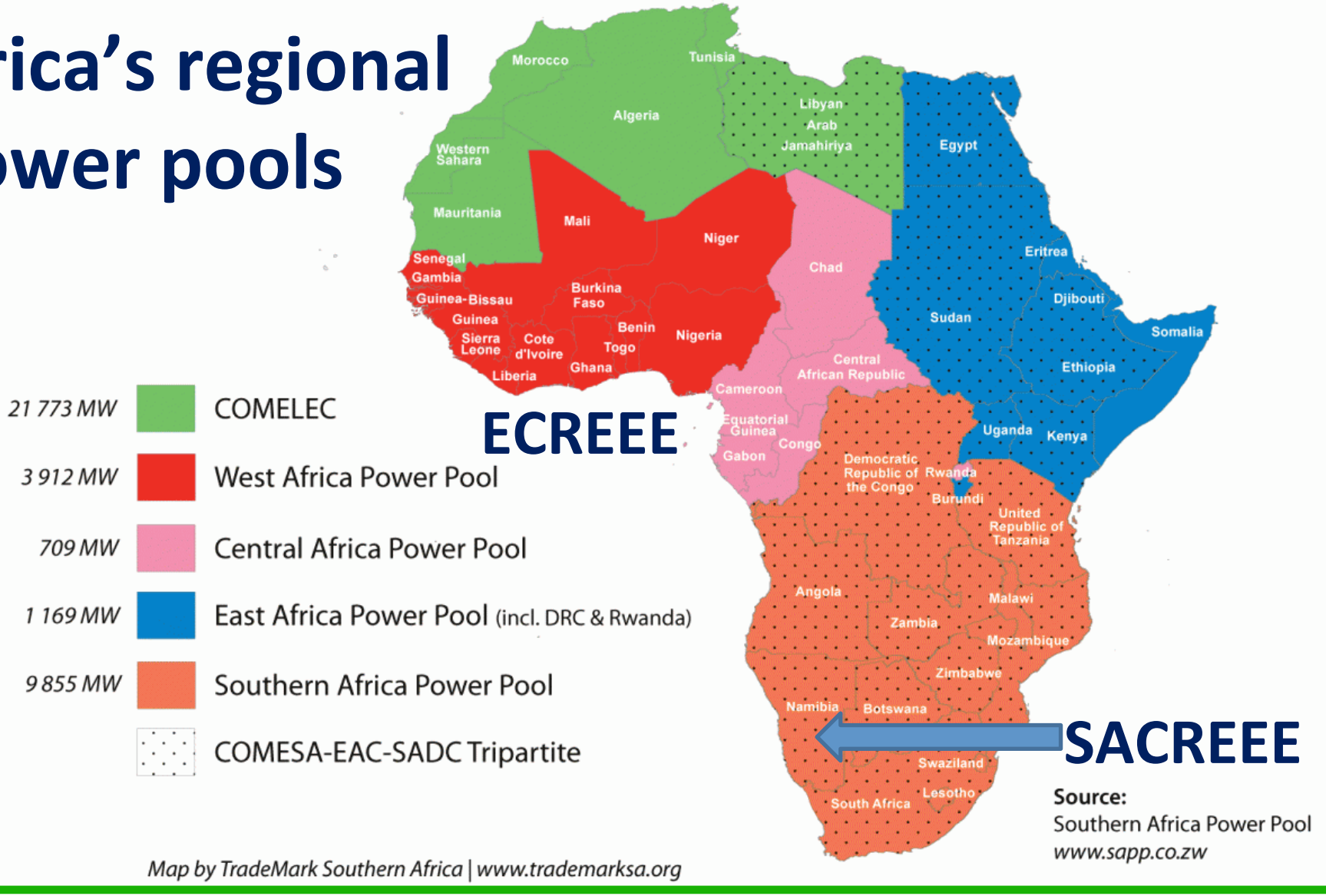
2. Catalyse the transition to advanced sustainable energy exploration, generation, storage, distribution and utilization, through coordinated research & development, capacity building and project management.

NEI Strategic Goals

3. Provide a forum for debate to facilitate innovation, development & dissemination of energy technology, knowledge and good practice.

4. Enhance public understanding of energy resources and technologies and their role in society, in order to address the barriers that hinder increased use and access to modern energy technologies.

Africa's regional power pools



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We need each other

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Conclusions

- Namibia still has a low energy access rate;
- Namibia has an abundance of energy resources – not fully exploited for its population;
- Not enough investment in the energy sector;
- Harambee is an opportunity for development and collaboration;
- Solar energy technologies should be promoted for sustainability.

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LET US WORK TOGETHER TO MAKE HARAMBEE A REALITY.