

Istanbul conference on Somalia
21 – 23 May 2010
Draft discussion paper for Round Table “Alternative Energy”

Overview

Up to 90% of the Somali population has no access to electric power. Although it does serious damage to the country’s environment, 87% of Somalia’s energy consumption comes from traditional biomass-type fuels: charcoal or firewood. Imported petroleum products account for 11%, while electric power generation using diesel fuel accounts for 2%.

Two-thirds of the Somali population live in rural areas, with a significant nomadic population reflecting a geographical ‘scatter’ of energy needs. This fact, combined with the destruction of the nation’s energy infrastructure and major electrification plans on hold (until the situation permits), means that different innovative approaches are needed to address Somalia’s energy needs.

Somalia’s climatic environment, with over 3,000 hours of high and constant sunlight annually as well as excellent wind conditions, make this country one of the most suitable in the world for the harnessing of alternative energy sources. Somalia has been familiar with alternative energy since the 1940s, when wind-powered water pumps were introduced under the UN Trusteeship Administration, and more recently through the introduction of solar-powered street lighting in IDP settlements in Bosasso and Hargeisa.

Given the superb conditions, as well as the extent and typography of energy needs, the environmental damage caused by excess use of firewood and many constraints relating both to fuel import and the establishment of an electricity grid, it is clear that the alternative energy is an appropriate, beneficial and economically viable sector to invest in. The returns to the country’s population, economy and environment, at the micro and macro level, would be exponential.

Currently private enterprises provide localized electricity in certain urban centers for those that can afford it. The supply is fragmented and there is no regulatory framework. Primary energy needs in Somalia are small (with average requirements of 20–50 Watt-hours per person per day) - for cooking, lighting in the home, supporting the uplifting of water from bore-holes (for personal use, watering livestock or plants), as well as for street lighting. Somalia’s dynamic private sector also requires energy to underpin and enable their businesses to grow and expand.

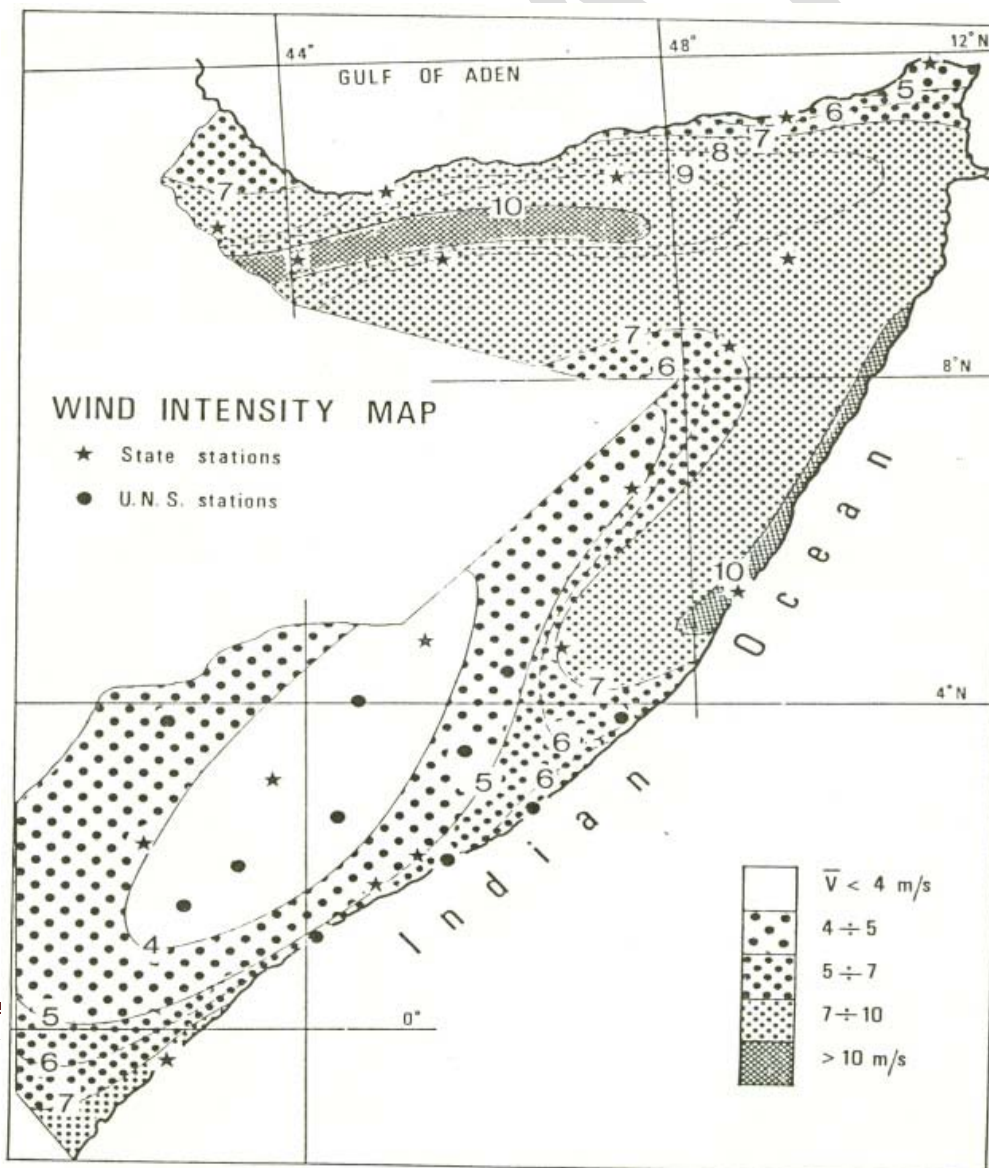
Solid and liquid biomass renewable options in Somalia have largely been unexplored, but could have potential, with respect to crop waste, animal material and animal waste, and marine biomass. Whilst Somalia is currently engaged in an unsustainable exploitation of charcoal (80% for export purposes) and whilst the overall recommendation would be a total ban on charcoal export, the *sustainable* production of charcoal for domestic use and the aforementioned biomass options, should be further explored.

Somalia has a large area of shallow sea along its coastline which is especially promising for wind farm construction because the wind speed is higher and more stable than onshore wind and because potential wind sites are close to many of the major urban centers such as Mogadishu, Kismayo, Bossaso and Berbera. Wind power at the macro level for urban centers, and for communities could be applied as a public-private initiative.

The available information about wind energy shows that 50 percent of Somali territory has wind speeds suitable for electric energy production (wind speeds higher than 6 meters per second), at a cost competitive with the energy generated from diesel power plants. In 70 percent of the area, the wind energy is competitive with small conventional thermal plants for water pumping or for rural electrification (wind speeds greater than 5 meters per second). In 95 percent of the Somali territory, diesel-powered water pumps can be profitably replaced by windmills.

Such phenomenal sources of energy, particularly wind and solar, could be channeled into many small or medium sized aero generators, photovoltaic solar systems and water-pumping windmills to contribute to stand-alone, decentralized rural and urban energy systems. Given the small energy requirements for households, solar powered lamps and cookers for domestic use would be extremely applicable and within Mogadishu, solar-powered street lighting would significantly reduce night-time security risk.

Solar cookers of various types have been developed – as have more efficient biomass cook stoves (requiring less firewood). Greater production, distribution and use of such cookers would greatly help the environment as well as improving the health of women and children (less risk of respiratory diseases) and ameliorating the lives and security of women who would no longer need to walk long distances in search of firewood.



Solar-power is already the energy source of choice in the rehabilitation of many health centres and in some water schemes, particularly those in rural areas.

The wind intensity map highlights the geographic velocity of winds across Somalia, with many areas having significant opportunities for wind power. The strongest winds are indicated along the coast of Puntland area (which could be of relevance in

the struggle against piracy).

Why alternative energy is important towards security and stability in Somalia:

The use of existing energy resources, particularly firewood and charcoal, is unsustainable and heightens tension among communities due to growing competition over fast declining energy sources. Charcoal is a ‘driver of conflict’ in Somalia and renewable energy provides **an alternative to this driver of conflict resource**.

Electricity supply is critical for **improving communications** and lighting – both of which contribute to stability and improving security. Additionally, with the government and local administrations enabling the private sector to expand and operate the alternative energy sector, it frees the government and local administrations to focus on other pressing concerns.

The introduction of alternative sources of energy at both the micro and macro levels will help improve the livelihood of the communities in Somalia and **expand the productive capacity**. The multiplier effect and economic opportunity of having access to electricity, particularly in rural areas, is significant. Access to electricity expands Somalia’s private sector, bolsters communities and **creates employment opportunities** – all of which underpin stability.

The provision of alternative energy along Somalia’s extensive coastline, would **provide alternate opportunities to that of piracy**. Opportunities such as the expansion of the important fisheries sector through the provision of cold storage facilities; improvement of access or the expansion of telecommunications and remittance companies.

Alternative energy (especially solar photovoltaic systems) is already being used in health centres and water systems in rural areas and will soon be introduced in some schools. It can provide power to life-saving medical equipment, refrigeration for vaccines and clean water; enable access to internet in schools; light up educational and vocational training facilities for disaffected youth – alternative energy can have a huge **social return** – particularly in areas where normal electrification supply would not reach.

Whilst the initial installation costs of wind and solar energy sources may be high, the **long-term cost-benefit** shows that there are little or no running costs after the initial installations. Additionally alternative energy would place less reliance on intermittent supply chains of fuel and allow limited hard currency to be used for other productive investments all of which also contribute towards the stability of Somalia.

The use of alternative energy for access to water bore-holes directly contributes towards greater **food security, human security and coping mechanisms** of the Somali population. Access to water (or inversely lack of access) is a major contributor towards stability (or instability) in Somalia.

Issues for the round table discussions

Issues for the round-table discussion	<p><i>This column would serve as an internal guide for the facilitators and would not be distributed</i></p> <p>Possible (long list) outcomes from the roundtable</p>
<p>What are the key factors that would enable alternative energy to be substantially expanded in Somalia?</p>	<ul style="list-style-type: none"> • Assess the alternative energy needs and potential, e.g., in communities and public service establishments, including health facilities, schools, and water systems • Call for a meeting with pertinent development banks on enabling access to the Somalia private sector for possible funds for alternative energy • Develop alternative energy action plan ultimately aiming at universal access • Obtain understanding of TFG likely role (minimal?) in this sector • Network and understand potential private sector partners. • Follow-up with interested donors
<p>What lessons can be learned from other fragile states on expanding alternative energy</p>	<ul style="list-style-type: none"> • Use other countries lessons learned and feed into action plan • Link international players that have worked in other fragile states
<p>How does the Somali private sector see opportunities for their involvement in the development of the alternative energy sector?</p> <p>Solar power:</p> <ul style="list-style-type: none"> - for domestic use (lamps and cookers) -for community centres (e.g. solar photovoltaic systems) - for street lighting <p>Wind power</p> <ul style="list-style-type: none"> - micro use (domestic water pumps) 	<ul style="list-style-type: none"> • Possible follow-up session with the Somali private sector • Networking achieved

<p>etc.)</p> <ul style="list-style-type: none">- for community/more macro level electrification	
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