CASE STUDY

Project:	**Libyan Mobile Provider**
Country:	**Libya**
Project value:	**$4m**
Year:	**2007 - ongoing**
Product:	**Solar generators for mobile GSM Repeaters**

Sollatek™

LIBYA Telecom & Technology
www.ltt.ly

Libya remote mobile phone users enjoy continuous connection from Libyana, thanks to solar power generators from Sollatek.

A nationwide Libyan programme to get people talking across its vast expanses is set to revolutionise lives and infinitely speed modernisation of outlying regions.

Sollatek is now key to this major initiative, recently winning an important tender against fierce global competition, to supply and install solar power generators for 61 Libyan sites. Covering an area of over 2 million square km, this new scheme means a phone - cellular or fixed - to practically every Libyan. Many also have a home landline, plus one of two mobile lines, one on each of the two available networks, Libyana and Madar.

Sollatek's pioneering role in Libya's telecommunications systems began in 1993 with 22 solar power microwave repeater sites replacing diesel generators, boosting efficiency of the telecommunications backbone exponentially. Simultaneously, Sollatek's Libya office was established, to ensure efficient installation and after-sales service. Another eight sites followed in 1999 with a further 34 in 2001.

A new feature from Sollatek is a web-based control console. Delivering major time and cost saving benefits, it allows control of all 61 sites from a single location, anywhere in the world.

Each system comprises:

• solar array made of 4 solar modules in series (to provide 48V) called strings and a number of strings in parallel to provide the necessary power. Each Sollatek solar module provides 130Wp. The number of parallel strings varies with GSM site power consumption. The solar array generates DC power during the day which runs daytime communications equipment while charging the batteries,

• solar control centre (SCC) which regulates charging/discharging of battery and supplying of load with energy. The SCC is rated at 180A charging current for the smaller sites (500W), rising to 270A for larger sites (1200W),

continued overleaf

Sollatek (UK) Limited, Unit 10, Poyle 14 Newlands Drive, Poyle, Slough SL3 0DX. United Kingdom.
Tel : +44 1753 688 300 Fax : +44 1753 685 306 email : sales@sollatek.com www.sollatek.com

• sealed batteries with a design life of 15+ years requiring no maintenance and providing sufficient energy to operate the GSM equipment during the night. The batteries are rated to provide 5 continuous operating days at full load even if there is no sun - somewhat unlikely in Libya!

• Support structures with each unit carrying four solar modules and therefore forming a 48V string,

• fixtures/fittings including junction boxes, cables, mechanical fasteners, etc.

Design Life

The solar modules have a design life of over 25 years, the batteries giving excellent service for a good 15 years. Thus the effective running costs are negligible, especially as no routine maintenance is required.

Heat Considerations – Passive Cooling Shelters

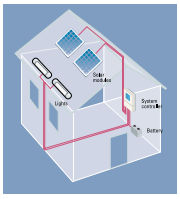
Because it wouldn't be cost-effective to use air-conditioning equipment within each GSM site due to the required solar array, a novel approach is employed in the Libyana systems. A passive cooling shelter (PCS) exchanges the coolness of the night with the heat of the day. Therefore water is cooled at night through a heat exchanger and then used to cool the equipment at night.

Even an extreme case of night temperature 23°C/ day temperature 50°C, translates to maximum temperature for GSM equipment of 37°C, which is well within its operating parameters.

Sollatek also recently installed a large rural electrification system for a community in the Sahara Desert (Wadi Marseet) fine-tuning transmission to homes. In these ways, the company achieves great awareness at grassroots level, Sollatek's work in Libya is a reference point for other African countries. Seeking to invest in solar power, they now see, through Sollatek, solar power as a reliable, low maintenance energy option enhanced by the attentive customer care of a local Sollatek office.

Libya's climatic conditions and sheer scale make solar power the intelligent solution to its global systems for mobiles (GSM) sites. Libya now leads other oil producing countries in the quest to use surplus funds to develop this efficient green energy. For Libya it means a future when it will be able to use its investment to generate electricity at practically negligible day-to-day cost.

Other Sollatek Solar products



Solar Energy Systems

Charge Controllers

Solar Lights

Solar Energy Kits

Batteries

Solar Modules

Solar lantern

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