Off-grid solar power

Africa unplugged

GAKENGE
Small-scale solar power is surging ahead

A FEW miles down a rutted dirt road, and
many more from the nearest town, a
small farmhouse stands surrounded by
dense green bush. On the inside of one
cell, gatherly wires reach down to a switch
and light that are connected to a solar pan-
el. Readers in rich countries may well con-
sider electric lighting mundane. But in
northern Rwanda, where fewer than one
ten homes has access to electricity, sim-
sple solar systems that do not rely on the
grid—and use a battery to store electricity
for use at night—are a leap into modernity.
A service once available only to rich Af-
cans in big towns or cities is now available
for just a few dollars a week. People are
able to light their rooms, charge a smart
phone and listen to the radio. In a few
years they will probably also be watching
television, powering their irrigation
pumps and cooling their homes with fans.
In short, poor people in a continent in
which two of every three people have no
access to power may soon be able to do
many of the things that their counterparts
in rich countries can do, other, perhaps,
than running energy-hogging appliances
such as tumble dryers and dishwashers.
And they will be able to do so at a fraction of
the cost of traditional sources of energy
while also acting as a testing ground for
technologies that may even make their
way back from poor countries to rich ones.
Off-grid solar is spreading at an electrifi-
cying pace. An industry that barely existed
a few years ago is now thought to be pro-
viding power to perhaps 600,000 house-
holds in Africa. The pace of growth is accel-
erating in a continent that, more than any
other, is rich in sunshine (see map). Indus-
try executives reckon that over the next
year the number of home-power systems
on African roofs will grow by 60-100%. M-
Kopa, the market leader, has installed
400,000 systems and, at its current rate of
growth, may add another 200,000 to that
number over the next year. Smaller rivals
such as Off Grid Electric, Bboxx and Azuri
Technologies may well double their client
base over the same period.
This fast pace of growth suggests that, if
sustained, off-grid connections will within
a few years outstrip the rate at which peo-
ple are being connected to the grid, leap-
frogging power lines in much the same
way that mobile phones bypassed fixed-
line telephone networks. This promises
not just to improve millions of lives but to
help deal with a chronic shortage of power
that, the World Bank reckons, trims about
two percentage points from Africa’s annu-
al economic growth.
Extending electricity grids across Africa
might seem a better alternative. But, for the
moment, it is unrealistic. Rwanda, one of
Africa’s most densely-populated coun-
tries, found that it costs an average of $880
to link a house to the grid. Yet even that fig-
ure is misleading since it changed its policy
to concentrate on connecting only those
homes that are already close to existing
power lines. Before this change it cost an
average of about $2,000 per connection,
about ten times the cost of an off-grid sys-
tem. The Africa Progress Panel, a group of
experts led by Kofi Annan, a former UN
secretary-general reckons that more than
600m people are not connected to grids
and that to wire them up, investment in
electricity infrastructure would have to
rise to about $55bn a year from the current
$8bn. On current trends it would take until
2080 to link all Africans to the grid.

Average annual sum of Global
Horizontal Irradiation (GHI), Wh/m²

Source: SolarGIS

<800 1,000 1,500 2,000 2,500 3,000
Exit South Africa

MODULES

A terrible blow for the court, and for a beleaguered country

UNDER Nelson Mandela’s government, South Africa championed the creation of a court to try the world’s worst criminals. Out of apartheid and the Rwandan genocide came a boon for international justice. “Our own continent has suffered enough horrors emanating from the inhumanity of human beings towards human beings,” Mr Mandela said ahead of the Rome statute adopted in 1998, which established the International Criminal Court (icc). So strongly felt was this mission that South Africa incorporated the icc’s founding treaty into its own domestic laws.

But under President Jacob Zuma the country has taken a radically different turn. On October 21st South Africa’s government filed notice of its intention to quit the icc (the process will take a year). This puts South Africa in the company of Burundi, which said it was leaving after the icc began investigating the wave of killings that followed President Pierre Nkurunziza’s decision to cling to a third term. Other African countries may follow suit. The Gambia, another human-rights abuser, says it will do so. Kenya, Uganda and Namibia have made similar threats.

South Africa’s explanation for leaving rings hollow. Its official notice complains that its obligations under the Rome statute clash with conventions around diplomatic immunity for heads of state and hinders its ability to broker “peaceful resolution of conflicts.” This was the case when Sudan’s president pitched up in Johannesburg for an African Union summit last year. Under the icc rules, South Africa was obliged to arrest Omar al-Bashir, who is wanted by the icc on genocide charges for the deaths of hundreds of thousands in Darfur. Instead Mr Zuma (pictured, left) welcomed him. Mr Bashir bid a hasty retreat back to Khartoum when civil-society groups took the South African government to court in an attempt to force his arrest.

Many South Africans, including the liberal opposition and human-rights bodies, see the decision to leave the icc not as a triumph for pan-Africanism but as another moment in the country’s descent under Mr Zuma, who has repeatedly shown little respect for the law. Even the leftist Economic Freedom Fighters (EFF), which roundly criticises the icc for bias against Africans, has condemned the move as irresponsible.

The timing is also questioned, with Mr Zuma and his government facing a string of legal challenges. Two lower courts have ruled that the government broke the law by failing to arrest Mr Bashir. The Constitutional Court was due to hear an appeal next month, though the justice minister now says it will be withdrawn. There are also questions over the process of leaving the icc. The opposition Democratic Alliance has launched a court challenge arguing that the move is unconstitutional because the government failed to seek approval from Parliament.

Meanwhile the president, beset by a battered economy, violent student protests and factional disputes within his party, has his own legal woes. Earlier this year Mr Zuma was found to have violated the constitution in a row over expensive improvements to his house. He now faces the potential reinstatement of corruption charges linked to an arms deal. At the same time the country’s respected finance minister, a rival of Mr Zuma, is due in court on spurious charges. George Kegorlo of the Kenya Human Rights Commission reckons that South Africa’s move to withdraw from the icc is a response to Mr Zuma’s political problems: “Impervious to the country’s political history...the South African leadership is marching the country to a legal wilderness, where South Africa will be accountable for nothing.”