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World News

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Obama Thinks Solar Power Will Boost Kenya; Kenyans Aren't So Sure

By [GREGORY WARNER](#) ([PEOPLE/GREGORY-WARNER](#))

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Kenyan graffiti artist Bankslove created a mural of Barack Obama. The president himself will visit Kenya on Friday. One of the president's agenda items is to promote solar power.

Ben Curtis AP

When Jackline Mumbua decided to go solar, she knew the cost would be steep. The 35-year-old housewife in Machakos, Kenya, can barely cover the expenses of raising three school-age children on the little money her husband earns driving a motorcycle taxi. They have no savings. It took her family nearly two years to pay, in monthly installments, the \$55 for a small rooftop solar panel.

When it finally arrived last September, they hooked it up to four lightbulbs — one in each room, and a fourth as a security light over the front door. Her 8-year-old daughter was so excited that she ran and gathered all the neighbors. They sang and danced in the illuminated front yard. Mumbua felt overjoyed. Now she wouldn't have to worry about whether she had enough money for paraffin candles to avoid eating in

darkness. Now she could think about taking a job during the day and saving her chores for night. Now they had a security light. Now her kids could finish their homework.

That's where the solar Africa story usually ends. It's the kind of optimistic story that President Obama will tell when he visits Kenya on Friday. He'll be promoting his signature Power Africa initiative, and within that, a program called "Beyond the Grid," which leverages a billion dollars in private investment to market renewable energy products — and low-cost financing to pay for it — to rural Africans.

But Jackline Mumbua's story didn't end there. The next day, after the lights went on, she woke up to all the things she could not do with her meager wattage. She can't power a refrigerator. She can't install a pump to run water. And yet the solution to all these needs is hanging 30 steps away over her front walkway, shadowing the acacia bushes. It's not fancy technology. In fact, it's something that has become invisible to most Americans.

Power lines.

But there's a big catch. Connecting to those lines would cost her \$350, with no installment plan available.

There's a word for the millions of African families like Jackline's, a word coined by the research team of Ted Miguel, an economics professor at the University of California, Berkeley. *Undergrid*. "People talk about people being off the grid or on the grid," Miguel explains. "While the reality in many parts of Kenya, and increasingly in many other parts of sub-Saharan Africa, is that the majority of households are undergrid. They're within striking distance of the grid. They can see transformers. They could easily be connected if only there was a way to do so. But they're not connected."

Miguel says that solar panels for homes are less a solution to the power problem than a symptom of a larger problem: how to get millions of Kenyans on the national grid that already powers the country's rural schools and clinics and public buildings. It's not an environmental trade-off, he argues. It isn't like the grid is "dirty" and solar is "clean." Most of Kenya's grid is powered by clean sources like hydro, geothermal and wind. And because of economies of scale, the cost of electricity on the grid is exponentially cheaper. "No industrial country," Miguel writes, "has ever powered its economic growth with solar lanterns."

Miguel faults President Obama's Power Africa initiative for putting so much emphasis on mass electricity generation, and on technological off-grid solutions like home solar, and so little emphasis on helping Africans access the existing national grid. If you look at Africa's economic trajectory, he says, and say that Africa is going to continue developing and enter the ranks of middle income countries, "then you need access to electricity and to the grid. And a weakly powered home solar system or solar lantern isn't going to get you there."

The question that Miguel is researching now involves how African villagers will make use of that level of electricity when they get it. It's a similar debate that America had in the 1930s around the high cost of electrifying its rural parts. That question is this: Is it worth it to a country to provide electricity to all its citizens — not just city dwellers and civic institutions?

It was that question that brought me to a little dry goods store about a mile from Jackline Mumbua's house, and its proprietor, 22-year-old Joel Kitele.

Kitele's story is certainly not typical, but it shows how things could someday change. His shop happens to be within a pilot project of the Kenyan government, financed in part by the World Bank, that will subsidize the connection fee of houses and businesses in selected areas. So what has Joel Kitele done in the two months since the power came on?

First, he and his siblings bought a welding machine to repair farm equipment. Then

they started building metal chairs and tables they hope to sell to hotels. They're building kiosks in the hopes of renting them out to would-be entrepreneurs. And they're installing running water with a pump they built from scrap metal to irrigate a tree nursery they envision.

On Friday, Kitele will mark a milestone: He'll take his first shower in an outdoor stall that he and his brother built themselves. Then, he says, he'll feel urban. "At least we can say that we are part of Kenya," he says, smiling.

Getting connected to the grid also makes people feel connected to the country. That's a psychological benefit that Miguel's research team has found in conducting energy surveys with hundreds of Kenyans.

Solar panels, on the other hand, offer no such psychological boost. Kitele, as it turned out, had bought a panel. It now sits unused and unplugged on his roof. He's looking for a buyer. A buyer who might live 30 feet, but a world away, from power.

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Transcript

ROBERT SIEGEL, HOST:

Solar power companies promise to help light up the African continent. President Obama's signature Power Africa initiative buys into that promise in a big way. When the president visits Kenya tomorrow, he'll be promoting his program called Beyond the Grid. It leverages a billion dollars in private investment to market renewable energy products to rural Africans. But as NPR's Gregory Warner reports, Africa's answer to electrification may be a lot more familiar and a lot less high-tech.

GREGORY WARNER, BYLINE: When Jackline Mumbua decided to go solar, she knew it was going to be a long haul. She's a 35-year-old housewife in Machakos, Kenya. Her husband drives a motorcycle taxi, and they have three school-age children. It would take her family nearly two years to pay, in monthly installments, the \$55 for a small rooftop solar panel. And so when the thing arrived and the lights finally turned on, she couldn't help but sing.

JACKLINE MUMBUA: (Singing in foreign language).

WARNER: All her neighbors danced in the illuminated front yard to a song with these lyrics. We have light. We're very happy. We have light.

UNIDENTIFIED WOMEN: (Singing in foreign language).

WARNER: In this where the solar Africa story usually ends. It's the kind of story that President Obama will tell when he visits Kenya on Friday about low-cost solar with built-in financing bringing power to remote Africans. But the next day, Jackline Mumbua woke up to all the things that she could not do with her meager wattage. She can't power a refrigerator. She can't run water while the solution to all these needs is actually hanging 30 feet away over the acacia bushes on her front walkway, a solution that's become almost invisible to most Americans, and that is power lines. Connecting to those lines would cost her \$350 with no installment plan available. But there's a word for the millions of families like Jackline's.

TED MIGUEL: Undergrid - yeah - undergrid households.

WARNER: Ted Miguel is a professor of Economics at the University of California, Berkeley. His research team coined the term undergrid to describe the many rural Kenyans who aren't on the grid, but neither are they what we think of as off the grid.

MIGUEL: The majority of households are undergrid they're within striking distance of the grid. They can see transformers.

WARNER: Transformers that already power schools and clinics and public buildings in Kenya's countryside. And it's not an environmental trade-off, he says, because most

of Kenya's grid is powered by clean sources like hydro, wind, geothermal.

MIGUEL: So it isn't like the grid is dirty and offgrid or these solar solutions are sort of clean.

WARNER: Miguel faults President Obama's Power Africa initiative for putting too much emphasis on home solar and too little on helping Africans access their national grid.

MIGUEL: If you look at Africa's economic trajectory and say, look; over the next 10, 20 years, Africa's going to continue growing and eventually get into the ranks of, you know, middle-income countries, then you need access to electricity and to the grid. And a very weekly powered home solar system or solar lantern isn't going to get you there.

WARNER: The question, though, that Miguel is researching now is how African villagers will make use of that level of electricity. And it's a similar debate that America faced in the 1930s around the high cost of electrifying rural America. That question brought me to a little dry-goods store about a mile from Jackline Mumbua's house and its proprietor, 22-year-old Joel Kitele.

JOEL KITELE: You can have a seat.

WARNER: Thanks.

His is a unique case. He's part of a pilot project of the Kenyan government financed, in part, by the world that will subsidize the connection fee for houses and businesses in selected areas. So what have Joel Kitele and his siblings done in last two months since the power came on? Well, they bought a welding machine, and they started repairing local farm equipment. Then they started making chairs and tables to sell to local hotels. They're building kiosks to rent them out to other would-be entrepreneurs. And they're installing running water in a pump they built from scrap metal to irrigate a future tree nursery.

KITELE: At least we can say that we are part of Kenya.

WARNER: Researchers who study this report a kind of psychological effect of bringing villagers on the grid, a feeling of being connected to the rest of the country. As for home solar - well, Kitele had bought a panel. It now sits unplugged on the roof. He's looking for a buyer, a buyer who might live 30 feet, but a world away, from power. Gregory Warner, NPR News, Nairobi. Transcript provided by NPR, Copyright NPR.

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