

Light for a child to read at night

In a country where decades of conflict has damaged infrastructure and halted development, electricity remains a scarce commodity. Now for the first time since the 1970s a new gas-fired power plant is being built in Afghanistan centered around a mobile fast power solution that will bring urgently needed power to the grid.

Text: Stefanie Glinski Photos: Stefanie Glinski, Jim Huylebroek



Like 90 percent of the population in Afghanistan, ten-year-old Arifa has little access to electricity to continue her schoolwork at home.

After a day of classes, it's a dark house that Arifa returns to. The ten-year-old stands by the window as she copies words into her notebook, trying to capture the day's last rays to finish her homework. Once the sun has set, her rural village in Ghor province is engulfed by darkness.

In Afghanistan, a country nestled into the Hindu Kush mountains that has seen decades of conflict, electricity is a scarce commodity. Although the potential for power generation is huge – with sufficient reserves of gas, water and wind – only 300 megawatts are domestically produced every year, while at least 75 percent of electricity – about

1,000 megawatts – are imported from neighboring countries.

Arifa is just one of the population's 90 percent who have only partial or no access to electricity at all.

Rebuilding a "Golden Period"

This, says Dr. Ehsan Bayat, is not what he grew up with. Bayat, a recipient of the National Human Rights Award in 2006 given by the Afghanistan Human Rights Association, is Founder and Chairman of the Bayat Group, which includes companies designed to promote long-term economic growth in Afghanistan like Afghan Wireless, Ariana Television and Bayat Energy.

A Kabul native who left Afghanistan for the United States as a teenager after the Soviet invasion, Bayat was raised during what he refers to as the "Golden Period." "I don't remember not having electricity as a child," he explains from his office at Bayat Energy in Ponte Vedra Beach, Florida, where he now resides and which is not far from the Siemens Gas and Power offices in Orlando. "When I came back to Kabul after 2001, nothing was there anymore. A lot is being rebuilt, but power is still lacking and it's the answer to a lot of problems in the country."

Bayat, who has a residence in Afghanistan and continues to spend much time in the country, says that

he feels confident about investing in energy. "It's common sense: People need power to run their factories, farms and households. It's a promising sector and we adopted a system of working with the local community, creating jobs and developing the area." This strategy is exactly what guarantees the best possible security, according to Bayat. "Long-term energy independence," he says, "will help the country make a massive leap into the 21st century."

Providing fast power for millions

But how do you provide dependable, fast energy in a country where the infrastructure is inadequate or

damaged? Bayat's answer came in the form of a Siemens fast power mobile gas turbine unit, which will provide up to 41 megawatts of power for approximately 200,000 homes. In its final phase, the project will use natural gas reserves and additional turbines to generate some 200 megawatts of electricity – with the potential to supply power to millions of people.

"The country's last large gas-fired power plant was built in the 1970s, so when Dr. Bayat approached us, we were excited about his vision and determined to find the best solution," explains Siemens Power and Gas Senior Vice President of Commercial Sales Julian Erfurth. "Bayat chose the >

Asked to describe "fast power" in a sentence, Dr. Ehsan Bayat, founder of Bayat Energy, doesn't hesitate to reply: "It's light for a child to read at night."



"Long-term energy independence will help the country make a massive leap into the 21st century."

Ehsan Bayat, CEO of Bayat Energy and Founder of the Bayat Group



Even in the capital city of Kabul, where the demand for electricity rises exponentially each year, only around 70 percent of households are connected.



The fast power mobile gas turbine unit will provide up to 41 megawatts of power for approximately 200,000 homes in northern Afghanistan.



By air, land or sea: The fast power unit was transported by ship from Houston, Texas, where it was manufactured, to Dubai and then will be flown into Afghanistan.

“Bayat chose the largest and most efficient mobile gas turbine on the market and, once on-site, it can be installed and commissioned in less than two weeks.”

Julian Erfurth, Siemens Power and Gas Senior Vice President of Commercial Sales

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The SGT-A45 mobile gas turbine unit was shipped from Texas to Dubai and then will be flown to a nearby airport in northern Afghanistan for installation in Jowzjan province where it is due to be up and running by mid-summer. “It’s an ideal location for the project,” says Erfurth. “Between gas reserves and transmission lines, the necessary infrastructure is close to the site.”

Building commercial solutions for energy

In the past years, the Afghan government has been simplifying investment conditions to foster partnerships between public and private sectors. “Practically, this means subsidies, lowering taxes and tariffs, land leases and guaranteed power purchasing agreements,” explains Abdul Basir Azimi, former Deputy Minister of

Energy and Water. “Bayat Energy is a good example for such public-private partnerships. We’re in need of energy urgently to electrify our villages, cities, mines, factories and industrial parks,” he adds. According to him, Afghans pay an average of US\$0.4 per kilowatt of electricity.

Bayat Energy is not a classical utility, but an investor working to find commercial solutions and partnerships to develop power generation. Without the right partnerships and tight, collaborative teamwork, the project in northern Afghanistan wouldn’t have been possible. Bayat explains: “We had the idea and the money, Siemens brought the supplies, our partner Relevant Power Solutions (RPS) is handling the operation and the national power utility DABS – Da Afghanistan Breshna Sherkat – provides the infrastructure and has signed an agreement to buy our power.” RPS, brought in by Siemens, will also operate the new plant.

Dangerous outages

Afghanistan’s lack of electricity comes at the cost of the 37-million-strong nation. The capital Kabul hosts roughly five million people, yet even there, sustained power is not always a given. “And that’s sometimes dangerous,” says orthopedic surgeon Dr. Ramin Faramarz, who now runs his own clinic in the heart of Kabul. For him, it starts with little annoyances like not being able to immediately work an X-ray machine or turning on the light, but eventually – at least in the medical sector – lack of electricity can be a death sentence.

While most hospital equipment runs with a backup of charged batteries, Faramarz specifically remembers a 30-minute outage at a government hospital he previously worked at. “One night we had a power cut and our generator didn’t work,” he explains. “We had three patients in surgery – cut open and under anesthesia – so we had to continue using our mobile phone

lights,” he remembers. “Not having electricity is dangerous. People can die.”

Yet instead of looking at what isn’t working, Bayat’s vision is to bring improvement. With over a million people eventually using power from the Jowzjan province power plant, he hopes to reignite the gas industry, create jobs and enable people to access electricity for everyday use. With different resources spread out across the country, Bayat believes that central authority is still necessary to provide transmission services, maintenance and key infrastructure across Afghanistan.

Personally, it’s stories like Arifa’s that drive him. When asked to describe “fast power” in a sentence, he doesn’t hesitate: “It’s light for a child to read at night.” ■

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About Dr. Bayat & Bayat Group

Dr. Ehsan Bayat is one of Afghanistan’s most prominent entrepreneurs and philanthropists. Born in central Afghanistan, he moved with his family to the United States after the Soviet invasion and earned an engineering degree from the New Jersey Institute of Technology. He is founder and Chairman of the Bayat Group, and in 2005 established the public charity the Bayat Foundation. He is also the recipient of numerous leadership and humanitarian awards for his work sponsoring projects that benefit the welfare and health of Afghans.

The Bayat Group comprises companies operating in telecommunications, media, security and logistics, construction, mining and energy. The group has more than a decade of experience working with government officials and organizations to help develop national industries and create a foundation for the country’s long-term economic growth. www.bayat-group.com