

## Interview with Alexander Skorokhodov, CEO, BPC Engineering

ose times there was almost no such thing as decentralized power generation market in Russia. Traditionally, the term ‘decentralized generation’ defined diesel generators that were used primarily as an emergency source of power. Analyzing international power market we saw a great potential for decentralized power generation market in our country. Since we have always been an innovative engineering company we subsequently identified the niche of decentralized generation as a significant growth area for the company. We started looking for solutions that would address the emerging market and found a new line of equipment based on microturbines. Soon after that, we had identified Capstone as our partner.

Why an American equipment supplier? Were there no Russian manufacturers in this field?

Microturbine technologies have existed for many years. Traditionally, these technologies have been used as an auxiliary power source for transportation –such as aircrafts and ships for instance– and mostly military applications such as missiles. In Russia, microturbines are also being used in Tupolev aircrafts and T-80 tanks for example. The main difference with such on-board auxiliary power sources is that long operation times and high levels of efficiency have never been very important.

Capstone has developed specialized power generating microturbines based on their experience with the onboard microturbines through upgrading operating times, efficiency levels, ecological parameters, etc. It was the only company specifically focusing on this particular technology. We spoke with other suppliers such as Turbec and Ingersoll Rand too, but preferred to work with a more specialized company that would not belong to a large group.

You have said earlier that the development of the market for decentralized power has been hampered by regulation. Why?

At present, there are no incentive programs to stimulate industrial customers to use decentralized generation in Russia. This is a first issue. A second issue is the cross-subsidizing of tariffs between residential and industrial customers. Currently, civilian tariffs remain at the low level at the expense of higher tariffs for industrial customers, adding additional pressure on the development of the market. This is especially visible in remote regions. For instance, we have quite a number of sites in the region of Yakutia, where power generation is decentralized by default. One can find hundreds of generators there which all need to use very expensive fuels. The electricity tariffs for residents in that region, however, are still very low. It has created additional pressure on industrial customers.

This problem is currently being addressed?

The problem has been addressed several times verbally, but so far no real changes have taken place yet. The phenomenon of cross-subsidizing does not create a desirable investment platform today.

Was 2001 too early to move into decentralized generation then?

It was too early because the Russian power industry still relied on so-called ‘legacy infrastructure.’ The capacity and the grid were there, but consumption remained low due to a tough economic climate. Over these ten years, there has been significant activity in industrial construction, civil infrastructure, etc. Today, this legacy infrastructure has nearly reached its limit and power generation companies are in a position where they need to invest into new generation facilities and grid lines. Decentralized solutions always can co-exist with new centralized infrastructure. And decentralized generation can bring more efficiency, a better balance to power consumption and contribute to energy security.

Who do you really compete with today?

With Capstone’s microturbines, we remain locked within a specific power range from 0 KW to 5 or 6 MW – a healthy range for onsite generation at modern industrial sites. Our main competitors are the major suppliers of alternative solutions. Within the aforementioned range we compete with all major suppliers of power generation, such as Caterpillar and General Electric. Over the past few years, these companies have acquired manufacturers of decentralized generation equipment, such as Jenbacher, FG Wilson, Solar Turbines, etc.

Do you see yourself acquiring assets too?

We are trying to increase our market presence through partnerships with other technology providers. We have recently signed an agreement with ZBB Energy for example. This is a company that operates on grid storage technologies, which is a completely new market for us. As more and more renewable energy sources come on stream, there is an increasing need to buffer generated power from such 'more volatile' generation sources to ensure reliable power supply.

Another US-based equipment supplier... What is your strategy behind these partnerships?

We try to develop our distributor relationships up to becoming Original Equipment Manufacturers (OEM). We have signed an OEM agreement with Capstone last year, which allows us to build customized solutions using microturbines. It allows us to substitute some of the components with local supplies.

Why is this interesting for Capstone though?

For them it is an opportunity to increase the sales volume. Formally speaking, in every big federal project, we have to be able to provide a certain extent of local content. When oil and gas companies purchase pipes for instance, they often need to be acquired from Russian suppliers. Capstone's focus remains very narrow and focuses on microturbines alone. In many cases, however, real solutions also require auxiliary equipment such as gas boosters, heat utilization equipment, special packaging, etc. While the core part will remain the Capstone engine, it is important to be able to customize as every industrial application has its particular requirements.

You entered the market early, but have completed a number of projects nonetheless. What were the more significant ones?

The key industry for us to supply has been oil and gas, representing roughly 60 percent of all our projects. In my view, the development of the Russian industry as a whole depends on our oil and gas sector. As government has been pushing to restrict flaring, energy-intensive oil and gas companies now have a greater incentive to convert gas into electricity onsite. For the next two to three years at least, this will remain our main target area.

Another interesting area is in 'linear objects:' gas pipelines, railways or telecommunication lines for instance. These linear objects require small quantities of power for equipment along the facility, such as switchgears, electrochemical protection and shut-off valves. Many are located in remote locations –such as the Yamal Peninsula– where microturbines can be a good fit. Around one third of our microturbines have been supplied to such applications serving customers in the likes of [Gazprom](#), Rostelecom and Russian Railways.

You have also concluded a partnership with Tatneft. How successful was this?

Our relationship is progressing. It is a good example of how government incentive programs can create a stable market for our solutions. If oil companies experience continuous pressures from government on issues such as gas flaring, they will increasingly switch from short term solutions to long term programs. With Tatneft, we have signed an agreement for 20 MW over three years.

Rustam Minnikhanov, President of Tatarstan, sent a positive message about your work there. How important are regional political relationships to develop the market?

He controls these assets regularly and will also be visiting our sites in a few days. It is very important for businesses to have regional governments recognizing their activities. Tatarstan is an advanced region that is always looking for innovative solutions, even beyond power generation.

In 2010 you expanded into Belarus followed by Kazakhstan the year after. What does your international strategy look like today?

Kazakhstan is another good example of a country that has traditionally been relying on its legacy infrastructure. Now, the country has started building new pipelines from Turkmenistan and Uzbekistan down to China. Our first big project there is the Beyneu–Bozoy–Shymkent pipeline, where we supply our microturbines as a power source along the pipeline.

Whereas in Kazakhstan we follow the oil and gas industry, Belarus is quite a different story. The country has an incentive program for industrial companies to install cogeneration systems. They have an Energy Efficiency Committee at Ministerial level, which has its own budget to invest in decentralized generation.

We are also trying to work in Ukraine, but the issue there is that the natural gas prices are very high at the moment. We are therefore trying to look for alternative fuels. The prospects of decentralized power market growth

in Ukraine are connected, primarily, with biogas power, but they are in the very beginning of the way. In addition to that, we will have our first project in the Baltic countries this year: a wastewater plant in Lithuania.

Will the new ZBB partnership also help you outside Russia?

ZBB does not only manufacture energy storage solutions, but also integrated power management frameworks – a hardware set of power electronics combined with management software – which can be hooked into various sources ranging from solar PV panels, wind turbines, microturbines, and so forth. These sources can then be managed through the unified DC bus solution for the benefit of the end customer. It is an interesting system that we are looking to merge with our Capstone systems. We are now going to build the first prototype in our facilities mid this year.

If all goes well from a regulatory point of view, what would be a realistic growth rate for both the market and BPC Engineering in the next few years?

It remains difficult to judge the market as a whole, as we operate in low-power segment of it. The overall market is growing about 15-25% annually as more and more industrial customers are installing distributed generation facilities, even without government support, mainly because of the surging tariffs. The natural gas cost, however, is expected to stabilize due to the many alternatives available.

From a policy point of view, it is also not necessary for the government to reinvent the wheel. Instead, we can draw on previous experience from Europe and the USA for example. There are certain qualification parameters we can put in place, related to efficiency and ecology for example. A possibility is to order grid companies to buy certain percentages of electricity from decentralized power generation. In the US for example, every electricity company needs to buy twenty percent of all electricity they sell from decentralized generation. This is good enough to let this market grow.

Would you have a final message to add?

We are always open to potential partnerships, whether with Russian or international entities. We are keen on cooperating to develop both our technical solutions as well at policy level. It is time to turn words into real solutions.