Flow batteries astana

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ASTANA - Two major renewables projects have been announced recently in Kazakhstan: the provision of solar panels to a 50 megawatt solar power plant and a project to test a 25 MW flow batteries system in the country.

Schneider Electric announced Sept. 9 that the company had been selected as the "solutions provider" for Kazakhstan"s first large photo-voltaic power plant, the biggest in the country and in the Commonwealth of Independent States (CIS), according to a company press release. Construction on the plant began in August 2014 and was ready for grid connection in April of this year, according to Schneider Electric. (It is unclear whether the plant has been connected to the grid or when that might happen.)

Schneider contributed 32 of its photovoltaic boxes, which are designed to be ready to connect when they arrive on a site. The company also built a sub-station for the project, according to the press release. Project management and engineering was done by Schneider Electric Germany.

"We are proud to have provided high-tech Schneider Electric solutions and products for the first large PV power plant built in Kazakhstan," said General Director of Schneider Electric Kazakhstan Irina Dmitrenko, per the press release. "For this project, Schneider Electric has provided the full electrical conversion chain, from grid to DC connection, with fully trained and experienced staff."

Chairman of Samruk Energy Almassadam Satkaliyev said, "We expect that the joint work with Primus Power, the leader in the development of energy storage technologies, will accelerate the development of renewable energy in Kazakhstan, and will provide us with opportunities for practical implementation of innovative solutions in the electricity sector," according to a story by Yahoo Finance.

Primus Power announced on Sept. 9 that it had secured $25 million in its Series D funding round, a late-stage round of funding usually used to help startups expand. I2BF Global Ventures led the round and the Russia-Kazakhstan Nanotechnology Fund (RKNF), a fund managed by I2BF, participated in the offering, Primus reported in a press release.

The company has also received strategic government grants totalling $20 million from the U.S. Department of Energy (DOE), the Advanced Research Projects Agency-Energy (ARPA-E), the Bonneville Power Administration (BPA), the California Energy Commission (CEC), and the U.S. Department of Defence (DOD) through its Environmental Security Technology Certification Program (ESTCP).

"Storing electrons safely, inexpensively, and with virtually no battery degradation, has long been a strategic imperative for the global energy industry, drawing world-class brains to find a winning solution," said Ilya Golubovich of I2BF in the Primus press release. "We are convinced that Primus Power has developed the

ultimate electron warehouse. The technology is field-proven and the company is at the right stage for I2BF to double down, and for RKNF to take a position."

The company has begun working out the details of fitting its batteries into the existing grid and expects to ship the first batteries to Kazakhstan by the end of this year or early next year, with eventual plans to assemble the systems in-country, he said.

Primus claims its batteries will last for 20 years or more. The six-year-old startup uses a single-loop flow battery design, which plates zinc on titanium-based electrodes to perform the key energy exchange, Greentech Media explained. Most other flow batteries run electrolytes through membranes, which Stepien said eventually must be replaced, unlike in Primus"s batteries.

Kazakhstan generated about 20 gigawatts of power in 2015, according to Greentech Media, mostly generated in coal-fired power plants. The country expects to produce 28 gigawatts by 2030.