

## QUARRY TECHNOLOGY OF THE FUTURE

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Today, transport plays an important role in our life. Most of the things that were not possible before are made possible by transport. But transport brings a lot of problems, one of which is environmental pollution.

Dump truck manufacturer Komatsu has seriously considered improving the environment and saving money on fuel by converting its mining truck to an all-electric one.

The eDumper – this is the name given to this electric «monster» weighing 45 tons and the ability to lift more than 60 tons at the same time. An interesting feature of the eDumper is that it basically does not need to be recharged. This phenomenon is possible thanks to the innovative regenerative braking system.

When the eDumper moves uphill, it loses some of its charge, but during the descent downhill, it generates more electricity than it spent on the ascent. Thus, thanks to new technologies, this electric giant is able to produce more electricity than it spends.

The eDumper is based on the well-known Komatsu HD 605-7 dump truck. This dump truck is driven by an electric motor, namely a battery, the capacity of which is about 600 kWh, and the weight is approximately 5 tons. What would you understand, the Tesla Model S long-range battery weighs 6.5 times less. The maximum speed of the dump truck with such dimensions reaches 70 km/h. Thanks to regenerative braking, the eDumper can produce about two hundred kWh of excess energy daily, which is equivalent to 75 megawatt hours per year. A similar dump truck without an electric motor consumes 10,000 to 20,000 gallons of diesel fuel annually. This means that up to 196 metric tons of carbon dioxide is saved every year. Also, the rejection of diesel fuel towards the use of electricity will save from 45,000 to 50,000 tons of diesel fuel per year.