CLAIMS

1. A decentralized organic waste recycling system in the form of a container, comprising a pre-treatment unit, an environmentally friendly feed production unit and a methane generation and utilization unit, which are connected in sequence,

wherein the pre-treatment unit comprises an automatic organic waste sorting machine capable of obtaining a homogenous organic slurry;

the environmentally friendly feed production unit comprises a slurry storage device, an ultrasonic treatment machine, an integrated bioreactor, a sludge heating cylinder, a sludge dryer and a pelletizer;

the methane generation and utilization unit comprises a methane production bioreactor, a bag filter, a hydraulic sealing device, a gas purifier, a biogas tank and a biogas generator;

wherein the automatic organic waste sorting machine is installed at the sites where kitchen waste is produced for pre-treatment of kitchen waste, and the slurry storage device has a material outlet connected to the material inlet of the ultrasonic treatment machine; the ultrasonic treatment machine has a material outlet connected to the material inlet of the integrated bioreactor; the integrated bioreactor has a sludge outlet connected to the material inlet of the sludge heating cylinder; the sludge heating cylinder has a material outlet connected to the material inlet of the sludge dryer; the sludge dryer has a material outlet connected to the material inlet of the pelletizer; the integrated bioreactor has a nutrient solution outlet connected to the material inlet of the methane production bioreactor; the methane production bioreactor has a liquid outlet connected to the material inlet of the bag filter; the bag filter has a material outlet connected to the material inlet of the integrated bioreactor; the methane production bioreactor has a gas outlet connected to the material inlet of the hydraulic sealing device; the hydraulic sealing device has a material outlet connected to the material inlet of the gas purifier; the gas purifier has a material outlet connected to the material inlet of the biogas tank; the biogas tank has a material outlet connected to the material inlet of the biogas generator; and the biogas generator is used to power the decentralized organic

waste recycling system in the form of a container.

2. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the environmentally friendly feed production unit further comprises an oil storage cylinder, which has an inlet connected to the waste grease outlet of the integrated bioreactor.

3. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the environmentally friendly feed production unit further comprises a hot oil cylinder and a hot oil pump, and the material inlet and material outlet of the hot oil pump are connected to the material outlet and material inlet of the hot oil cylinder respectively, for supplying the required hot oil to the sludge dryer.

4. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the methane generation and utilization unit further comprises a hot water tank having a material outlet connected to the material inlet of the methane production bioreactor, and a generator used to power the hot water tank.

5. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the methane generation and utilization unit further comprises several buffer tanks having inlets connected to the liquid outlet of the methane production bioreactor and/or the material outlet of the bag filter respectively.

6. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the system further comprises a base tank, an acid tank, and a pH adjustment device having inlets connected to the nutrient solution outlet of the integrated bioreactor and also to the outlets of the base tank and acid tank respectively, and the pH adjustment device has an outlet connected to the material inlet of the methane production bioreactor.

7. The decentralized organic waste recycling system in the form of a container according to any one of claims 1 to 6, wherein the sludge dryer, the hot oil cylinder, the hot oil pump, the generator, the sludge heating cylinder and the hot water tank are disposed at the upper layer of the container.

8. The decentralized organic waste recycling system in the form of a container

according to any one of claims 1 to 6, wherein the bag filter, the biogas tank, the gas purifier, the buffer tanks, the base tank, the acid tank, the ultrasonic treatment machine, the pH adjustment device and the hydraulic sealing device are disposed at the lower layer of the container.

9. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the system further comprises a central odor treatment device disposed outside the container, for centralized processing of exhaust gases generated by the pre-treatment unit, the environmentally friendly feed production unit and the methane generation and utilization unit.

10. The decentralized organic waste recycling system in the form of a container according to claim 1, wherein the system further comprises an automatic control device that can automate the entire system.