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(54) **MICROGRID POWER SYSTEM**

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(57) **ABSTRACT**

Embodiments are directed to a microgrid power system, and applications thereof. In an embodiment, the microgrid power system comprises a power station including an AC power source and a stabilizing battery system. The power station may be configured to generate an AC power and to provide the first AC power to a power distribution network. A plurality of load centers may be connected to the power distribution system. Each load center may include a local battery and a switch connecting the power station to a local load. A system controller may open the switch to provide power from the local battery to the local load, and close the switch to provide power from the power station to the local load. In an embodiment, a microgrid controller may determine an amount of AC power generated by the power station that may be consumed by each load center.