This invention discloses a multi-mode waste-heat recovery device for the cooling water jacket of a pot furnace, belonging to the technical field of waste-heat recovery and utilization. The device comprises a pot-furnace cooling water jacket, a cooling tower, a first water-to-water heat exchanger, a second water-to-water heat exchanger, a waste-heat power-generation boiler, a refrigeration unit, a space-heating system, and a circulating cooling-water pump set. The outlet pipeline of the pot-furnace cooling water jacket is connected to the first water-to-water heat exchanger. The hot-side outlet of the first heat exchanger splits into two branches: one connects to the cooling tower, and the other—through a valve set—can selectively connect to the waste-heat power-generation boiler, the refrigeration unit, the space-heating system, or the second water-to-water heat exchanger.

(FIG. 1)