

## ABSTRACT

Disclosed are a method and a device for providing heat and carbon dioxide to vegetables and/or algae using power station flue gas. The method comprises the steps of: introducing the flue gas into a first-stage heat exchange station (5) to carry out a first heat exchange with air and provide hot air to a vegetable greenhouse (6) and/or an algae cultivation room (9); introducing a part of the flue gas which has experienced cooling in the first-stage heat exchange station into a second-stage heat exchange station (12) to carry out a second heat exchange with air and cool the flue gas temperature to an extent suitable for extracting carbon dioxide; extracting carbon dioxide from the flue gas and supplying the carbon dioxide into the vegetable greenhouse and/or the microalgae carbon-absorbing pool of the algae cultivation room. The device mainly consists of a flue gas delivery pipe (4) connected to a flue gas induced draught fan (3), the first stage heat exchange station (5), a flue gas returning pipe (1) connected to a chimney, the second stage heat exchange station (12), a CO<sub>2</sub> pressure swing adsorption device (14) and a CO<sub>2</sub> gas storage tank (16), etc. It reduces energy waste and environmental pollution due to direct emission by means of comprehensive utilization of the flue gas, at the same time solves the difficult problem that the yield of vegetables and/or algae is insufficient in winter.