CLAIMS:

1. A method for heating comprising:

providing in a tank a cooling liquid formed of a dielectric oil material;

the tank containing a plurality of computer processing units, each comprising at least one computer processing board carrying electrical components which operates to carry out computer processing operations while generating heat;

causing the cooling liquid to pass through the tank to directly contact the plurality of electrical components while causing cooling of the computer processing units so that the cooling liquid is heated while cooling the computer processing units so as generate a first stream of the cooling liquid upstream of the heating of the cooling liquid and a second stream of heated cooling liquid downstream of the heating;

circulating the heated cooling liquid from the second stream through a refrigeration cycle heat pump to the first stream so that the heat pump extracts heat from the second stream to return to the first stream;

the heat pump transferring the extracted heat from the cooling liquid to a heat transfer liquid in a circuit so that the heat transfer liquid passes in the circuit from an inlet stream of the heat transfer liquid entering the heat pump to an exit stream of the heat transfer liquid leaving the heat pump;

passing the heat transfer liquid in the circuit through a heat source so that the heat source adds heat to the heat transfer liquid in the circuit and so that the heat transfer liquid passes both through the heat source and the heat pump for receiving heat from both;

and passing the heat transfer liquid through one or more heat dissipating loads to transfer heat from the heat transfer liquid to said one or more loads.

2 A method for heating comprising:

providing in a tank a cooling liquid formed of a dielectric oil material;

the tank containing a plurality of computer processing units, each comprising at least one computer processing board carrying electrical components which operates to carry out computer processing operations while generating heat;

causing the cooling liquid to pass through the tank to directly contact the plurality of electrical components while causing cooling of the computer processing units so that the cooling liquid is heated while cooling the computer processing units so as generate a first stream of the cooling liquid upstream of the heating of the cooling liquid and a second stream of heated cooling liquid downstream of the heating;

circulating the heated cooling liquid in a first fluid circuit from the second stream through a refrigeration cycle heat pump so that the heat pump extracts heat from the first stream in the first fluid circuit and transfers the extracted heat to the second stream in the second fluid circuit;

the heat pump transferring the extracted heat from the cooling liquid to a heat transfer liquid in a second fluid circuit so that the heat transfer liquid passes in the second fluid circuit from an inlet stream of the heat transfer liquid entering the heat pump to an exit stream of the heat transfer liquid leaving the heat pump;

the heat pump, the first fluid circuit and the second fluid circuit acting to transfer all of the heat from the first stream in the first fluid circuit to the second stream in the second fluid circuit;

passing the heat transfer liquid through one or more heat dissipating loads to transfer heat from the heat transfer liquid to said one or more heat dissipating loads;

passing the heat transfer liquid in the second fluid circuit downstream of the heat pump through a combustion heat source so that the combustion heat source directly applies heat to the heat transfer liquid in the second circuit to increase a temperature of the heat transfer liquid from a temperature at the outlet of the heat pump to at least 90 degrees C for entering said one or more heat dissipating loads.

3. The method according to claim 1 or 2 wherein the heat pump uses CO2 as a refrigerant.

4. The method according to any preceding claim wherein the temperature in the second stream of the cooling liquid is less than 60 degrees C and the temperature in the exit stream of the heat transfer liquid is greater than 70 degrees C.

5. The method according to any preceding claim wherein the temperature in the second stream of the cooling liquid is in the range 40 degrees C to 60 degrees C and the temperature in the exit stream of the heat transfer liquid is in the range 70 degrees C to 95 degrees C.

6. The method according to any preceding claim wherein the temperature in the first stream of the cooling liquid is less than 45 degrees C and the temperature in the inlet stream of the heat transfer liquid is greater than 50 degrees C.

7. The method according to any preceding claim wherein the temperature in the first stream of the cooling liquid is in the range 20 degrees C to 45 degrees C and the temperature in the inlet stream of the heat transfer liquid is in the range 50 degrees C to 70 degrees C.

8. The method according to any preceding claim wherein the cooling liquid is circulated in the first fluid circuit between the second and first streams by a liquid pump.

9. The method according to any preceding claim wherein the heat pump is located outside the tank.

10. The method according to any preceding claim wherein the heat source comprises a boiler.

11. The method according to claim 10 wherein the boiler and said one or more heat dissipating loads comprise an existing installation and the tank, a cooling liquid, plurality of computer processing units and heat pump are added to the existing installation as a supplementary heat source.

12. The method according to any preceding claim wherein the cooling liquid is a vegetable oil.

13. The method according to any preceding claim wherein the cooling liquid is soy bean oil or canola oil.

14. The method according to any preceding claim wherein the cooling liquid has the one or more of the following characteristics:

Density: Near or in the range of 0.92 g/m3 (7.667 lbs/gal)

Kinematic Viscosity: Near or in the range of 33-35 mm^2/s @ 40°C or near or in the range of 15 cSt @ 70°C

Dielectric Breakdown: 2mm [kV] ≥35 (ASTM D6871)

Boiling point: ≥360°C

Flash point: ≥265°C (Closed Cup)

Auto/self-ignition temperature: 401-404°C (ASTM E659)

Vapor Pressure: Near or in the range 0 PA @ ≤200°C

Thermal Conductivity: Near or in the range of 0.15089 W/mK @ 70°C

Specific Heat: Near or in the range of 2.3472 kJ/kgK @ 70°C.