CLAIMS:

1. A fluid for energy recovery use in a closed well system having an inlet well, an outlet well and lateral interconnection between said inlet well and said outlet well and within a downhole heat source, said fluid having a nonlinear temperature enthalpy relationship within said lateral interconnection at pressures greater than 10MPa and temperatures less than 180°C to maximize the temperature differential and heat transfer between the fluid and the surrounding downhole heat source.

2. The fluid as set forth in claim 1, wherein said fluid includes magnesium sulphate.

3. A method of generating power, comprising:
providing a closed well loop circuit having an inlet and an outlet connected with a lateral conduit within a geological heat energy bearing formation;

providing a power generation apparatus in operative communication with said well loop;

circulating a working fluid having a nonlinear temperature enthalpy relationship within said lateral conduit at pressures greater than 10 MPa and temperatures less than 180°C through said circuit to recover heat energy from said formation to maximize the temperature differential and heat transfer between said fluid and the surrounding formation;

cooling said working fluid prior to recirculation in said loop at said inlet; and

converting energy from said fluid into electrical power.

4. The method as set forth in claim 3, wherein said working fluid is cooled to a sub-zero°C temperature.

5. The method as set forth in claim 3 or claim 4, wherein circulation is driven by thermosiphon action.

6. The method as set forth in any one of claims 3 through 5, further including providing a plurality of lateral conduits in spaced relation each connected to said inlet and said outlet.

7. A method of repurposing an oilfield having pre-existing production wells and injection wells in spaced relation in a geological heat bearing formation to capture heat energy, comprising:

providing a first node having a production well and a first injection well in fluid communication with a power generation apparatus;

providing a second node having a production well and a second injection well in fluid communication with a power generation apparatus in spaced relation to said first node;

connecting said first node and said second node in a subterranean horizontal connection within said heat bearing formation;

circulating heated output fluid from said power generation apparatus of said first node to an input of said power generation apparatus of said second node with the subterranean connection, said fluid having a nonlinear temperature enthalpy relationship within said subterranean horizontal connection at pressures greater than 10MPa and temperatures less than 180°C to recover heat energy from said formation to maximize the temperature differential and heat transfer between said fluid and the surrounding formation; and

converting energy from said fluid into electrical power.

8. An energy production method, comprising:

providing a suspended oilfield having injection and production well pairs;

connecting a power generation apparatus between a production well of one well pair and the injection well of an adjacent well pair in a subterranean loop, said loop having at least one lateral interconnection between said production well and said injection well, said lateral interconnection being within a subterranean heat source;

circulating a fluid through said loop to recover subterranean heat energy, said fluid having a nonlinear temperature enthalpy relationship within said lateral interconnection at pressures greater than 10MPa and temperatures less than 180°C to maximize the temperature differential and heat transfer between the fluid and the surrounding downhole heat source; and

utilizing thermal energy from said fluid directly and/or converting energy from said fluid into electrical power.

9. A geothermal method, comprising:

drilling a first generally U shaped bore hole into an earth formation and a second generally U shaped bore hole in spaced relation therefrom, said earth formation having a down hole heat source;

providing a power generation apparatus;

connecting in a subterranean position said apparatus to an output of said first U shaped bore hole and an inlet of said second U shaped bore hole with a lateral interconnection;

circulating a fluid through each said bore hole, said fluid having a nonlinear temperature enthalpy relationship within said lateral interconnection at pressures greater than 10MPa and temperatures less than 180°C to maximize the temperature differential and heat transfer between the fluid and the surrounding downhole heat source; and

converting energy recovered from said fluid into electrical power.

10. A method of forming a geothermal heat exchanger, comprising:

providing an unused drilled well;

drilling a second well in spaced relation to said unused well;

connecting said unused drilled well and said second well within a geothermal zone and a second zone spaced therefrom in a continuous loop having at least one lateral interconnection;

circulating a working liquid through said loop for heat exchange within said loop, said fluid having a nonlinear temperature enthalpy relationship within said lateral interconnection at pressures greater than 10MPa and temperatures less than 180°C to maximize the temperature differential and heat transfer between the fluid and the surrounding geothermal zone.

11. A method for recycling unused drilled wells, comprising:

designating a first unused well as a receiving hub;

drilling a second new well adjacent said hub;

drilling at least a third new well spaced from said hub and said second new well;

connecting in fluid communication each of said second new well and said third well with said hub in individual closed loops each having at least one lateral interconnection, a first section of each loop being within a geothermal zone and a second section being above said geothermal zone;

circulating a working fluid within said loops, said fluid having a nonlinear temperature enthalpy relationship within said lateral interconnection at pressures greater than

10MPa and temperatures less than 180°C to maximize the temperature differential and heat transfer between the fluid and the surrounding downhole heat source; and

capturing heat energy transferred from said geothermal zone.