CLAIMS

1. ~~Method~~A method for converting energy, comprising:
   a) conversion of a non-gaseous carrier medium into a gaseous carrier medium by the introduction of thermal energy, so that the gaseous carrier medium rises and gains potential energy;
   b) back-conversion of the gaseous carrier medium at a specified height into a non-gaseous carrier medium by cooling the gaseous carrier medium via a transport medium; ~~and~~
   c) conversion of the potential energy of the recovered non-gaseous carrier medium into another energy form; and
   d) utilizing a heating of the transport medium resulting from the cooling of the carrier medium to make a contribution, by means of a heat pump, to the thermal energy introduced.

2. ~~Method~~The method according to Claim 1, wherein the ~~further~~ thermal energy is introduced into the carrier medium distributed over the height travelled by the gaseous carrier medium.

3. ~~Method~~The method according to Claim 1 ~~or 2~~, wherein the introduced thermal energy comprises energy ~~is~~ recovered from geothermal heat, water heat, air heat, a fossil energy carrier, a nuclear energy carrier and/or solar energy.

~~4. Method according to any one of Claims 1 to 3, wherein the back-conversion of the gaseous carrier medium into a non-gaseous carrier medium takes place by cooling the gaseous carrier medium.~~

~~5~~4. ~~Method~~The method according to Claim 14, wherein the cooling takes place in that a transport medium is passed through cooling areas arranged at the specified height.

~~6. Method according to Claim 4 or 5, wherein the cooling takes place via a transport medium and wherein a heating of the transport medium resulting from the cooling of the carrier medium is utilised to make a contribution to the thermal energy introduced.~~

~~7~~5. ~~Method~~The method according to ~~any one of~~ Claims ~~1 to 6~~, wherein to support the back conversion a substance is introduced directly into the carrier medium.

~~8. Method according to any one of Claims 1 to 3, wherein the back-conversion of the gaseous carrier medium into a non-gaseous carrier medium takes place at the specified height because of cooling of the gaseous carrier medium on the upward movement.~~

~~9~~6. ~~Method~~The method according to ~~any one of~~ Claims ~~1 to 8~~, wherein the recovered non-gaseous carrier medium is temporarily stored before conversion of the recovered potential energy of the carrier medium into another energy form.

~~10~~7. ~~Method~~The method according to ~~any one of~~ Claims ~~1 to 9~~, wherein to convert the potential energy of the carrier medium into another energy form, the potential energy is firstly converted into kinetic energy by dropping the recovered non-gaseous carrier medium from a greater height to a lesser height and then the kinetic energy is converted into another energy form.

~~11~~8. ~~Method~~The method according to ~~any one of~~ Claims ~~1 to 10~~, wherein the potential energy is converted into mechanical energy, electrical energy, energy to generate a chemical energy carrier and/or energy to generate a physical energy carrier.

~~12~~9. ~~Method~~The method according to ~~any one of~~ Claims ~~1 to 11~~, wherein the recovered non-gaseous carrier medium is temporarily stored after conversion of the potential energy into another energy form.

~~13~~10. ~~Method~~ The method according to ~~any one of~~ Claims ~~1 to 12~~, wherein the recovered non-gaseous carrier medium, after conversion of the potential energy into another energy form, is used further at least partly in a closed circuit which continues with step a).

~~14~~11. ~~Method~~ The method according to ~~any one of~~ Claims ~~1 to 13~~, wherein the non-gaseous carrier medium in step a) is distilled by conversion into a gaseous carrier medium, and wherein the distilled recovered non-gaseous carrier medium is at least

partly extracted before or after conversion of the potential energy into another energy form.

~~15~~12. ~~Method~~The method according to ~~any one of~~ Claims 1 ~~to 14~~, wherein the gaseous carrier medium rises in a cavity comprising a filling medium that is carried along by the carrier medium.

13. The method according to claim 1, wherein to convert the potential energy of the carrier medium into another energy form, the recovered non-gaseous carrier medium is dropped from a greater height to a lesser height to drive a turbine arranged at the lesser height.

14. The method according to claim 1, wherein the cooling of the gaseous carrier medium via a transport medium is performed by means of a collector, which has a cooling unit that is configured for through-flow of the transport medium to cool the gaseous carrier medium, and wherein utilizing the heating of the transport medium resulting from the cooling of the carrier medium comprises guiding the transport medium heated by the cooling of the carrier medium to the aggregation state changer by means of a heat return line.

15. The method according to claim 14, wherein the transport medium is specifically heated by the cooling of the carrier medium.

16. The method according to claim 1, wherein utilizing the heating of the transport medium resulting from the cooling of the carrier medium comprises guiding the transport medium heated by the cooling of the carrier medium to the aggregation state changer by means of a heat return line and wherein the heat return line is used to enable an additional contribution only to the thermal energy introduced.

~~16~~17. ~~Device~~A device for conversion of energy, comprising:

- a cavity;
- an aggregation state changer arranged at the lower end of the cavity and configured to convert a non-gaseous carrier medium into a gaseous carrier medium by the introduction of thermal energy so that the carrier medium rises in the cavity and gains potential energy;

- a collector arranged at the upper end of the cavity and configured to collect a non-gaseous carrier medium recovered from the gaseous carrier medium, wherein the collector has a cooling unit that is configured for through-flow of a transport medium to cool the gaseous carrier medium to convert the gaseous carrier medium back into a non-gaseous carrier medium; ~~and~~
- an energy conversion arrangement configured to convert the potential energy of the recovered non-gaseous carrier medium into another energy form; and
- a heat return line configured to guide the transport medium heated by the cooling of the carrier medium to the aggregation state changer in order to contribute, by means of a heat pump, to the thermal energy introduced.

~~17~~18. ~~Device~~The device according to Claim ~~16~~ 17, further comprising an energy introduction element configured to introduce thermal energy distributed over the height of the cavity.

~~18~~19. ~~Device~~The device according to Claim ~~16 or~~ 17, further comprising an energy recovery element configured to recover ~~the~~ introduced thermal energy from geothermal heat, water heat, air heat, fossil energy carriers, nuclear energy carriers and/or solar energy.

~~19. Device according to any one of Claims 16 to 18, wherein the collector has a cooling unit that is configured to convert the gaseous carrier medium back into a non-gaseous carrier medium by cooling.~~

20. ~~Device~~The device according to Claim ~~19~~ 17, wherein the cooling unit has cooling areas through which a transport medium flows in order to cool the gaseous carrier medium.

~~21. Device according to Claim 19 or 20, further comprising a heat return line, wherein the cooling unit is configured for through-flow of a transport medium to cool the gaseous carrier medium, and wherein the heat return line is configured to guide the transport medium heated by the cooling to the aggregation state changer arranged at the lower end of the cavity in order to contribute to the thermal energy introduced.~~

~~22~~21. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 21~~ 17, wherein the collector has means for introduction of a substance directly into the carrier medium to support the back-conversion of the gaseous carrier medium into a non-gaseous carrier medium.

~~23. Device according to any one of Claims 16 to 18, wherein the height of the cavity is dimensioned such that back-conversion of the gaseous carrier medium into a non-gaseous carrier medium at the upper end of the cavity takes place because of cooling of the gaseous carrier medium on the upward movement.~~

~~24~~22. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 23~~ 17, further comprising an intermediate store configured for intermediate storage of the recovered non-gaseous carrier medium before conversion of the potential energy of the carrier medium into another energy form.

~~25~~23. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 24~~ 17, wherein the energy conversion arrangement comprises a fall path arranged to convert the potential energy into kinetic energy by dropping the recovered non-gaseous carrier medium from a greater height to a lesser height, and an energy converter configured to convert the kinetic energy into another energy form.

~~26~~24. ~~Device~~ The device according to ~~any one of~~ Claims ~~16 to 25~~ 17, wherein the energy conversion arrangement is configured to convert the potential energy of the recovered non-gaseous carrier medium into mechanical energy, electrical energy, energy to generate a chemical energy carrier or energy to generate a physical energy carrier.

~~27~~25. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 26~~ 17, further comprising an intermediate store configured for intermediate storage of the recovered non-gaseous carrier medium after conversion of the potential energy into another energy form.

~~28~~26. ~~Device~~ The device according to ~~any one of~~ Claims ~~16 to 27~~ 17, wherein the energy conversion arrangement is arranged such that the recovered non-gaseous carrier medium, after conversion of the potential energy into another energy form, is supplied back to the aggregation state changer arranged at the lower end of the cavity.

2927. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 28~~ 17, wherein the non-gaseous carrier medium is distilled by conversion into a gaseous carrier medium, further comprising an extraction connection configured for at least partial extraction of the recovered non-gaseous carrier medium before or after conversion of the potential energy into another energy form.

3028. ~~Device~~The device according to ~~any one of~~ Claims ~~16 to 29~~ 17, wherein the cavity comprises a filling medium that is carried along by the carrier medium.

3129. ~~System~~A system comprising a device according to ~~any one of~~ Claims ~~16 to 30~~ and at least one device configured to recover thermal energy that is made available to the device, ~~according to any one of Claims 16 to 30~~said at least one device comprising

- a cavity;
- an aggregation state changer arranged at the lower end of the cavity and configured to convert a non-gaseous carrier medium into a gaseous carrier medium by the introduction of thermal energy so that the carrier medium rises in the cavity and gains potential energy;
- a collector arranged at the upper end of the cavity and configured to collect a non-gaseous carrier medium recovered from the gaseous carrier medium; and
- an energy conversion arrangement configured to convert the potential energy of the recovered non-gaseous carrier medium into another energy form.

30. The device according to claim 17, wherein the energy conversion arrangement comprises a fall path configured to enable a dropping of the recovered non-gaseous carrier medium from a greater height to a lesser height, and wherein the energy conversion arrangement comprises a turbine which is arranged at the lesser high and which is configured to be driven by dropping carrier medium.

31. The device according to Claim 17, wherein the heat return line is used to enable an additional contribution only to the thermal energy introduced.

32. The device according to Claim 17, wherein the cooling unit is specifically configured to support a heating of the transport medium by the cooling of the carrier medium.