What is claimed is:

1. A hydrogen distribution system for transporting hydrogen from a hydrogen supply source to at least one end-user location comprising:

an existing pipeline;

a hydrogen delivery line configured to carry pressurized hydrogen, said hydrogen delivery line located inside the existing pipeline such that a sweeper gas within the existing pipeline flows around an exterior of the hydrogen delivery line and purges any hydrogen that leaks from said hydrogen delivery line;

at least one inlet into the hydrogen delivery line configured to allow hydrogen to be injected into the hydrogen delivery line; ~~and~~

at least one outlet from the hydrogen delivery line configured to allow hydrogen to be withdrawn from the hydrogen delivery line;~~.~~ and

a safety pipe located inside of the existing pipeline and around the hydrogen delivery line such that a channel is formed between the exterior of the hydrogen delivery line and an interior of said safety pipe, the channel sized to allow the sweeper gas to flow through the existing pipeline and along the exterior of the hydrogen delivery line.

2. The hydrogen distribution system of Claim 1, wherein the existing pipeline is a gas transmission pipeline and the sweeper gas is one of the following: natural gas; or synthetic natural gas.

~~3. The hydrogen distribution system of Claim 1, further comprising:~~

~~a safety pipe located inside of the existing pipeline and around the hydrogen delivery line such that a channel is formed between the exterior of the~~

~~hydrogen delivery line and an interior of said safety pipe, the channel sized to allow the sweeper gas to flow through the existing pipeline and along the exterior of the hydrogen delivery line.~~

~~4.~~3. The hydrogen distribution system of Claim 1~~3~~, wherein the safety pipe is one of the following materials: a plastic; or a composite.

~~5.~~4. The hydrogen distribution system of Claim 1~~3~~, wherein the existing pipeline is one of the following: a water pipeline; a sewer pipeline; or a storm drain pipeline.

~~6.~~5. The hydrogen distribution system of Claim 1~~3~~, wherein:

the existing pipeline includes a gas transmission line coupled with at least one of the following: a water pipe; a sewer pipe; or a storm drain;

the at least one inlet into the hydrogen delivery line occurs in a gas transmission pipeline; and

the hydrogen withdrawn from the hydrogen delivery line occurs after the hydrogen has been transmitted through a water pipe, sewer pipe or storm drain.

~~7. The hydrogen distribution system of Claim 2, further comprising:~~

~~at least one hydrogen sensor located at an exit of the existing pipeline, the at least one hydrogen sensor configured to monitor for a presence and amount of hydrogen that has leaked from the hydrogen delivery line into the sweeper gas.~~

~~8.~~6. The hydrogen distribution system of Claim 1 or 2, further comprising:

at least two in-line hydrogen sensors located at different locations within the existing pipeline;

a data system configured to monitor the at least two in-line hydrogen sensors to determine a level of hydrogen for each in-line hydrogen sensor;

a recording system configured to separately record the hydrogen levels detected by each in-line hydrogen sensor; and

a programmable alerting system configured to trigger an alert based on the hydrogen levels.

~~9.~~7. The hydrogen distribution system of Claim ~~45~~, further comprising:

at least one hydrogen sensor located at an exit of the safety pipe, the at least one hydrogen sensor configured to monitor for the presence and amount of hydrogen that has leaked from the hydrogen delivery line into the safety pipe.

~~10.~~8. The hydrogen distribution system of Claim ~~45~~, further comprising:

at least two in-line hydrogen sensors located at different locations within the safety pipe;

a data system configured to monitor the at least two in-line hydrogen sensors to determine a level of hydrogen for each in-line hydrogen sensor;

a recording system configured to separately record said hydrogen levels detected by each in-line hydrogen sensor; and

a programmable alerting system configured to trigger an alert based on the hydrogen levels.

~~11.~~9. The hydrogen distribution system of Claim ~~68~~, further comprising:

at least one shutoff valve configured to selectively isolate and close off sections of the hydrogen delivery line upon being triggered by the alert of the programmable alerting system.

~~12.~~10. The hydrogen distribution system of Claim ~~8~~10, further comprising:

at least one shutoff valve configured to selectively isolate and close off

sections of the hydrogen delivery line upon being triggered by the alert of the programmable alerting system.

~~13. The hydrogen distribution system of Claim 1, wherein said hydrogen delivery line is FRP pipe codified for use with hydrogen.~~

~~14. The hydrogen distribution system of Claim 1, further comprising:~~

~~at least one coupling device, each coupling device connecting a first section of the hydrogen delivery line inside the existing pipeline with a second section of the hydrogen delivery line outside of said existing pipeline.~~

~~15. The hydrogen distribution system of Claim 14, wherein the hydrogen delivery line is made of FRP pipe codified for use with hydrogen, and wherein the second section of the hydrogen delivery line is a storage area.~~

~~16. The hydrogen distribution system of Claim 15, wherein the hydrogen delivery line includes at least one hydrogen sensor, each of the at least one hydrogen sensors configured to separately produce data related to a detected hydrogen level.~~

~~17. The hydrogen distribution system of Claim 16, further comprising:~~

~~a means for monitoring said hydrogen levels detected by each of the at least one hydrogen sensors; and~~

~~an alerting means configured to generate an alert when the detected hydrogen level indicates that hydrogen is leaking from the hydrogen delivery line.~~

~~18.~~11. The hydrogen distribution system of Claim 10~~17~~, further comprising:

at least one shutoff valve, each shutoff valve connected to a coupling, shutoff valves being located at each interval of a pre-determined length of the hydrogen delivery line, each shutoff valve and coupling configured to selectively close; and

a processor configured to identify a location of a hydrogen leak based on

the hydrogen levels detected by each of the at least one hydrogen sensors,

wherein each shutoff valve and coupling is configured to close to isolate the hydrogen delivery line around the pre-determined length of the hydrogen delivery line in which the hydrogen leak is identified.

~~19. The hydrogen distribution system of Claim 1, further comprising:~~

~~a valve connected to the existing pipeline to control flow therethrough;~~

~~a first riser connected to the existing pipeline on a first side of the valve; and~~

~~a second riser connected to the existing pipeline on a second side of the valve,~~

~~wherein the hydrogen delivery line is configured to direct hydrogen through the risers and coupling to bypass the valve.~~

~~20.~~12. A method of transporting hydrogen from a producing location to at least one end user location comprising:

producing hydrogen from an energy source at the producing location;

storing said hydrogen in at least one hydrogen storage container;

locating a hydrogen delivery line inside an existing pipeline, the hydrogen delivery line configured to carry pressurized hydrogen;

injecting a sweeper gas around the exterior of the hydrogen delivery line to purge any hydrogen leaking from said hydrogen delivery line;

injecting hydrogen into the hydrogen delivery line from the at least one hydrogen storage containers; and

withdrawing said hydrogen from the hydrogen delivery line at the at least one end user locations~~.~~;

~~21. The method of Claim 20 wherein:~~

~~the energy source is fixed at the producing location; and~~

~~the method of transporting hydrogen further includes transporting the hydrogen using at least one of the following: a truck; a train; or a ship.~~

~~22. The method of Claim 20~~ wherein:

the energy source is fixed at the producing location;~~ and~~

the method of transporting hydrogen further includes transporting the hydrogen using a lighter-than-air airship;~~.~~ and

~~23. The method of Claim 22,~~ wherein transporting the hydrogen using a lighter-than-air airship comprises:

pumping the hydrogen into at least two vessels;

after pumping the hydrogen into the at least two vessels, loading said vessels onto the lighter-than-air airship;

flying the lighter-than-air airship to a terminus location;

unloading the vessels from said lighter-than-air airship at the terminus location;

loading at least one empty vessel onto the lighter-than-air airship; and

returning the at least one empty vessels to the producing location.

~~24. The method of Claim 22, wherein the fixed energy source is a renewable energy source being at least one of the following: wind, solar, hydro, biomass, or geothermal power.~~

~~25. The method of Claim 20, wherein the at least one hydrogen storage containers are made of FRP pipe codified for use with hydrogen.~~

~~26. The method of Claim 20, wherein:~~

~~the existing pipeline is a gas transmission pipeline; and~~

~~the sweeper gas is one of the following: natural gas; or synthetic natural gas.~~

~~27.~~13. ~~The method of Claim 1223~~, wherein the terminus location includes a cradle comprising at least two anchor points configured to secure the lighter-than-air airship with tie-down cables.

~~28.~~14. The method of Claim 13~~27~~, wherein the cradle is configured to rotate to point in a direction of oncoming wind.

~~29. The method of Claim 20, further comprising:~~

~~placing a safety pipe inside of said existing pipeline and around an exterior of the hydrogen delivery line.~~

~~30. The method of Claim 29, wherein the existing pipeline is one of the following: a water pipeline; a sewer pipeline; a storm drain pipeline; an underground utility corridor; a rail line; or a tube.~~

15. A method of transporting hydrogen from a producing location to at least one end user location comprising:

producing hydrogen from an energy source at the producing location;

storing said hydrogen in at least one hydrogen storage container;

locating a hydrogen delivery line inside an existing pipeline, the hydrogen delivery line configured to carry pressurized hydrogen;

injecting a sweeper gas around the exterior of the hydrogen delivery line to purge any hydrogen leaking from said hydrogen delivery line;

injecting hydrogen into the hydrogen delivery line from the at least one

hydrogen storage containers; and

withdrawing said hydrogen from the hydrogen delivery line at the at least one end user locations;

~~31. The method of Claim 20,~~ wherein:

the existing pipeline includes a gas transmission line coupled with at least one of the following: a water pipe; sewer pipe; or storm drain;

injecting the hydrogen into at least one inlet into the hydrogen delivery line occurs in a gas transmission pipeline; and

withdrawing the hydrogen from the hydrogen delivery line occurs after the hydrogen has been transmitted through a water pipe, a sewer pipe or a storm drain.

~~32. The method of Claim 30, wherein the at least one end user location is an electric utility substation.~~

~~33. The method of Claim 30, wherein the at least one end user location is a commercial or industrial facility.~~

~~34.~~16. The method of Claim 15~~33~~, further comprising:

utilizing the hydrogen in an industrial process feedstock~~;~~.

wherein the at least one end user location is a commercial or industrial facility.

~~35. The method of Claim 30, wherein the at least one end user location is a filling station for dispensing hydrogen to fuel cell vehicles.~~

~~36. The method of Claim 35, wherein the filling station compresses the hydrogen to a pressure suitable for dispensing to hydrogen fuel cell cars.~~

~~37. The method of Claim 35, wherein the filling station compresses the hydrogen to a pressure suitable for dispensing to hydrogen fuel cell trucks.~~

~~38. The method of Claim 30, wherein the at least one end user location is a residence.~~

~~39.~~17. A method of storing energy and utilizing stored energy comprising:

storing hydrogen in at least one spool of FRP pipe codified for use with hydrogen;

fueling an energy producing system with the hydrogen; ~~and~~

producing electrical power with said energy producing system~~.~~;

~~40. The method of Claim 39, further comprising:~~

positioning at least one hydrogen sensor in the at least one spool of FRP pipe;

detecting, with the at least one hydrogen sensor, hydrogen leaks from the at least one spool of FRP pipe;

producing electronic data evidencing hydrogen leakage when said hydrogen leaks are detected; and

monitoring said electronic data and causing at least one safety action to be taken in response to detecting said hydrogen leaks.

~~41.~~18. The method of Claim 17~~40~~, further comprising:

installing a shutoff valve and coupling at each interval of a pre-determined length along the FRP pipe.

~~42.~~19. The method of Claim 18~~41~~, further comprising:

pinpointing a location of hydrogen leakage based on the electronic data; and

isolating the pre-determined length of FRP pipe containing the location of hydrogen leakage using the shutoff valves.

~~43.~~20. The method of Claim 19~~42~~, further comprising:

after isolating the FRP pipe containing the location of hydrogen leakage, removing and replacing the pre-determined length of FRP pipe containing the location of the hydrogen leakage using the couplings.

~~44.~~21. The method of Claim 20~~43~~, wherein the pre-determined length is one spool of FRP pipe.

~~45. The method of Claim 39, wherein the hydrogen is produced from renewable energy sources being at least one of the following: wind, solar, hydro, biomass, or geothermal power.~~

~~46. The method of Claim 39, wherein the energy producing system is a gas turbine.~~

~~47. The method of Claim 39, wherein the energy producing system is a fuel cell.~~