CLAIMS

1. A fuel tank arrangement for a marine vessel, wherein the fuel tank arrangement comprises
a fuel tank comprising a shell defining a fuel space inside the shell for storing fuel, and
a tank connection space connected to the fuel tank, wherein the tank connection space comprises
a gas tight compartment containing tank penetrations and tank valves for fuel,
an entrance to the tank connection space provided through a first space, which first space comprises a gas tight compartment isolated from the tank connection space, and
a first fuel outlet provided in a shell of the fuel tank within the tank connection space and connected to a first fuel line, **characterized** in that
the tank connection space further comprises
a first fuel inlet provided in the shell within the tank connection space and connected to a second fuel line, and
a first heat exchanger provided downstream from the first fuel line and upstream from the second fuel line, wherein
the first fuel outlet is provided in the area of the lowest 30 percent of a fuel space of the fuel tank for connecting the fuel tank to the first fuel line,
the first fuel line, the second fuel line, and the first heat exchanger form at least a part of a subcooling circuit for the fuel, wherein the first heat exchanger is configured to cool fuel provided in the subcooling circuit, and
that the subcooling circuit is provided inside the tank connection space.

2. A fuel tank arrangement according to claim 1, wherein the subcooling circuit further comprises a first pump for circulating the fuel in the subcooling circuit.

3. A fuel tank arrangement according to claim 2, wherein the first heat exchanger is provided downstream from the first pump.

4. A fuel tank arrangement according to any one of claims 1 to 3, wherein the subcooling circuit forms a part of a cooling system of the fuel, wherein the cooling system further comprises a cooling unit.

5. A fuel tank arrangement according to claim 4, wherein the cooling unit is provided in a second space outside the tank connection space.

6. A fuel tank arrangement according to claim 4 or 5, wherein the cooling unit comprises a heat pump.

7. A fuel tank arrangement according to any one of claims 1 to 6, wherein tank connection space further comprises
a third fuel line configured to supply fuel to one or more consumers.

8. A fuel tank arrangement according to claim 7, wherein
the subcooling circuit and fuel supply to the one or more consumers share the first fuel outlet, the first fuel line and the first pump,
whereby the same pump is configured to circulate fuel in the subcooling circuit and transfer fuel to the consumer(s).

9. A fuel tank arrangement according to any one of claims 2 – 8, wherein the first fuel line between the first fuel outlet and the first pump does not comprise any equipment for heating the fuel received from the fuel tank, whereby, in the subcooling circuit, the temperature of the fuel is only affected by cooling the fuel.

10. A fuel tank arrangement according to any one of claims 7 to 9, wherein at least one consumer comprises an engine.

11. A fuel tank arrangement according to any one of claims 1 to 10, wherein the tank connection space further comprises an auxiliary tank provided downstream from the first heat exchanger and upstream from the first fuel inlet.

12. A marine vessel comprises a fuel tank arrangement according to any one of claims 1 to 11.

13. A method for cooling fuel comprising ammonia, **characterized** in that the fuel comprising ammonia is cooled in a fuel tank arrangement according to any one of claims 1 to 11.

14. A method according to claim 13, wherein the method comprises
storing fuel comprising ammonia in the fuel space inside the shell, and
circulating the fuel in the subcooling circuit inside the tank connection space from the first fuel outlet via the first fuel line to the first fuel inlet via the second fuel line.

15. A method according to claim 13 or 14, wherein the ammonia fuel is kept in a liquid form during the circulation in the subcooling circuit.