CLAIMS

1. Method of operating a regasification terminal, the method comprising:

a) obtaining a re-gas stream (10) of LNG from one or more LNG storage tanks (1), the one or more storage tanks (1) being at a first pressure in the range of 0.8 – 1.5 bara, the re-gas stream (10) being at an intermediate pressure in the range of 8 – 16 bara,

b) splitting the re-gas stream (10) in a cooling stream (11) and a remainder of the re-gas stream (10’),

c) receiving a feed stream (40) of pressurized LNG at a second pressure, the second pressure being above 2 bara,

d1) cooling the feed stream (40) against the cooling stream (11) thereby obtaining a cooled feed stream (43) and a warmed cooling stream (14), and

d2) expanding the cooled feed stream (43) to the first pressure thereby obtaining an expanded cooled feed stream (43’),

e) passing the expanded cooled feed stream (43’) to at least one of the LNG storage tanks (1) and

f) passing at least the remainder of the re-gas stream (10’) to a regasifier unit (20).

2. Method according to claim 1, wherein the second pressure is above 3 bara, preferably above 5 bara, and more preferably above 12 bara.

3. Method according to any one of the preceeding claims, wherein the at least one LNG storage tank comprises an LNG inlet (42), and d2) is performed using a valve or expander (41) positioned close to the associated LNG inlet (42),

preferably at a distance less than 50 meters away from the associated LNG inlet (42).

4. Method according to any one of the preceeding claims, wherein the at least one LNG storage tank comprises an LNG inlet (42), and d2) is performed using a valve or expander positioned at a level at or above the associated LNG inlet (42), preferably at the tank top platform of the associated LNG inlet (42).

5. Method according to any one of the preceeding claims, wherein the method further comprises

– combining the warmed cooling stream (14) with the remainder of the re-gas stream thereby obtaining a combined stream (10'') and passing the combined stream (10'') to the regasifier unit (20) or

– passing the warmed cooling stream (14) and the remainder of the re-gas stream to the regasifier unit (20) as separate parallel streams to be regasified separately.

6. Method according to any one of the preceeding claims, wherein the method further comprises obtaining a boil-off gas stream (70) from at least one of the LNG storage tanks (1), pressurizing the boil-off gas stream (70) thereby obtaining a pressurized boil-off gas stream (72) at said intermediate pressure and passing at least part of the pressurized boil-gas stream (73) to a recondenser (16) to be recondensed and combined with the remainder of the re-gas stream (10').

7. Method according to claim 6 comprising

– feeding a liquid recondenser feed stream to the recondenser (16) comprising at least a portion (101) of the remainder of the re-gas stream (10'),

– feeding a vapour recondenser feed stream to the recondenser (16) comprising the at least part of the pressurized boil-off gas stream (73),

– obtaining a recondensed stream (18) from the recondenser (16) comprising at least the liquid and vapour recondenser feed streams and

– passing the recondensed stream (18) to the regasifier unit (20) as part of the combined stream (10’’).

8. Method according to claim 5, wherein the method further comprises

f1) pressurizing the combined stream (10’’) to a third pressure to obtain a pressurized re-gas stream (13),

f2) warming the pressurized re-gas stream (13), for instance against an ambient stream (22), in a re-gasifier heat exchanger (21) thereby obtaining a regasified natural gas stream (30).

9. Method according to any one of the preceeding claims, wherein the flow rate of the feed stream (40) of pressurized LNG at the second pressure is below 2000 m^3/hour, such as below 1500 m^3/h or below 1000 m^3/h.

10. Method according to any one of the preceeding claims, wherein a mass flow of the cooling stream (11) is controlled in response to one or more of the following parameters: a mass flow of the feed stream (40), a temperature of the feed stream, a pressure of the feed stream, a temperature of the cooling stream, a pressure of the cooling stream, a temperature of the cooled feed stream (43) and a temperature of the expanded cooled feed stream (43’).

11. Regasification terminal for regasifying LNG, comprising

- one or more LNG storage tanks (1), the one or more storage tanks (1) being at a first pressure, the first pressure being in the range of 0.8 – 1.5 bara,
- a regasifier unit (20) comprising an inlet which is in fluid communication with the one or more LNG storage tanks to receive a re-gas stream (10) of LNG at an intermediate pressure in the range of 8 – 16 bara, and an outlet for discharging a regasified natural gas stream (30),
- a processing unit (5) comprising a heat exchanging unit (50) and an expansion device (41), wherein the heat exchanging unit (50) comprises a pressurized LNG inlet (51) being in releasable fluid communication with one or more pressurized LNG storage tanks (61) for receiving a feed stream (40) of pressurized LNG at a second pressure, the second pressure above 2 bara, and a pressurized LNG outlet (52) for discharging a cooled feed stream (43), the pressurized LNG outlet (52) being in fluid communication with an inlet of an expansion device (41) for passing the cooled feed stream (43) to the expansion device (41), the expansion device comprising an outlet being in fluid communication with the one or more LNG storage tanks (1) for discharging an expanded cooled feed stream (43') to the one or more LNG storage tanks (1),

wherein the heat exchanging unit (50) further comprises a cooling inlet (53) being in fluid communication with the re-gas stream (10) for receiving a cooling stream (11) at the intermediate pressure in the range of 8 – 16 bara to cool the feed stream (40), the cooling stream (11) comprising at least a portion of the re-gas stream (10) and the heat exchanging unit (50) further comprises a cooling outlet (54) for discharging a warmed cooling stream (14), the cooling outlet (54) being in fluid communication with the re-gas stream (10)

at the intermediate pressure to recombine the warmed cooling stream (14) with a remainder of the re-gas stream.

12. Regasification terminal according to claim 11, wherein the feed stream (40) of pressurized LNG has a methane mole fraction greater than 0.5, preferably greater than 0.85.