CLAIMS

1. Floating LNG plant (1, T, 100) comprising a converted LNG carrier with a hull and a plurality of LNG storage tanks (4, 104) wherein in that the floating LNG plant (1, T, 100) comprises: at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull, for creating additional hull volume, process equipment (110) for LNG processing on the floating LNG plant (1, 1', 100), and a storage reservoir for storing fluids separated during the LNG processing, wherein the at least one sponson of the floating LNG plant (1, T, 100) provides double hull protection.

2. Floating LNG plant according to claim 1, wherein said storage reservoir is formed in a space in the interior of the at least one sponson.

3. Floating LNG plant (1, T, 100) according to claim 2, wherein the space in the interior of the at least one sponson is combined with space reserved for the ballast tank of the original LNG carrier.

4. Floating LNG plant according to claim 1, wherein said storage reservoir is formed by the ballast tank or in a space reserved for the ballast tank of the original LNG carrier.

5. Floating LNG plant (1, T, 100) according to any one of claims 1 - 4, comprising a ballast tank for the floating LNG plant in the additional hull volume created by the adding of the at least one sponson to the side of the hull.

6. Floating LNG plant (1, T, 100) according to any of claims 1-6, wherein the process equipment (110) for LNG processing on the floating LNG plant (1, T, 100) is installed on the additional deck space created by the adding of the at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull.

7. Floating LNG plant (1, T, 100) according to claim 6, wherein a part of the module weight is supported by the existing vessel with the outboard module supports connected to the at least one sponson (2, 2', 3, 3').

8. Floating LNG plant (1, T, 100) according to claim 6, wherein the sponson (2, 2', 3, 3', 102, 103) is used for supporting LNG transfer devices (111) for loading or unloading LNG.

9. Floating LNG plant (1, T, 100) according to claim 8, wherein the LNG FPSO is provided with two sponsons (2, 2', 3, 3', 102, 103) each on one side of the vessel, the first sponson (2, 2', 102) is used for supporting LNG transfer devices (111) and the second sponson (3, 3', 103) is used for supporting LNG process equipment (110).

10. Floating LNG plant (1, T, 100) according to claim 8 or 9, wherein the sponson (2, 2', 3, 3', 102, 103) is used for storage of a floating offloading hose (19).

11. Floating LNG plant (1, T, 100), according to any of the claim 1-10, wherein a power generation unit is placed within the sponson (2, 2', 3, 3', 102, 103).

12. Floating LNG plant (1, T, 100) according to any of the claims 1-11, wherein the LNG FPSO (1, T, 100) further comprises a mooring system and a fluid transfer system, the fluid transfer system including a swivel and piping connecting the swivel to process equipment for LNG processing.

13. Floating LNG plant (1, T, 100) according to claim 12, comprising an external turret (10) in order to allow the floating LNG plant (1, T, 100) to be weathervaning moored to the seabed via said external turret (10).

14. Floating LNG plant (1, T, 100) according to claim 12, comprising an offloading buoy in order to allow the floating LNG plant (1, T, 100) to be weathervaning moored to the seabed via said offloading buoy.

15. *Floating LNG plant (1, T, 100) according to any of the preceding* claims wherein the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) is provided with a collision protection (40).

16. Floating LNG plant (1, T, 100) according to claim 15, wherein the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) is protected against collision damage using SPS.

17. Method for converting a LNG carrier into a Floating LNG plant (1, T, 100), wherein the LNG carrier comprises at least a hull, a plurality of LNG storage tanks (4, 104) and at least one ballast tank for stabilizing the LNG carrier and wherein the method comprises the steps of:
adding at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull, for creating additional hull volume, and providing the at least one sponson with a double hull protection.

18. Method according to claim 17, comprising creating a storage reservoir for storing fluids separated during the LNG processing in a space in the interior of the at least one sponson.

19. Method according to claim 18, wherein the space in the interior of the at least one sponson is combined with space reserved for the ballast tank of the original LNG carrier.

20. Method according to any one of claims 17 - 19, further comprising
the step of installing process equipment (110) for LNG processing on the vessel on the additional deck space created by the adding of the at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull.

21. Method according to claim 20, wherein a part of the module weight is supported by the existing vessel with the outboard module supports connected to the at least one sponson (2, 2', 3, 3').

22. Method according to any one of preceding claims 17 - 21, wherein the method comprises the step of providing the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) with a collision protection (40).

CLAIMS

1. Floating LNG plant (1, 1', 100) comprising a converted LNG carrier with a hull and a plurality of LNG storage tanks (4, 104) wherein in that the floating LNG plant (1, 1', 100) comprises:

   - at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull, for creating additional hull volume,
   - process equipment (110) for LNG processing on the floating LNG plant (1, 1', 100), and
   - a reservoir for storing fluids separated during the LNG processing, wherein said reservoir is formed by the ballast tank or in the space reserved for the ballast tank of the original LNG carrier.

2. Floating LNG plant (1, 1', 100) according to claim 1, wherein the sponson of the floating LNG plant (1, 1', 100) provides double hull protection.

3. Floating LNG plant (1, 1', 100) according to claim 1 or 2, comprising a new ballast tank for the floating LNG plant in the additional hull volume created by the adding of the sponson to the side of the hull.

4. Floating LNG plant (1, 1', 100) according to any of claims 1-3, wherein the process equipment (110) for LNG processing on the floating LNG plant (1, 1', 100) is installed on the additional deck space created by the adding of the at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull.

5. Floating LNG plant (1, 1', 100) according to claim 4, wherein the sponson (2, 2', 3, 3', 102, 103) is used for supporting LNG transfer devices (111) for loading or unloading LNG.

6. Floating LNG plant (1, 1', 100) according to claim 5, wherein the LNG FPSO is provided with two sponsons (2, 2', 3, 3', 102, 103) each on one side of the vessel, the first sponson (2, 2', 102) is used for supporting LNG transfer devices (111) and the second sponson (3, 3', 103) is used for supporting LNG process equipment (110).

7. Floating LNG plant (1, 1', 100) according to claim 5 or 6, wherein the sponson (2, 2', 3, 3', 102, 103) is used for storage of a floating offloading hose (19).

8. Floating LNG plant (1, 1', 100), according to any of the claim 1-7, wherein a power generation unit is placed within the sponson (2, 2', 3, 3', 102, 103).

9. Floating LNG plant (1, 1', 100) according to any of the claims 1-8, wherein the LNG FPSO (1, 1', 100) further comprises a mooring system and a fluid transfer system, the fluid transfer system including a swivel and piping connecting the swivel to process equipment for LNG processing.

10. Floating LNG plant (1, 1', 100) according to claim 9, comprising an external turret (10) in order to allow the floating LNG plant (1, 1', 100) to be weathervaning moored to the seabed via said external turret (10).

11. Floating LNG plant (1, 1', 100) according to claim 9, comprising an offloading buoy in order to allow the floating LNG plant (1, 1', 100) to be weathervaning moored to the seabed via said offloading buoy.

12. Floating LNG plant (1, 1', 100) according to any proceeding claims wherein the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) is provided with a collision protection (40).

13. Floating LNG plant (1, 1', 100) according to claim 12, wherein the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) is protected against collision damage using SPS.

14. Method for converting a LNG carrier into a Floating LNG plant (1, 1', 100), wherein the LNG carrier comprises at least a hull, a plurality of LNG storage tanks (4, 104) and at least one ballast tank for stabilizing the LNG carrier and wherein the method comprises the steps of:

- adding at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull, for creating additional hull volume,
- installing process equipment (110) for LNG processing on the vessel,
- using the ballast tank or the space reserved for the ballast tank of the original LNG carrier to create a reservoir for storing fluids separated during the LNG processing, and
- using the additional hull volume created by the adding of the sponson (2, 2', 3, 3', 102, 103) to create a new ballast tank for the floating LNG plant (1, 1', 100).

15. Method according to claim 14, wherein the method comprises the step of installing process equipment (110) for LNG processing on the vessel on the additional deck space created by the adding of the at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull.

16. Method according claim 14 or 15, wherein the method comprises the step of providing the outer shell of the at least one sponson (2, 2', 3, 3', 102, 103) with a collision protection (40).

17. A natural gas distribution system for supplying natural gas to users where said natural gas has been transported as LNG by a LNG carrier (50) that has sailed from a liquefying station to a coastal gas receiving facility (17) located at a sea coast in the vicinity, comprising:

- at least a converted floating LNG plant (1, 1', 100) having production storage and offloading capability and provided with at least one sponson (2, 2', 3, 3', 102, 103) on the side of the hull, for creating additional hull volume, and

- a LNG FSRU (floating storage regas unit) (85) that lies at said coastal gas receiving facility (70), and that heats LNG to produce gaseous natural gas and that is connected to said facility to carry said gaseous natural gas through said facility (70).

18. A natural gas distribution system as claimed in claim 17 wherein the floating LNG plant (1, 1', 100) is a floating LNG plant (1, 1', 100) according to any of the claims 1 to 12.