CLAIMS

1. An arrangement (100) for combusting purge gas originating from an ammonia fuel system (108) fueling an ammonia fueled engine (112), the arrangement (100) comprising:

a boiler system (102) comprising

a burner (104),

a fuel inlet (111) configured to supply a fuel and thereby sustain a support flame in the burner (104), and

a purge gas inlet (121) being configured to intermittently receive purge gas from the ammonia fuel system (108) and supply the purge gas to the burner (104), the purge gas comprising a mixture of ammonia and inert gas,

wherein the burner (104) is configured to combust the ammonia with the support flame,

wherein the arrangement (100) comprises the ammonia fuel system (108),

and wherein the ammonia fuel system (108) comprises

an ammonia fuel source (155) for storing ammonia,

a fuel supply system (110),

the ammonia fueled engine (112), and

a purge source (165) which contains the inert gas, and which is configured to purge ammonia from the ammonia fuel system (108) to the purge gas inlet (121) by flushing the inert gas through the ammonia fuel system (108).

2. The arrangement (100) according to claim 1, wherein the boiler system (102) is configured to operate in one of at least a first mode (201) and a second mode (211), wherein

the first mode (201) is a heat production mode in which heat is produced, and

the second mode (211) is an ammonia safety purge mode in which a boiler (106) is kept warm and ready for fast operation and/or in which a pilot flame is sustained.

3. The arrangement (100) according to claim 2, wherein the boiler system (102) is configured to operate in one of at least a first sub-mode (201a) and a second sub-mode (201b) of the first mode (201), wherein, in the first sub-mode (201a), a main flame is sustained in the burner (104) for heat production and no purge gas is supplied to the burner (104), and, in the second sub-mode (201b), the main flame is sustained in the burner (104) for heat production and purge gas is supplied to the burner (104) and the ammonia is combusted with the main flame acting as the support flame.

4. The arrangement (100) according to claim 2 or 3, wherein the boiler system (102) is configured

to ignite a support flame by first igniting a pilot flame and then igniting the support flame from the pilot flame, or if a pilot flame is sustained directly ignite the support flame from the pilot flame, and

to supply purge gas to the burner (104) and combust the ammonia with the support flame.

5. The arrangement (100) according to any one of the preceding claims, wherein the fuel inlet (111) is connected via a fuel supply line (113, 133) to a fuel source (115, 135), the fuel source (115, 135) being configured to supply the fuel selected from the group consisting of liquefied natural gas (LNG), distillate and residual fuels.

6. The arrangement (100) according to any one of claims 1-5, wherein the mixture of ammonia and inert gas comprises gaseous ammonia, liquid ammonia, and inert gas.

7. The arrangement (100) according to claim 6, wherein the arrangement (100) further comprises an evaporator (114) configured to evaporate liquid ammonia into gaseous ammonia thereby providing a gaseous mixture of ammonia and inert gas to be supplied to the burner (104).

8. The arrangement (100) according to claim 6 or 7, wherein the arrangement (100) further comprises a separator (116) configured to separate the liquid ammonia from the gaseous ammonia and inert gas thereby providing a gaseous mixture of ammonia and inert gas to be supplied to the burner (104).

9. The arrangement (100) according to any one of the preceding claims, wherein the burner (104) is a multi-fuel burner configured

to burn at least two different fuels, preferably two different liquid fuels, preferably one at the time, or

to burn one or more liquids fuels in combination with burning one or more gaseous fuels, wherein the one or more liquid fuels, preferably one liquid fuel at the time, is burnt simultaneously as the one or more gaseous fuels, preferably one gaseous fuel at the time, is burnt.

10. The arrangement (100) according to any one of the preceding claims, further comprising a combustion fan (120), the combustion fan (120) comprising the purge gas inlet (121), wherein the combustion fan (120) is configured to mix the purge gas with combustion air and to provide the mixture of purge gas and combustion air to the burner (104).

11. The arrangement (100) according to any one of the preceding claims, wherein the inert gas is nitrogen.

12. A method (200) for combusting purge gas originating from an ammonia fuel system (108) fueling an ammonia fueled engine (112), the method (200) comprising:

sustaining a support flame in a burner (104) comprised in a boiler system (102), wherein the support flame is sustained by a fuel supplied by a fuel inlet (111); and

intermittently supplying the purge gas, wherein the purge gas is supplied by a purge gas inlet (121) from the ammonia fuel system (108) to the burner (104), the purge gas comprising a mixture of ammonia and inert gas, and

combusting the ammonia in the burner (104) with the support flame.

13. The method (200) according to claim 12, wherein the boiler system (102) is configured to operate in one of at least a first mode (201) and a second mode (211), wherein

the first mode (201) is a heat production mode in which heat is produced, and

the second mode (211) is an ammonia safety purge mode in which the boiler is kept warm and ready for fast operation and/or in which a pilot flame is sustained.