Claims

1. A power system for a floating vessel, in particular for a drilling vessel, comprising

- an external power feed connection (11) which is electrically connectable to an external power source (12) which is external to the floating vessel (100), the external power feed connection (11) being adapted to receive AC electric power from the external power source, and,
- a further power feed connection (15) adapted to receive AC electric power from a further power source (16), and
- a drive system (20) for driving electric motors (36) of the floating vessel, wherein the drive system (20) comprises a DC-bus (40) and at least a first rectifier (31) and a second rectifier (32) which are configured to receive AC electric power and to provide DC electric power to the DC-bus (40),

wherein the external power feed connection (11) is electrically connectable to the first rectifier (31) of the drive system and wherein the further power feed connection (15) is electrically connectable to the second rectifier (32) of the drive system such that in operation, electric power can be supplied to the DC-bus (40) from the external power feed connection (11) via the first rectifier (31) and ~~the~~ from the further power feed connection (15) via the second rectifier (32),

wherein the power system is configured to have at least a first mode of operation in which

- the external power feed connection (11) is connected to the first rectifier (31) to supply electric power to the first rectifier (31), the external power feed connection (11) being disconnected from the second rectifier (32), and
- the further power feed connection (15) is connected to the second rectifier (32) to supply electric power to the second rectifier (32), the further power feed connection (15) being disconnected from the first rectifier (31), and

16. The Power system according to any of the preceding claims, wherein in the first mode of operation, the outputs of the first and second rectifiers (31, 32) are electrically connected by the DC bus (40).

17. The Power system according to claim 16, wherein the power system is configured such that in the first mode of operation, when one of the first or the further power feed connection (11, 15) is disconnected, the DC bus (40) receives electric power from the other of the first or the further power feed connection (11, 15) thereby enabling a continued operation of the electric motors (36) connected to the DC bus (40).

18. A method of operating a power system of a floating vessel, in particular of a drilling vessel, the power system comprising a drive system (20) for driving electric motors (36) of the floating vessel (100), wherein the drive system (20) comprises a DC-bus (40), ~~and~~ at least a first rectifier (31) and a second rectifier (32) configured to receive AC electric power and to provide DC electric power to the DC-bus, and a first AC transformer (51) and a second AC transformer (52) each configured to be operable at at least two different AC frequencies of AC electrical power received at the input of the respective transformer, the method comprising the steps of:

- connecting an external power feed connection (11) to an external power source (12) which is external to the floating vessel (100) for receiving AC electric power from the external power source (12),
- connecting a further power feed connection (15) to a further power source (16) for receiving AC electric power from the further power source,
- connecting the external power feed connection (11) to the first rectifier (31) of the drive system (20), the first rectifier being disconnected from the further power feed connection (15), connecting the external power feed connection (11) to the input of the first AC

transformer (51) and connecting an output of the first AC transformer to the first rectifier,

- connecting the further power feed connection (15) to the second rectifier (32) of the drive system (20), the second rectifier being disconnected from the external power feed connection (11), and connecting the further power feed connection to the input of the second AC transformer,
- operating the power system (10) such that electric power is supplied to the DC-bus (40) from the external power feed connection (11) via the first rectifier and from the further power feed connection (15)via the second rectifier (32);
- the method further comprising the steps of receiving AC electric power on the external power feed connection (11) at a first AC frequency and receiving electric power on the further power feed connection (15) at a second AC frequency different to the first AC frequency.