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(54) **Voltage source converter**

(57) A voltage source converter (30) comprises first and second DC terminals (32,34) for connection to a DC network (58). The voltage source converter (30) further includes at least one limb connected between the first and second DC terminals (32,34). The or each limb includes:

a phase element (36) including two parallel-connected sets of series-connected switching elements (40) connected in an H-bridge to define first and second diagonal switching pairs, a respective junction between each set of series-connected switching elements (36) defining an AC terminal (40) for connection to an AC network (50); and

a sub-converter (38,39) configured to be controllable to act as a voltage waveform synthesiser; wherein the voltage source converter (30) further includes a controller (60) to operate the sub-converter (38,39) to selectively synthesise a driving commutation voltage to modify a DC side current at a DC side of the H-bridge so as to minimise any differences in magnitude and direction between the DC side current and an AC side current at an AC side of the H-bridge and thereby

carry out commutation of current from one of the first and second diagonal switching pairs to the other of the first and second diagonal switching pairs.

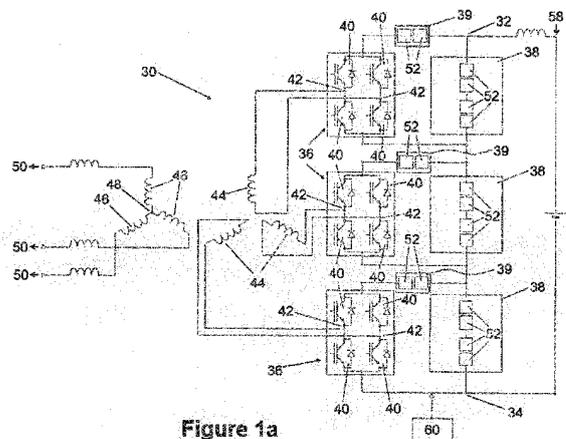


Figure 1a

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