CLAIMS:

1- A system, comprising a power control module, at least one power supply and at least one DC load, the at least one power supply including an AC grid, said power control module interfacing said at least one DC load and the at least one power supply to supply DC power to said at least one DC load, the at least one DC load including a chiller.

2- The system of claim 1, wherein said at least one power supply further includes at least one DC power supply, said power control module, from said AC grid and said at least one DC power supply, supplying DC power to said at least one DC load.

3- The system of claim 2, wherein said power control module controls energy supply to the at least one DC loads from the AC grid and said at least one DC power supply.

4- The system of any one of claims 2 and 3, wherein in case of excess energy, said power control module at least one of: i) feeds back excess energy to the AC grid and ii) causes storage of extra energy.

5- The system of any one of claims 2 to 4, wherein said at least one DC power supply is a renewable energy source.

6- The system of any one of claims 1 to 5, wherein said at least one DC load comprises a chiller comprising a DC powered compressor.

7- The system of any one of claims 1 to 6, wherein said chiller includes a DC powered oil free magnetic bearing compressor.

8- The system of any one of claims 1 to 7, wherein said at least one DC load includes DC powered controls and powered valves.

9- The system of any one of claims 1 to 8, wherein said chiller is an air-cooled chiller with DC powered condenser coil fans.

10- The system of any one of claims 1 to 8, wherein said chiller is a water-cooled chiller.

11- A power supply integration method comprising interfacing an AC grid with at least one DC load, and supplying DC power to the at least one DC load, the at least one DC load including a chiller.

12- The method of claim 11, comprising interfacing at least one of : i) the AC grid and ii) a DC power supply, and supplying, from the at least one of : i) the AC grid and ii) the DC power supply, DC power to the at least one DC load.

13- The method of claim 12, interfacing the AC grid and the at least one DC power supply and controlling energy supply to the at least one DC load from the AC grid and the at least one DC power supply.

14- The method of any one of claims 12 and 13, comprising, in case of excess energy, at least one of: i) feeding back excess energy into the AC grid and ii) causing storage of extra energy.

15- The method of any one of claims 12 to 14, wherein the DC power supply supplies a DC power supply from a renewable energy source.

16- The method of any one of claims 11 to 15, wherein the chiller comprises a DC powered compressor.

17- The method of any one of claims 11 to 16, the chiller comprising a DC powered oil free magnetic bearing compressor.

18- The method of any one of claims 11 to 17, wherein the at least one DC load comprises DC powered controls and powered valves.

19- The method of any one of claims 11 to 18, wherein the chiller is air cooled.

20- The method of any one of claims 11 to 18, wherein the chiller is water cooled.