CLAIMS

1. A method for automatically cleaning a solar panel using an atmospheric water generator, comprising the steps of:

measuring an amount of stored water;

measuring an atmospheric humidity level;

obtaining weather data;

automatically adjusting at least one of a water threshold and a humidity threshold in view of the measured amount of stored water, the measured atmospheric humidity level, and the weather data;

comparing the measured amount of stored water to the adjusted water threshold;

comparing the measured atmospheric humidity level to the adjusted humidity threshold;

generating water using the atmospheric water generator upon a determination that the measured amount of stored water is above the adjusted water threshold and the humidity level is above the adjusted humidity threshold;

storing the water generated by the atmospheric water generator;

monitoring an efficiency of power generated by the solar panel to determine a reduction in solar power generation efficiency;

comparing the reduction of solar power generation efficiency to a solar power generation threshold;

initiating a cleaning operation upon a determination that the reduction of solar power generation efficiency is above the solar power generation threshold; and

delivering the stored water through a system of pipes and nozzles to spray the water onto the surface of the solar panels to clean the solar panels.

2. A method according to Claim 1, in which the step of generating water using the atmospheric water generator further includes the steps of:

comparing the reduction of solar power generation efficiency to an atmospheric water generation operation power consumption; and

operating the atmospheric water generator to generate water upon a determination that reduction of solar power generation efficiency outweighs the water generation operation power consumption.

3. A method according to Claim 1, in which the step of generating water using the atmospheric water generator occurs in advance of a cleaning operation.

4. A method according to Claim 1, further including the steps of:

measuring solar radiation levels; and

comparing the solar radiation to a solar radiation threshold;

in which the cleaning operation is initiated upon a determination that the solar radiation level is above the solar radiation threshold.

5. A method according to Claim 1, in which the humidity threshold is automatically adjusted lower in view of the weather data such that step of generating water using the atmospheric water generator occurs in less than optimal measured atmospheric humidity conditions.

6. A method according to Claim 1, in which the water threshold is automatically adjusted lower in view of the weather data such that step of generating water using the atmospheric water generator occurs in less than optimal measured water level conditions.

7. A method for automatically cleaning a solar panel system using an atmospheric water generator, comprising the steps of:

generating water using the atmospheric water generator;

storing the water generated by the atmospheric water generator;

measuring a first power generated by a solar panel system;

spot cleaning a portion of the solar panel system;

measuring a second power generated by the solar panel system after the spot cleaning;

comparing the first power generated to the second power generated to determine a reduction in power generation efficiency;

comparing the reduction of power generation efficiency to a solar power generation threshold;

initiating a cleaning operation of the solar panel system upon a determination that the reduction of solar power generation efficiency is above the solar power generation threshold; and

delivering the stored water through a system of pipes and nozzles to spray the water onto the surface of the solar panel system to clean the solar panel system.