WE CLAIM:

1. A method of providing adaptive demand response for an area, the method comprising:

receiving a demand response request indicative of a demand response event for the area ~~(300)~~;

determining, based on the demand response request, a maximum power consumption for the area during the demand response event ~~(304)~~;

determining, by a processor, prior to the demand response event, one or more set points for the area during the demand response event, the one or more set points determined based on the maximum power consumption ~~(308)~~;

calculating, by the processor, prior to or during the demand response event, a real-time power consumption of the area ~~(312)~~; and

controlling, by the processor, when the real-time power consumption exceeds the maximum power consumption, one or more loads in the area to maintain the real-time power consumption at or below the maximum power consumption ~~(316).~~;

wherein controlling the one or more loads comprises controlling one or more distributed loads based on occupancy information, user preferences, or an activity schedule;

wherein controlling the one or more distributed loads comprises controlling one or more plug-in loads in the area;

wherein controlling the one or more plug-in loads comprises:

initiating a bid request to a plurality of gateway controllers in communication with one or more devices associated with the one or more plug-in loads;

receiving, in response to the bid request, information from the plurality of gateway controllers;

allocating load shedding to the one or more devices based on this information, the load shedding being equal to the difference between the real-time power consumption and the maximum power consumption;

generating control instructions to the plurality of gateway controllers based on the allocating.

~~2. The method of claim 1, wherein controlling the one or more loads (316) comprises controlling one or more distributed loads.~~

~~3. The method of claim 1, wherein controlling the one or more loads (316) comprises controlling one or more distributed loads based on occupancy information, user preferences, or an activity schedule.~~

42. The method of claim ~~3~~1, wherein controlling the one or more distributed loads ~~(316)~~ comprises controlling one or more plug-in loads and one or more central lighting systems ~~(124)~~ in the area.

~~5~~3. The method of claim ~~3~~1, wherein controlling the one or more distributed loads comprises controlling one or more central lighting systems ~~(124)~~ in the area.

6. The method of claim 3, wherein controlling the one or more distributed loads comprises controlling one or more plug-in loads in the area.

74. The method of claim 61, wherein the one or more plug-in loads are from one or more computers or lights not part of a central lighting system in the area.

8. The method of claim 6, wherein controlling the one or more plug-in loads comprises:

initiating a bid request to a plurality of gateway controllers (108) in communication with one or more devices (170) associated with the one or more plug-in loads;

receiving, in response to the bid request, information from the plurality of gateway controllers (108);

allocating load shedding to the one or more devices (170) based on this information, the load shedding being equal to the difference between the real-time power consumption and the maximum power consumption;

generating control instructions to the plurality of gateway controllers (108) based on the allocating.

95. The method of claim 81, wherein the information comprises occupancy information, user preferences, user input, or an activity schedule.

106. The method of claim 1, wherein calculating (312) and controlling (316) are performed prior to the demand response event and during the demand response event.

117. The method of claim 1, wherein calculating (312) and controlling (316) are performed at least twice during the demand response event.

128. In a non-transitory computer-readable storage medium having stored therein data representing instructions executable by a programmed processor for providing adaptive demand response for an area, the storage medium comprising instructions for:

receiving a demand response request indicative of a demand response event for the area, the demand response event indicative of a load shedding goal for the area;

determining, prior to the demand response event, one or more set points for the area based on the load shedding goal;

calculating, prior to or during the demand response event, the real-time power consumption of the area, the real-time power consumption of the area based, at least in part, one the one or more set points for the area;

controlling, when the real-time power consumption does not satisfy the load shedding goal for the area, one or more distributed loads in the area to satisfy the load shedding goal for the area~~.~~;

by controlling one or more distributed loads based on occupancy information, user preferences, or an activity schedule;

by controlling one or more plug-in loads in the area;

by initiating a bid request to a plurality of gateway controllers in communication with one or more devices associated with the one or more plug-in loads; receiving, in response to the bid request, information from the plurality of gateway controllers; allocating load shedding to the one or more devices based on this information, the load shedding being equal to the difference between the real-time power consumption and a maximum power consumption; and, generating control instructions to the plurality of gateway controllers based on the allocating.

~~13. The non-transitory computer-readable medium of claim 12, wherein controlling the one or more distributed loads comprises controlling one or more distributed loads based on occupancy information, user preferences, or an activity schedule.~~

~~14~~9. The non-transitory computer-readable medium of claim ~~12~~8, wherein controlling the one or more distributed loads comprises controlling one or more plug-in loads and one or more central lighting systems ~~(124)~~ in the area.

~~15~~10. A system ~~(100)~~ of providing adaptive demand response for an area, the system comprising:

a first controller ~~(104)~~; and

a plurality of ~~distributed load~~ gateway controllers ~~(108)~~ operatively connected to the first controller,

wherein the first controller ~~(104)~~ is configured to:

receive a demand response request indicative of a demand response event for the area;

determine, based on the demand response event, a maximum power consumption for the area during the demand response event;

determine, prior to the demand response event, one or more set points for the area during the demand response event, the one or more set points determined based on the maximum power consumption;

calculate, prior to or during the demand response event, a real-time power consumption by the area;

generate, when the real-time power consumption exceeds the maximum power consumption, control instructions to control a plurality of loads in the area to maintain the real-time power consumption at or below the maximum power consumption; and

transmit the control instructions to the plurality of gateway controllers ~~(108)~~, and

wherein the gateway controllers ~~(108)~~ are configured to receive the control instructions from the first controller ~~(104)~~ and to control a plurality of devices or systems associated with the plurality of distributed loads~~.~~;

wherein, prior to generating the control instructions, the first controller is further configured to:

initiate a bid request to the plurality of gateway controllers;

receive, in response to the bid request, information from the plurality of gateway controllers; and

generate the control instructions based on the information received from the plurality of gateway controllers.

~~16~~11. The system of claim ~~15~~10, wherein the first controller ~~(104)~~ is operatively connected to a central lighting system ~~(124)~~ for the area, and wherein the first controller ~~(104)~~ is configured to directly control the central lighting system ~~(124)~~ when the real-time power consumption exceeds the maximum power consumption.

~~17~~12. The system of claim ~~15~~10, wherein the first controller ~~(104)~~ is configured to generate the control instructions based on occupancy information, user preferences, an activity schedule, or combinations thereof.

~~18. The system of claim 15, wherein, prior to generating the control instructions, the first controller (104) is further configured to:~~

~~initiate a bid request to the plurality of gateway controllers (108);~~

~~receive, in response to the bid request, information from the plurality of gateway controllers (108); and~~

~~generate the control instructions based on the information received from the plurality of gateway controllers (108).~~

~~19~~13. The system of claim ~~18~~10, wherein the information comprises occupancy information, user preferences, user input, an activity schedule, or combinations thereof.

~~20~~14. The system of claim ~~15~~10, wherein the control instructions comprise power reduction instructions for the respective gateway controller ~~(108)~~, a maximum power consumption for the respective gateway controller ~~(108)~~, or combinations thereof.