

# Smart water heater controller trial: summary and FAQs

## Trial summary

This trial program will test the ease of installation, use and effectiveness of Aquanta smart water heater controllers to help reduce and manage demand on the BC Hydro grid during peak times in the winter. By adjusting when water heaters are turned on, we may be able to reduce the amount of infrastructure that needs to be built to meet the growing demand for electricity. By helping us manage load on the electricity grid, smart water heater controllers may help you save energy and money on your electric bills.

## Frequently asked questions

### Who can I contact if I have questions or need support?

BC Hydro has partnered with Victoria-based non-profit organization City Green Solutions to administer this program. If there are any questions or concerns that are not addressed in the FAQs below, please contact City Green Solutions at [demo@citygreen.ca](mailto:demo@citygreen.ca) or call 250 381 9995 during business hours (9:00 a.m. through 4:30 p.m., Monday through Friday except holidays).

### What are the benefits of participation?

- You will receive a \$600 value controller and installation for free. Participants get to keep the device after the trial period has ended.
- The controller provides leak detection to alert you on your smart phone if there are any problems with your water heater before any leaks occur.
- The controller has interconnectivity with Nest thermostats (if applicable).
- You will support a pilot project investigating technologies to reduce and manage demand on our electricity grid during peak times in the winter. Pilot projects like these help us plan for a future where a reduced amount of new infrastructure is needed to meet the growing demand for electricity.

### How long will this trial last?

This trial will last approximately 15 months from January 2019 to March 2020. The demand response events will primarily occur in the winter periods between November and March.

### What is a smart water heater controller? What does it do?

A smart water heater controller is a junction box to an electric water heater's power source. It turns on and off the power to the water heater when it is programmed to do so. It controls the temperature and timing of the water heater just like a programmable thermostat controls temperature and timing in a home heating system.

### What functionality does the smart water heater have?

Because it is a 'smart' water heater controller it is connected, via Wi-Fi, to the internet and you have an online user dashboard that allows you to:

- See how much hot water is available
- Set manual water heater on and off schedules
- Adjust auto-efficiency settings to your preferred setting
- Compare hot water usage and energy data from week to week and month to month
- Set boost and away periods and adjust alert settings

For more information on the Aquanta user dashboard, we suggest you review the customer dashboard overview video: [youtube.com/watch?v=aH4ftY2QEQU](https://www.youtube.com/watch?v=aH4ftY2QEQU).

### **How do I control my water heater when the smart controller is installed?**

Once the Aquanta controller is installed, you will be able to control your water heater in the following ways:

- Manually using the water heater controls on the tank (no change from pre-Aquanta installation).
- Manually through the Aquanta user dashboard that will be available online on your smart phone, tablet, or desktop. For more information on the Aquanta user dashboard, we suggest you review the customer dashboard overview video: [youtube.com/watch?v=aH4ftY2QEQU](https://youtube.com/watch?v=aH4ftY2QEQU)

### **What is a demand reduction event?**

A demand reduction event is a specific time period when the pilot program runs remotely, and the water heaters in participating businesses are turned off temporarily. These demand reduction events will occur in all businesses in this trial at set times and for set durations. Events will occur up to 36 days each winter (typically between November and March) during the pilot 15 month term. You will not be notified when a demand reduction event is scheduled for your business as the intent of this trial program is to see if any impacts to regular hot water use occur. Based on the results of past trials in other locations, you should not notice any difference from your hot water heater being temporarily turned off. However, in the unlikely event that you are encountering a shortage of hot water regularly, you can use the app to readjust your water heater manually. Aquanta provides information about this and their other functionality on their web site: [aquanta.io/](https://aquanta.io/). Please refer to this site and watch the video called “Preview the Dashboard” to see this and other functionality in action.

### **What do I do if my Aquanta controller loses power?**

You do not have to do anything. In the event of a power outage, neither your electric water heater nor the controller will work until power is restored, and you will not be able to send control commands to your water heater via your Aquanta app. Once power is restored, your controller will automatically re-connect to the stored Wi-Fi network and resume operation.

### **What do I do if my Aquanta controller loses internet connectivity?**

You do not have to do anything, assuming it is a temporary outage. Your controller locally stores the control commands sent to it, and will act upon them according to the schedule created. For example, if the controller was in “away” mode during the internet outage, it comes out of “away” mode at the previously-scheduled date/time. If the controller has lost connectivity because you have changed your Wi-Fi password or changed your Internet Service Provider, you will need to follow the re-connect instructions provided. Lack of connectivity is indicated on the controller by a blinking LED; a solid LED colour means the unit is connected.

### **When would I have to manually reset my Aquanta controller?**

You can manually re-set your controller by pressing the small blue button on the side of the controller for 10 seconds. This will disconnect the controller from the stored Wi-Fi connection, and put it into nominal operating mode (the tank will operate as if the controller is not there). This step should be taken to connect the controller to a new Wi-Fi network or password, or if the controller remains in an undesired control mode because of lack of internet connectivity.

### **How can I use the “away” feature to save energy?**

The “away” mode allows you to program the controller to turn off the water heater until sometime in the future. You can select whether you’d like the “away” period to start immediately or at a date in the future through the user dashboard. For more information on the Aquanta user dashboard, we suggest you review the customer dashboard overview video: [youtube.com/watch?v=aH4ftY2QEQU](https://youtube.com/watch?v=aH4ftY2QEQU). The “away” feature should not be used while you are away if you expect other co-workers or colleagues would be accessing your business and might require hot water. The “away” feature should be set so that your hot water heater will be turned back on at least four hours before your return to your business.

### **What temperature should my hot water tank be set to?**

For information on hot water temperature settings and safety, we suggest you read this article: [bchydro.com/news/conservation/2012/hot-water-safety-savings.html](https://bchydro.com/news/conservation/2012/hot-water-safety-savings.html).

### **How does the leak detection sensor work?**

The leak detection sensor is installed onto your water heater so it can detect leaks. If moisture is detected, it will cause the controller to continuously beep until it is turned off, and it will also send you an email and/or text alert (in the event you are away and unable to hear the beep). If you hear the beep or receive a text you should check your hot water tank for leaks at the earliest opportunity and call in a professional plumber to address the issue.

### **What is the temperature control safety feature?**

With regard to temperature control, the device cannot heat the water higher than the nominal set-point of the physical thermostat of the water heater. This ensures that the on-line “virtual” thermostat cannot be inadvertently turned to an unsafe temperature. The device also has high (in the case of potential overheating) and low (in case of potential freezing) temperature alert functions, and will autonomously cut power to the water heater and issue an alert if the tank temperature crosses a high threshold (75C°/167F°) that potentially indicates a dangerous thermostat failure.

### **What about the privacy of my business information?**

As per the terms and conditions for the trial: Participation in the project will involve the collection, use, and disclosure of your business information, by the project operators and BC Hydro for the purposes of administering and assessing the project and the performance of the equipment. The business information includes your name, address, MAC IDs where needed, choices whether to opt out of a curtailment, records showing current and historical energy use for the business, and data generated by the equipment. Your business information is collected by the project operator and BC Hydro in accordance with its energy conservation programs under the Clean Energy Act. With regards to your business information:

1. You authorize the project operators to collect your business information indirectly from the equipment vendors rather than directly from you.
2. Certain BC Hydro contractors involved in the project that receive your business information may be based or otherwise have operations outside of Canada, specifically in the United States, and your business information collected in connection with the project may therefore be stored and accessed from outside of Canada. By participating in the project, you consent to the storage and access of your business information outside of Canada and specifically within the United States. This consent would take effect upon acceptance of your application by BC Hydro.

### **What if I run out of hot water?**

You can log in to your Aquanta user dashboard and click the orange “Boost” button on the first screen. The “boost” feature temporarily overrides all control commands and allows the tank to heat to its nominal set point. You will see a drop-down menu that allows you to select a set “boost” period – try one or two hours to solve any immediate hot water shortages. As a reminder, the controller cannot heat a tank to a temperature higher than the setting of its mechanical thermostat. If you still have no hot water after trying the “boost” button, it is likely the problem is with your water heater and you should contact a plumber.

### **What if my business has minimum hot water temperature health and safety restrictions?**

To participate, your business must not have any health or safety restrictions pertaining to minimum hot water temperatures, as demand response events during the trial could cause hot water temperatures to drop (e.g. restaurants where minimum hot water temperatures must be maintained for cleaning and dish washing purposes).

### **What do I do if I forget my password to login to the Aquanta user dashboard?**

Click on the orange “Forgot Password?” button under the password field on the login screen.

### **Who do I contact if I have questions or concerns?**

Please contact our program administrator, City Green Solutions at [demo@citygreen.ca](mailto:demo@citygreen.ca) or call 250 381 9995 during business hours (9:00 a.m. through 4:30 p.m., Monday through Friday except holidays).