

# PowerStream, Ontario, Canada

Paving the way to the future, supported by Barco technology

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John McClean, Director of Operations,  
PowerStream



A series of mergers and acquisitions have made PowerStream the second largest electricity distribution company in Canada, serving more than 315,000 residential and business customers. PowerStream is an ambitious firm that is clearly committed to leading the way into the future with boldness, innovation and best-in-class performance. The new head office in Vaughan seamlessly illustrates this commitment. It received a LEED gold certification for its environmentally efficient design and is equipped with cutting-edge technology, including a 6x2 80" Barco video wall with accompanying controller and software in the control room.

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The need for a new head office facility was first identified in 2004, shortly after predecessor utilities Hydro Vaughan, Markham Hydro and Richmond Hill Hydro merged to create PowerStream. Following PowerStream's purchase of Aurora Hydro in 2006, a consolidation became all the more indispensable. John McClean, currently Director of Operations, and his team were charged with designing the center's nerve center - the control room. "Integrating three SCADA systems, 100 feet of static display boards and different communications systems presented a challenge," he recalled. "So we did an in-depth market scan, visited many other control rooms and thoroughly studied the ISO standard 11064 on ergonomic control room design." Thanks to that insight, combined with years of experience, the system operations group could draft detailed tender specifications.

### Seamless display

A power grid system requires constant review, management and control, 24/7. So only the best possible technology would do for PowerStream to support its control room operators. The rigid specifications included an efficient, utterly reliable and scalable visualization solution. It had to render crystal-clear images. "It was also crucial that the physical gap between the cubes would be seamless," added McClean. "The electric power grid is displayed as a vast array of horizontal and vertical lines. An interruption in these lines would provide a wrong image." Barco's visualization solution

met all of the above requirements, at a feasible cost. In addition, PowerStream also felt confident that Barco would address all its needs for 24/7 support and service.

### Flexible support

The new Barco display wall is made up of 12 Barco OV-D1 80" rear-projection cubes with DLP technology. It is connected to a Barco Transform controller for a real-time overview of power distribution in the Ontario region. "Barco demonstrated its high service level already during the installation," said McClean. "We were still constructing the building while they were setting up the wall. In spite of that, they did a great job, adapting flexibly to every change to our timeline or specifications. McClean illustrates how Barco was also flexible in the design of the video wall: "With energy efficiency very high on our agenda, we built an oval-shaped instead of a rectangular head office. Barco designed a curved video wall, to follow the curved form of the control room."

### Control room ergonomics

Ergonomics played a key role during control room design. The workstations, for example, where operators monitor the electrical network in a particular sector, have sit/stand functions: heights can be adjusted, thus allowing operators to perfectly view the screens whether they are sitting down or standing. Barco's video wall supports the ergonomic

aspect as well. As the wall is exceptionally bright and color and lighting are automatically monitored and adjusted, operators can maintain a precise view of the screen, from whatever angle in the room. In this way, they maintain a clear overview of the entire electricity network, which helps them pinpoint problems and take effective decisions in case of incidents.

### They really embrace it

"At first, the team was quite sceptical about shifting from a static display system to the Barco wall. But once they'd grasped its ease-of-use, they really embraced it," McClean said. "What I particularly like, besides all the assets described above, of course, is the Apollo Explorer which is integrated into the software. It allows anyone to take over the display and manipulate its layout smoothly from their workstation: they can zoom in, customize the layout, use image processing tools to highlight events, etc. We had not specified this need in our tender specifications, but it is a very nice plus."

### Boost for company image

PowerStream is committed to consolidating its leadership position in the world of electricity distribution. The organization believes that its high-tech control room, with the Barco wall as its focal point, will help raise its professional image. "Many other utilities, from all over the world, are interested and come and visit our control room. Just this morning, I've received two email messages from peer companies, asking for information about our experiences with Barco," McClean concluded. "We're convinced our investments here will help foster our professional image in the industry and, consequently, further reinforce our leading position. And as the design features of the new control room have been implemented with an eye towards future growth, we will be able to work with the Barco solution for many years to come."

Ref. no. R000000SST0809R000

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The information and data given are typical for the equipment described.  
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