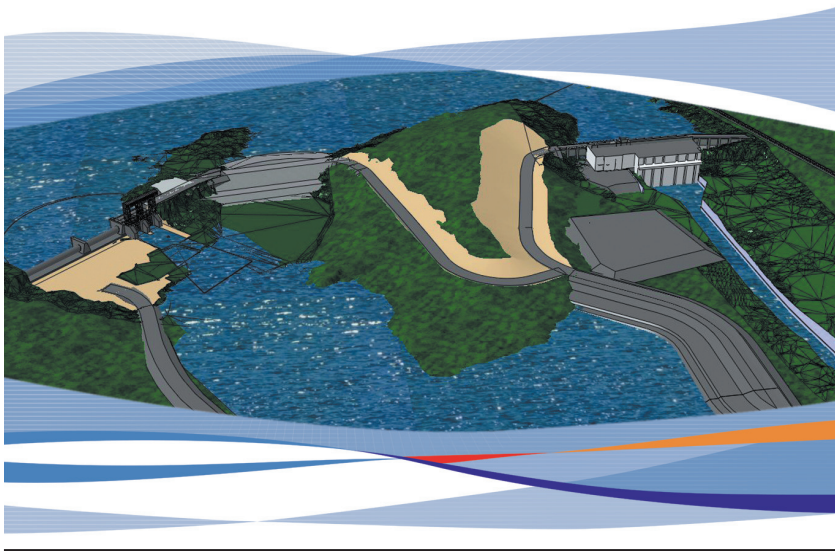


## IBM PLM helps Hydro-Québec revolutionise the development of hydroelectric projects



*“With CATIA V5 and SMARTEAM, Hydro-Québec will be able to collaborate more effectively with its partners and expedite the resolution of problems that can occur during the project development stage.”*

Jean-Paul Rigg, Director, Generation engineering, Equipment division, Hydro-Québec

### Overview

#### ■ The Challenge

*Hydro-Québec needed to shorten the design time of future power plants, meet quality, design and development goals, and improve cost estimation*

#### ■ The Solution

*IBM delivered a Product Lifecycle Management (PLM) solution comprising CATIA V5, SMARTEAM and digital mock up (DMU) products developed by Dassault Systèmes*

#### ■ The Benefits

- *Supplier and partner collaboration*
- *Multidisciplinary data integration*
- *Reduced design risk through DMU and review*
- *Design validation on 3D models of facilities*
- *Faster project cycle times*
- *Operational efficiency.*

#### Challenging the future

Faced with growing energy demands, Hydro-Québec needed to shorten the design and construction time of hydroelectric construction projects. Working with IBM and Dassault Systèmes, the company opted for a PLM strategy to improve collaboration, reduce design risk and shorten construction time.

### **A leader in hydropower**

Hydro-Québec is an integrated electrical company that generates, transports and distributes almost all the electricity consumed in Quebec. At the end of 2004, its generating fleet had a total installed capacity of 33,892 megawatts. Over 96 percent of the power it generates is hydroelectric, making it one of the largest renewable-energy producers in North America.

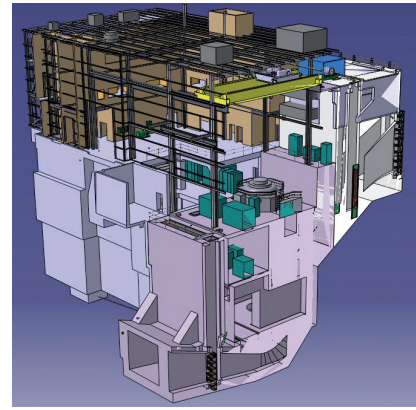
The company has the most extensive transmission system in North America, consisting of 32,530 kilometres of high-voltage power lines and 106,568 kilometres of distribution lines. Hydro-Québec provides electricity to more than 3.6 million Quebec customers.

For the 2004-2014 period, Hydro-Québec's total hydro dam construction projects were estimated at CDN\$50 billion – engineering costs represented nearly ten percent of the overall budget. With a current ten year commissioning time, Hydro-Québec needed to optimise its operational efficiency to meet growing energy demands in the near future.

### **Collaborate. Control. Capture**

Hydro-Québec needed an IT partner who could deliver on a number of expectations. Firstly, the company needed a solution that supported effective collaboration between its 15-20 consulting engineer partners.

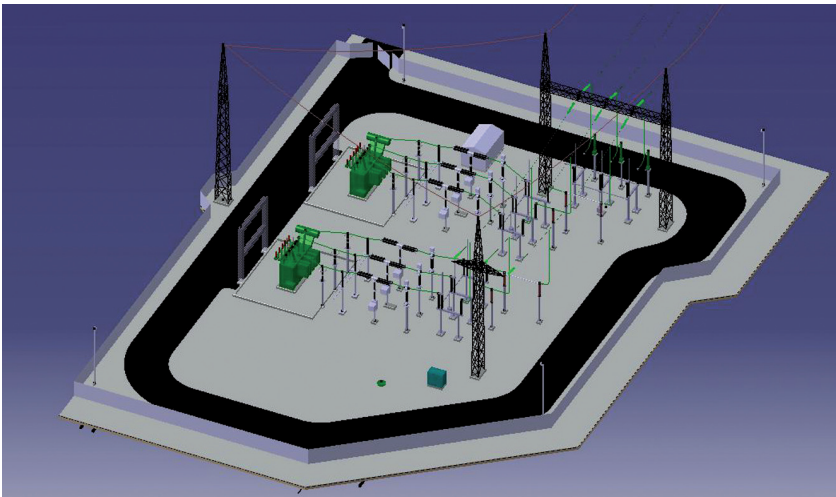
Secondly, error margins in the preliminary and pre-project studies of past Hydro-Québec projects had caused risk of improper evaluation. Hydro-Québec believed a transition from 2D to an integrated 3D solution would reduce the engineering costs and commissioning time of their construction projects.



Finally, with high retirement rate of Hydro-Québec's engineers in the near future, knowledge capture and optimisation were vital.

### **Several needs, one company**

After an 18-month evaluation, Hydro-Québec chose to move forward with IBM. A PLM leader, IBM offered expertise in the required technology and its integration within a collaborative multi-disciplinary environment.



## **CATIA V5 and SMARTEAM:**

### **The right approach**

CATIA V5 and SMARTEAM are IBM PLM solutions developed by Dassault Systèmes.

CATIA V5 enables 3D collaborative product design, while SMARTEAM supports product data and lifecycle management. The DMU products found in CATIA V5 enable collaborative product visualisation and review. IBM delivered the integrated PLM solution for the pilot project running on IBM IntelliStation workstations and IBM **@server** xSeries servers. Hydro-Québec's Equipment Division is responsible for deployment of the PLM solutions.

### **Collaboration for minimum risk**

The IBM PLM solution has helped Hydro-Québec to achieve supplier and engineer collaboration. Problem resolution is now faster, while DMU and collaborative review capabilities help reduce risk at the critical project development stage.

CATIA V5 helps Hydro-Québec to better integrate data from multiple disciplines – including mechanical equipment, fluid and electrical systems, and concrete and steel structures – in a single environment. SMARTEAM provides a common database to store that multi-disciplinary information inside a lifecycle management system.

*“CATIA V5 has already allowed us to reduce the design time for substations by several weeks.”*

Serge Lapalme, General manager,  
Expertise, Equipment division, Hydro-Québec

Such integrated data represents a major benefit to the operators. Upon completion, all plant details and specifications data are linked together and can be transferred to the operation maintenance staff for easier plant maintenance.

### **Further Information**

For more information, contact your IBM Marketing Representative, IBM Business Partner or visit the IBM PLM Web site at: **ibm.com/solutions/plm**.



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