



Southern Alberta Section  
IAS-PES Chapter



## Grid Energy Storage: Policies and Applications

John Martin, P.Eng., Alberta Electric System Operator  
Mark Childerhose, P.Eng., Siemens Canada Ltd.

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*Co-sponsored by AESO, Siemens Canada and TransAlta*

### **Policies:**

Alberta established the regulatory framework for its electric system when generators and loads were clearly differentiated. Energy storage facilities are blurring those distinctions with their ability to rapidly switch between supplying electricity to the grid and withdrawing electricity from it. Requests to connect energy storage facilities to the transmission system have prompted the Alberta Electric System Operator (AESO) to examine the costs that should be attributed to energy storage facilities, the technical standards with which they must comply, and the rules under which they must operate. The AESO currently has initiatives underway to clarify and, where appropriate, develop tariff provisions, standards, and rules that apply to energy storage facilities. Although the existing regulatory framework provides some guidance, participants in Alberta's electric industry can also contribute to the evolution of grid energy storage policy.

### **Applications: Lithium-Ion Energy Storage Solutions:**

Energy Storage compensates for variations in generation within milliseconds and secures stable grid operation. Energy storage solutions make it possible to integrate an increasing amount of solar and wind power generation into distribution grids without the need for immediate extension. In addition to that, energy storage solutions ensure a self-sufficient and reliable energy supply in micro-grids with renewable generation. Energy-efficient processes are of the highest importance for industrial businesses in order to keep energy costs down and exceeding the maximum load only once can lead to incurring high costs. In addition to that, even the shortest interruption of energy supply can lead to a complete failure of production plants. The consequences can have an enormous impact on loss of quality, time, and finances.

The presentation will cover how Energy Storage solutions function as a modular system that combine cutting-edge power electronics for grid applications with high-performance lithium-ion batteries.

**Location:** 110 - 12th Avenue SW  
Calgary, Alberta  
TransAlta  
Building: T1 building  
Room Number: T1-Auditorium

**Upon arrival at the presentation venue:** Sign-in at the security desk in the main atrium of the T2 building. Follow the signs to the T1 building. Take the T1 elevator down one level to the basement. Follow the signs to the registration desk.

**Date:** Monday, Nov 20, 2017

**Time:** 6:30PM to 8:30PM (2 hours) All times are: Canada/Mountain

### **Agenda:**

5:45pm: Doors open  
5:45-6:25pm: Networking and Light meal  
6:25-6:30pm: Opening remarks  
6:30pm: Presentation starts

**Register at:**

<https://events.vtools.ieee.org/m/47774>

Registration closes Nov 16, 2017. Register early, as space is limited.

**Speakers:**



**John Martin** became Senior Tariff and Special Projects Advisor at the Alberta Electric System Operator (AESO) in 2015. He contributes analysis, knowledge, and experience to the strategic development and evolution of the AESO tariff, AESO authoritative documents, and other AESO initiatives.

Mr. Martin first joined the AESO as Manager, Regulatory in 2004. In his previous roles, he was accountable for the AESO's tariff applications to the Alberta Utilities Commission and has appeared eight times as an AESO witness before the Commission. Mr. Martin has over 30 years of experience in the electric industry in Alberta. Prior to joining the AESO, his career included various positions with TransAlta Utilities and Aquila Networks Canada (now FortisAlberta).

Mr. Martin is a graduate of Memorial University of Newfoundland with a Bachelor of Engineering, and is registered as a Professional Engineer with APEGA.



Mark Childerhose is a Senior Systems Engineer and Business Development Manager for Siemens Medium Voltage Systems (MS) in Canada. As part of Mr. Childerhose's role in MS, he provides technical support on Siemens Air Insulated Switchgear (AIS), Gas Insulated Switchgear (GIS), ehouse design and Battery Based Energy Storage Solutions based on customer specific requirements.

Mr. Childerhose joined Siemens Canada in 2004 as a Field Service Engineer, where he was involved with commissioning and maintaining LV to HV equipment as well as a working as a Project Engineer and Power Systems Engineer performing short circuit and protective device coordination studies, ground grid analysis, arc flash studies, power quality, consulting, commissioning of new substations, customer training and project management. Prior to transferring into the MS group in August 2014, Mr. Childerhose was the Service & Engineering Manager for the Customer Service Group in Ontario.

Mr. Childerhose is a graduate of Lakehead University in Ontario with a Bachelor of Engineering, and is registered as a Professional Engineer with Ontario & Nova Scotia, and holds his 309A electrician and Master Electrician licenses.

Please contact Mirza Danish Baig [mirzadanishbaig@gmail.com] if you have any problems registering for the seminar, or if you have any questions.