

## **GLOBAL BUSINESS REPORTS**

### Special Report on Power in Ontario – Power Magazine, November 2014

## Selected quotes from the interview with Roger Simpson, Principal, HH Angus

(from which quotes may be taken for use in the final editorial)

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# Can we start with a brief introduction to HH Angus's expertise as an engineering firm and your role in Ontario's energy industry?

HH Angus began as a consulting engineering firm in the mechanical and electrical sectors in 1919. Today, we have about 200 people working across Canada and internationally in four market sectors: healthcare, technology, commercial and energy. The Energy Division designs systems that deliver heating, cooling, and power generation along with their associated distribution systems, with a special interest in cogeneration. One of the major areas we work in is industry. Much of our experience has been in the food and automotive sectors, working with clients such as Cadbury's, Kraft, Nestlé, General Motors, Chrysler and Ford; however, in recent years we have grown into other areas, such as power generation, and central utility plants.

# Where do cogeneration solutions come into play in dealing with the rising electricity costs faced by large energy users in Ontario?

The cost of electricity has grown significantly in Ontario and has put a lot of industries under pressure. The global adjustment cost, in particular, is very variable and this makes it difficult for companies to budget their energy costs. The Ontario Power Authority (OPA) has various programs running at the moment to help large energy users, such as the Process and Systems Upgrade Initiative (PSUI) program. Through PSUI, the government is helping to pay for a portion of the capital cost of a cogeneration plant, which brings down the power and global adjustment costs for an energy user. The OPA's program is very beneficial for the government, as it not only impacts generation, but also reduces the load on distribution systems. There is also a significant saving on the need to develop new generation, plus you are getting better performance out of the grid. Distributed generation is a cost effective method of delivery that ensures less energy loss and does not require the same infrastructure as renewables. Distributed generation makes for a more effective grid and leads to greater efficiencies; for example, combining heating and power systems to improve overall efficiency of energy fuels such as biogas or natural gas.

### Can you give us an example that illustrates the approach that HH Angus takes to cogeneration projects?

In the area of energy storage, we have been working with a company in Ontario to install flywheels and integrate the system into the grid. We have completed the electrical engineering to bring the project together and this was commissioned in August 2014, as a way to deal with variations in the grid caused by the many wind and solar farms in the area. Energy storage is an area where HH Angus is looking to play a greater role. While this project works on the

frequency side, we are also interested in other aspects of energy storage, such as the battery component and compressed air technology.

#### How are the extreme weather conditions that we are seeing in the region impacting cogeneration plants in Ontario?

Last year, when Hurricane Sandy hit New York, several places that had cogeneration plants kept running and helped to service disadvantaged areas. There is no doubt that extreme weather patterns are increasing significantly. Working in the healthcare industry, we know that regulations for backup power in hospitals are becoming more stringent. System resilience is becoming increasingly important; as a result, more and more hospitals are recognizing the need for reliable emergency power. HH Angus replaced an emergency diesel generator with a cogeneration plant at a healthcare facility in Vaughan, providing the facility with both emergency power and electricity – a first in Canada.

# Considering the costs involved in installing a cogeneration system, are the capital costs manageable from the perspective of a large energy user?

The first step is always to perform an analysis of operating costs to determine if the capital investment produces a return. We model the process for heating, cooling and power on an hourly basis in a typical year, based on available data. We then take into account natural gas prices and look at where electricity prices are going in Ontario.

Now that the provincial election is past, and the government is assured of being in power for four years, we expect to see greater political stability which will hopefully bring in more investment while reducing the frequency of changes in the funded programs.

### Where do you see more opportunities coming down the road for HH Angus in Canada or internationally?

There will be opportunities for international work; we have done work in the Caribbean on heavy oil plant power generation and we are looking at possible flywheel storage projects in the Caribbean. We have two projects in Western Canada and another in the Yukon. The gas price being reasonably low and stable presents opportunities. For example, while Alberta has a surplus of gas, at times they cannot sell the gas economically but using cogeneration give them the opportunity to sell electricity.

### How closely are you playing attention to the proposed developments in northern Ontario related to the Ring of Fire?

The area has a long way to go and, while in theory it has the potential to be a major winner for Ontario, the infrastructure has yet to be developed. HH Angus has been doing some work for mines looking at cogeneration, which could be of particular interest to the sector to help meet their heating and power requirements.

# Going forward what are some of the main trends that you are paying attention to related to energy storage and energy usage?

On the renewable side, we have done a number of anaerobic digestion plants, largely serving the farming industry. We have a number of projects that are up and running in this area and we are looking at more opportunity there. HH Angus also works in the PV solar market, particularly with grid connectivity, as well as with run-of-river hydro. We are looking at the biomass market to see if we can do some work in that area. On the regulatory side, the OPA's Combined Heat & Power Standard Offer Program 2.0 is due out at the end of 2014, focused on district energy systems and the agri-food business. District energy is another key part of our energy business, so we will also be looking closely at this, as well as working with clients to modernize and optimize Canada's infrastructure.

#### Do you have a final message about HH Angus that you would like to share with our readers?

HH Angus is an independent organization that exists to help clients solve their problems. We use whatever technology best suits their operation and we have an integrated mechanical and electrical team with the ability to do just that. We want to help industry to stay in Ontario, and to be efficient and competitive. Ontario, and ultimately Canada, need industry and we want to do our level best to make sure it stays here.

Roger Simpson's credentials: B.Sc. Eng., M.B.A., Division Director – Energy, Principal