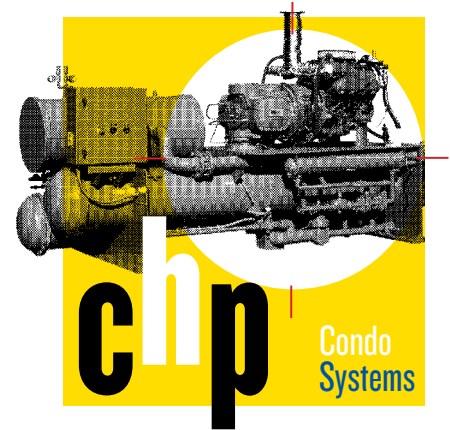




CHP: Combined Heat and Power Systems

Condo Boards Need to Ask the Right Types of Questions



The recent release of the latest iPhone caused now-predictable excitement among millions of consumers. Condominium board directors might feel something similar when they learn of combined heat and power (CHP) systems.

In essence, these systems use generators to create electricity and heat for use on the condo's property. Benefits to condos include potentially lower electricity and heating costs as well as emergency backup power. Condo board directors who watch their cash flow could be tempted to line up for a system right after they pick up their iPhones.

But CHP systems aren't iPhones. They require a longer-term commitment, cost much more and involve more complex technology. So, the decision-making process for choosing a CHP system has to be more sophisticated. Interested boards need to ask the right types of questions – questions like these...

Can the condo afford a generator?

In many cases, the answer is not outright. Few condos, as non-profit corporations, can afford to spend hundreds of thousands of dollars to buy and install a generator. In some cases, older condos have set aside funds to replace emergency backup generators. They may be able to take advantage of government incentives, too.

CHP providers are starting to offer energy supply agreements (ESAs) to deal with the affordability barrier. The provider buys and installs a generator. It recovers its investment, and earns a return on that investment, by selling electricity from the generator to the condo for between one and two decades.

Does the CHP provider offer savings on the electricity and natural gas bill?

Providers who use the ESA business model may sweeten the pot by offering a discount on the price of the electricity they charge for as compared to the price charged by the local electric utility.

Since they also generate heat that can be used for hot water and space heating, the condo could realize savings on its natural gas bill.

What happens if a generator breaks down? The provider will monitor generator performance at all times, so breakdowns should be rare – if they happen at all.

If a generator does stop providing power, the condo draws power from the grid instead. Condo residents wouldn't notice: the system would switch over with nary a flicker of a light bulb to alert them.

If an ESA is in place, the provider gener-

ates revenue only when it generates electricity. Any down time means revenue loss, a problem the provider will race to rectify.

Besides electricity consumed, would the CHP provider charge the condo for anything else?

The provider would have costs beyond the generators. These include:

- natural gas to run the generator
- regular maintenance
- monitoring
- repairs
- insurance for the asset

Providers may charge separately for these costs or they may bundle the costs into the price charged for electricity. Such charges would also affect the duration of the ESA.

The provider may also charge the condo for the equivalent of natural gas saved when using heat from the generator to heat the building and hot water.

Would the generator cause noise or vibration?

Certain types of generators are known to run loud. They can still prove to be good options if the provider takes steps to mitigate noise and vibration so they don't disturb residents.

Can the CHP power a whole complex?

Certain legislation demands all buildings acquire a minimum percentage of their electricity from the grid, so providers can't sell the condo any power generated in excess of that limit.

That said, during power outages, this limit wouldn't apply. The CHP system may be able to work a little harder to make up for the lack of electricity coming from the grid, essentially allowing the condo to keep its lights on (and heat, and air conditioning, and refrigerators, and so forth).

What is the maintenance schedule?

Like any engine, a generator must be maintained. How often will the provider's staff visit the condo to ensure the generator is running properly? Will they do so based on run time? Fuel consumption? Another measure? What is the manufacturer's recommended maintenance schedule?

If the provider's revenue model is based on selling electricity to the condo, the provider must be proactive in maintaining the generator. The condo will automatically switch to the grid to meet energy needs not met by the generators, so if they fail, the condo gets 100% of its electricity from the grid, and

the provider's revenue sinks to zero until the generator runs again.

Result: The provider's financial imperative to recoup its investment and earn a return on that investment means any board that signs an ESA ought to have well-maintained generators.

Could the condominium obtain service and replacement parts from companies other than the CHP provider?

The generator can be expected to outlast the ESA as well as the condo's relationship with the provider. Condo boards must assure themselves that they can keep the generator running until the end of its useful life with parts, including software, and the experts who know how to install and replace them.

What happens at the end of an ESA?

- Could the condo keep the generator running?
- Could the condo realize more of the savings due to the spark gap? (The difference between the price of electricity from the grid minus the cost of generating one's own electricity on-site.)
- Who owns the generator? The provider

or the condo?

- What would a buyout cost?
- What maintenance options would be available?

What legal obligations does a board have to fulfill?

Aside from the Ontario Condominium Act, municipal and other provincial legislation may apply. For instance, certain cities require condos to assess the impact on the grid of adding an on-site generator. Also, a change to a condo's infrastructure may require formal buy-in from all owners.

Legislation does have its positive side. For instance, Independent Electricity System Operator (IESO) regulations no longer mandate that fuel for standby generators be stored on site. This opens up generators to a natural gas distribution system that has proven reliable, even during power outages.

What other questions do we need to ask?

A board's CHP checklist can be much longer than this. What questions would you add?

This article was written with interviews from CHP service provider RIKOS Energy and files from interviews with other industry professionals. CV



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