

GEOEXCHANGE PROFESSIONAL GUIDELINES OFFER

Gordon Monk

Policy and Business Strategy Senior Professional
Power Smart Advanced DSM Strategies

Carbon Neutral Government 2014 Annual Symposium
December 3, 2014

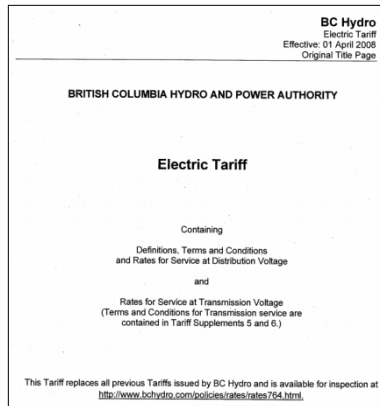
Well... there are “those rumours”!

- Two studies support “those rumours”:
 1. GeoExchange BC study (18 sites):
 - ✓ ~ **5%** perform in line with industry claims
 - ✓ ~ **50%** perform better than conventional systems
 - ? ~ **25%** perform on par with conventional systems
 - x ~ **20%** perform worse than conventional systems
 - ❖ **95%** do not meet industry claims
 2. Electric Power Research Institute (EPRI) US study:
 - ! mirrors GeoXBC study results

The Power Smart Perspective – Implications



- New system concerns:
 - ❖ improper design and installation – customer's system / grid impacts
 - ❖ additional back-up energy required – customer cost / bill impacts
 - ❖ power factor implications – customer cost / bill impacts
 - ❖ BC Hydro infrastructure upgrade – customer cost / ratepayer impacts




- Retrofit system concerns:
 - ❖ fuel switching to electricity – unknown loads / grid impact
 - ❖ BC Hydro Tariff compliance – 15kW or 20% increase to be vetted by BCH
 - ❖ BC Hydro infrastructure upgrade – customer / ratepayer impacts
 - ❖ customer electrical load increases – customer bill impact



However...

- BC Hydro is **conditionally supportive**; if geexchange is:
 - ❖ designed | procured | installed | commissioned | controlled

**PROPERLY!**
- For geoX success, customers must recognize the need to:
 - ❖ Engage the **right people**
 - ❖ On the **right scope of work**
 - ❖ At the **right time**

Geoexchange market share in Commercial/ Institutional Sectors will increase

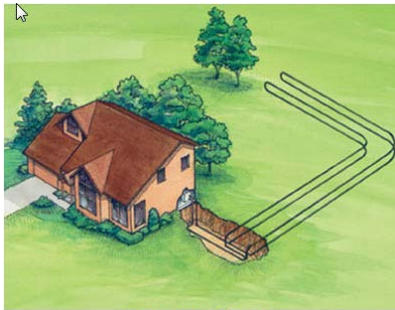


Image Courtesy of WFI Inc.

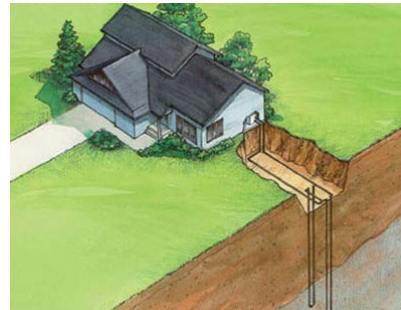


Image Courtesy of WFI Inc.

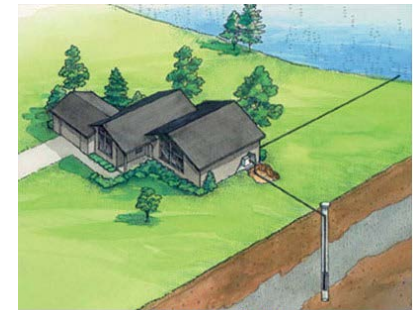


Image Courtesy of WFI Inc.

Power Smart Engineering views geoX to be:

- ❖ a **core technology** for **near net zero** buildings in the future
- ❖ as recognized in the new international outcomes-based green building code
- ❖ **flexible** in application and purpose
- ❖ a better way to apply **high-quality (Exergy)** electricity to thermal loads



- Power Smart provides **study** and **incentive funding** in two programs (indirect support for geoX):



❖ New Construction Program

- air to water heat pump baseline (NCP Energy Modeling Guideline)
- modelled with all building systems to achieve maximum savings
- **minimum 50,000 kWh savings required, over baseline**
- BCH pays up to **100% of study cost** (ECM bonus)
- BCH pays on **incentizable kWh savings**



❖ Power Smart Partner Program (retrofit)

- electric to electric – **existing system is baseline w/geoX proposed**
- other fuel to electric – **non-incentable**
- **minimum 50,000 kWh savings required, over existing**
- BCH pays up to **50% of study cost**
- BCH pays on **incentable kWh savings**

Power Smart Geoexchange Professional Guidelines Offer



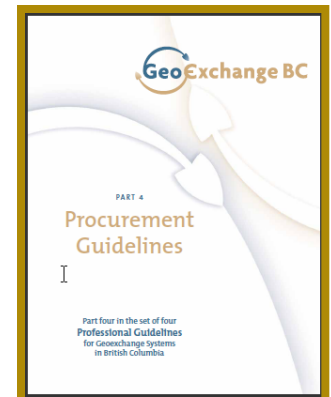
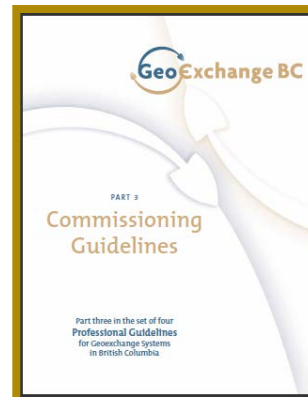
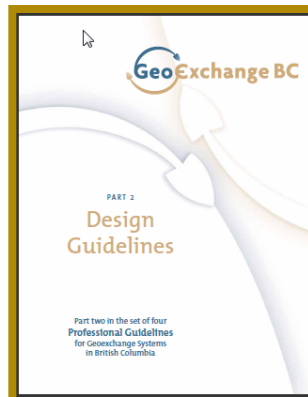
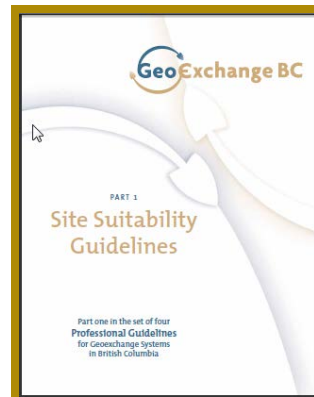
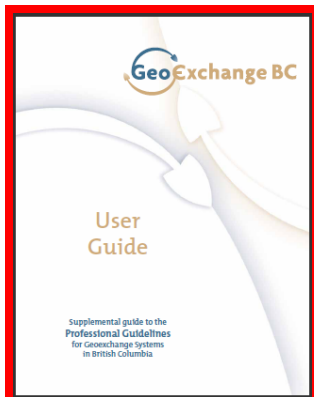
and



- When considering a geoX solution, we want customers to:
 - ❖ be able to ask the right questions
 - ❖ know where to get the right answers

So...

- In partnership with GeoExchange BC, Power Smart will:
 - ❖ provide you a hard copy of the GeoExchange BC “User Guide” today
 - ❖ provide you geoX advisory support through Gordon Monk
 - ❖ support potential geoX projects, qualified by Gordon Monk, by referring you to GeoExchange BC for a FREE electronic copy (\$199 Value) of the bundled set of professional guidelines.



Thank-You!

Gordon Monk

T. 604-623-3616

E. gordon.monk@bchydro.com

BChydro 
powersmart