

**Community Energy Financing**

**Meeting Notes Summary**

**Friday November 24, 2017**

**CAC Roundtables**

City of Guelph:

* Currently working on a proposed merger with Guelph Hydro and Alectra. There is interest in developing a Green Energy Technology Center that would focus on providing technical expertise on residential energy retrofits. They will promote technologies that have been tested and proven to succeed in order to increase residential confidence in investing in these energy conservation/ renewable energy technologies. The goal is to bring these technologies to the mass market. The proposal is going to be presented to council in December.
* Guelph is also working on its 10-year update of their Community Action Plan, they have received funding from FCM and the MOE.

Town of Ajax:

* Ajax is developing a Climate Change Adaptation Plan where they will develop a 3-D model of their municipality in order to conduct climate modeling using data gathered from Durham’s Climate Change Impacts Study. The report will be released by the end of 2018.

Town of Richmond Hill

* Richmond Hill is working with Ontario Climate Consortium (OCC) to work on a risk assessment. It could potentially lead to a Community Adaptation Plan.

Town of Oakville

* Received funding from MCIP and the MOE to start working on Community Energy Plan. Presented a memorandum to council and got approved to partner with Sheridan College in the development of this plan.

Who has applied to the Municipal Champions Fund and what were the projects?

**Ajax**

* Applied to get funding to purchase an electrical Zamboni, an electric car for their fire department, and two other electrical fleet assets
* HVAC upgrades
* Geothermal for their Community Centre
* Electrify their transit buses
* Partner with AMO to pilot electric pick-up pilot. They applied to the GHG Challenge fund to work with FleetCarma in the hopes of tracking total mileage and GHG emissions associated with their fleet.

**Guelph**

* Integrate a smart meter LED light project
* Solar projects
* Water-treatment plant upgrades

**Oakville**

* Consider renewable geothermal facilities
* City Hall HVAC upgrades
* Electric Zambonis
* Applied for electrified transportation
* AMO green fleet pickup electric vehicle
* Side note: There has been money put aside from the budget to work with AMO in a pilot using FleetCarma.

**London**

* Applied for five projects that would cost around $25 million dollars to implement:
* Landfill renewable natural gas
* Fleet compressed natural gas
* Bike share
* Develop a Car share program
* Undergo wastewater retrofits

**Vancouver**

* Vancouver recently established a Centre of Excellence that came out of the adoption of the Energy Step-Code that focuses on new buildings and making them more energy efficient. The Centre of Excellence will be the one-stop-shop for spreading awareness and connecting residents/building sector to the technologies required to achieve Net Zero by 2030.
* Metro Vancouver has also established a shadow carbon price of $150/tonne to their municipal budget.
* LC3 (Low Carbon Canadian Cities) is a national program that aims to bring together six major cities—Halifax, Montreal, Ottawa, Toronto, Vancouver and Edmonton—to replicate TAF’s financial model that would be focused on energy retrofits (each city would have different mandates/focus). Montreal will be focused on their transportation system.

# Alex Benzie, QUEST: Community Energy Financing Research

* QUEST is a not-for-profit organization that does research, engagement, and advocacy to advance smart energy communities in Canada.
* QUEST recently undertook a cursory scan of various types of community energy projects and how they have been financed through surveys, informal interviews, focus groups, and a literature review. This work has been done in partnership with the region of Waterloo and the Community Energy Knowledge and Action Partnership (CEKAP) in order to spread awareness of various financial opportunities to fund more community energy projects.
* There needs to be a consensus on how Smart Energy Communities are defined; various definitions lead to challenges in sparking a conversation in this field of work. QUEST defines Smart Energy Communitiesas a concept or approach to community development that creates the condition to enhance resiliency, reduce energy costs, reduce greenhouse gas emissions, and spur economic development.
* Characteristics of Smart Energy Communities: Maximizing energy efficiency, harness local energy opportunities, and incorporate all these considerations into land use planning to limit the wasteful energy habits.
* A strong emphasis on planning; setting targets and developing an implementation strategy. Strong stakeholder engagement is fundamental to the development of Smart Energy Communities and projects.
* Strategic Energy Project: Is any project that helps a community become a Smart Energy Community: retrofits, new green buildings, local power and thermal production, or alternative fuel infrastructure.
* The Region of Waterloo, through their Community Energy Investment Strategy, outlines a process to prioritize energy investment, identify appropriate business models that exist to support the development of local projects, meet the region’s target, and keep more energy dollars local.
* This research was not funded but provides a glimpse of the potential finance tools currently available—it is able to get a conversation started in regards to smart energy financing.
* Research goals: create a model beyond FIT contracts; gather case studies that match the financing opportunities (this has been the most challenging because not every project is the same, and there are several financing models that can be applied to several projects), highlight planning practices that attract investment, and address areas in which research can be focused on to refine and expand this menu of financial resources.
* Scope: Case studies from municipalities, universities, hospitals, social housing, private sector owners and operators looking into CHP, building energy efficiency, and individual new green building developments.
* Challenges: when addressing the private sector, they have a large variety of access to funding so this cursory scan barely scratches the surface of what is available. The private sector also has a variety of goals based on their business model. It would be easier to identify different investment approaches within the MUSH, residential, commercial, and industrial sector because there is not a one size fits all solution.
* Significant trend emerging: Specialized Financing (the emergence of new tools available to address climate change). The cursory scan focused on savings-backed agreements (energy purchase agreements), soft loans, and energy supply agreements. For more information on all the variety of financing options that were gathered, please contact Alex to receive the draft report on all the tools and mechanisms identified.

**Case Studies**

* The City of Guelph and the City of Waterloo: They have a revolving capital reserve that has paid for: a LED retrofit for one of their municipally owned buildings and the retrofit of their LED street lights. This model has been found to be better than issuing debentures and can be useful for municipalities that may be near their borrowing capacity or have a lower credit rating.
* The City of Toronto released a voluntary guideline for sustained occupancy for multi-unit residential buildings (MURB) to ensure that these buildings have enough power to maintain their hot water and elevator service during prolonged power outages. Through this guideline, Brookfield Condominium Services entered a 20-year Energy Supply Agreement with the CHP developer, Magnolia Generation. This financial mechanism allowed Brookfield to use the electricity generated by the CHP plant for heating, power and back up power. Magnolia owns and operates the CHP plant, which means that there isn’t an upfront cost for the Condo Board.
* Lakeridge Health: undertook institutional deep retrofits for four buildings costing $17 million dollars. Lakeridge Health used an Energy Savings Performance Contract with Ecosystem who guaranteed the energy savings would pay for their retrofit constructions costs. This third party loan managed by Ecosystem has a payback of roughly 10-11 years.

**Lessons Learned:**

* The challenge to achieving Smart Energy Communities: Stakeholder apprehension regarding perceived risks due to lack of trust in new technologies, unfamiliarity with different financing models, competing investment priorities, and lack of community support and community buy-in.
* Successes in Energy Project Implementation: one must provide local policy clarity, encourage multi-stakeholder cooperation and knowledge-sharing opportunities, project bundling, and communicate good work as a value/activity municipalities endorse in their communities.
* Future research focus: on single-family projects, district energy with community solar, new green building designs, get a better understanding of the commercial sector and its potential to access private funding and look into individual municipal policies that attract investment opportunities.
* Goal: To develop a more in-depth tool/ resource that would showcase the varieties of different financing options available in Ontario to encourage more Smart Energy Communities.

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# Herb Sinnock & Peter Garforth, Sheridan College: Colleges as Energy Hubs

* Sheridan College adopted an Integrated Energy & Climate Master Plan, along side a $35-million-dollar investment to implement the Plan. The board became more aware of all the co-benefits this plan provided through its implementation. The Business Plan demonstrated at least a 7% return on investment.
* Perceptual changes: there needs to be a change in the land-use planning approach from focusing on individual energy projects to focusing on an integrated energy plan at a community wide-scale that consists of several energy subprojects. ­ This must be done through leveraging public and private support, focusing less on energy supply and direct initiatives to improving building performance to decrease energy demand, and integrating business models with climate performance measures.
* It is important to note that: the definition of Community can be applied to universities, military bases, universities, cities, neighborhoods, etc.
* Goals: Sheridan College is interested in developing a curriculum that would teach future generations about this form of planning and are also interested in working alongside municipalities to develop their own Climate Master Plan.
* Why world-class benchmarking? It allows for intersectional case studies at the international level regarding community-wide energy projects based on similar climates. This relationship can be a useful resource for climate change conscious planners. Another term that is used is “sister cities/communities”.
* Why focus on energy building performance? This is seen as the easiest approach to achieving transformational change vs. focusing on changing the energy supply chain. Decreasing the energy demand will directly influence transformation within the supply chain; therefore there is a strong emphasis on combined heat and power plants and PV solar energy implementations.
* Methodology: bundling of projects with a community-wide scale focus, where the sum of the economic, social and environmental benefits justifies the high initial upfront costs. This is the fundamental financing approach that is needed to meet the international energy and climate goal of 80% GHG emissions reductions by 80% by 2050 using 1990 as a baseline year. This Climate Master Plan strategy has received positive feedback from stakeholder engagement as it provides a comprehensive picture/story of the overall community co-benefits—the selling point.
* Comprehensive Picture: Increase corporate/community competitiveness by lowering energy costs, increasing employment and increasing free cash flow from private investors; increase corporate/community security by enhancing energy supply security, quality and flexibility; Last but not least, achieving environmental goals by achieving greenhouse gas reductions.

**Windsor Case Study:**

Step One: Goal Setting

* Windsor’s primary focus was job creation—3,000 jobs by 2025 implementing the core CEP sub-strategies.
* Target: 40% below 2014 levels by 2041, which will meet global and provincial greenhouse gas reduction targets.
* Energy-related investments by the community would be attractive as 20-year public bonds.

Step Two: Develop Base Case

* **Energy Analysis:** Windsor underwent a comprehensive energy demand assessment/mapping for the entire municipal region. The comprehensive energy analysis/mapping addressed energy use, GHG emissions, energy supply, and heating and cooling planning by planning parcel for every year starting from the established baseline year (in regards to measurement units—whether it is per energy use, per hectare, per capita etc.—it is up to the organization to establish which units to use).
* This Spatial representation and energy analysis illustrates a picture of how energy is being used and how it has been allocated throughout neighborhoods—developing energy project strategies does not follow a one-size-fits-all approach. This step is crucial in understanding scale opportunities.
* Financial Analysis: Windsor illustrated their energy cost footprint by showcasing the percentage of energy cost by sector and the percentage of energy cost by utility in order to understand where the money is being generated and spent. This outlines which stakeholders to start connecting with in order to achieve free cash flow sources. In Windsor, 80% of their $842 million of their baseline energy costs leaves the city—this is where Windsor can reallocate money back within its boarders.
* Free cash flow will generate private sector investment in order to lead to creating a critical mass in financing the energy projects proposed—community wide-scale projects cannot be solely funded by tax-funded requests. This is the conversation that needs to be had and understood by key stakeholders.
* Challenge: many utilities may not like this reallocation of money.
* Energy Uses and Losses Analysis: provides an illustration of the total amount of energy being used and how it is being used by sector. Under the current conventional system, there is a total of 30% energy conversion losses from the supply chain to the end-users (this means that 30% of $842 million is considered “dead money”). This highlights potential energy project avenues to reduce this energy loss within each sector.
* The city of Windsor uses 54 million GJ out of which the municipality only uses 1%. In order to achieve the international and national GHG reduction goals, focusing on developing energy projects within this sector alone is not enough of an environmental impact.
* Baseline GHG Emissions Analysis: illustrates where the GHG emissions are being emitted by sector and according to what energy source. This illustrates which sector to focus on in regards to reducing GHG emissions and also provides a context as to how CO2 intensive the energy supply chain is: Windsor’s residents emit 8.8 tonnes of CO2 equivalent/resident.

Step Four: Understanding Risk

* Energy Cost Risk Analysis: models the cost of energy according to utility source from baseline year to the projected horizon year. In the city of Windsor’s case, costs are graphed from 2014 to a 2040 horizon. This analysis is crucial to addressing the value of public/private investments.
* Low-risk annual energy cost is projected to be 120%, which equates to $1.8 Billion dollars.
* High-risk annual energy cost is projected to be 280%, which equates to $3.2 Billion dollars.

Step Five: Benchmarking

* Search for a global comparison (“sister community”) to understand the achievable target based on comparable local environmental conditions. This provides confidence in achieving energy reduction targets and the sister community becomes a valuable resource.
* Windsor’s sister city is Manheim
* Oakville is currently working in partnership with Sheridan Collage and has gotten in contact with a town in Sweden.

Step Six: Develop new Business Model

* Input all the data gathered from the analysis into a scenario assessment tool. This integration helps planners adjust targets, build scenarios, test scenarios and risks, and select best-fit scenarios to targets. Through this process, planners are able to provide ongoing reporting and detailed design plans that would generate conversations with key stakeholders regarding recommendations and different scenario possibilities. This process helps gain approval/buy-in as stakeholders are able to become aware and educated about the comprehensive picture/goal that is supported by statistics**.**
* The results of all the analysis will give you: financial balance, emissions balance, technical balance, which you can use to plan an employment balance and economic development balance. This is the conversation to take to council.

Transferable Features Across Communities

* Municipalities need to get serious about scale. Scale mitigates risk. The Climate Master Plan outlines a solid business plan to achieve scale which drives the market to reduce energy supply and GHG emissions through a back-casting approach.
* There needs to be a strong focus on heating and cooling at a large-scale—this would create the most impact in reducing GHG emissions. For the City of Windsor, heating and cooling accounted for ~25% of their primary energy, but equated to ~45% of GHG emissions. Nodes need to be developed throughout the community to develop an integrated energy supply.
* It is suggested that planners should reach out to industries as they are very strategic within their own organization—they should be seen as sources of expertise and data.
* The municipality can get an independent audit of the plan to ensure strategy makes logistical sense and is another method to reduce risk—ensure solid business plan.

## Questions

### **Currently, the Ontario government has not supported CHP in the CCAP, how did this affect the integration of the CHP plant in your modeling?**

Models did not depend on the presence of the CHP plant, the strategic community plan is able to stand on its own as the CHP plant. The cost of carbon would be enough incentive to implement this project at the community scale. It is through having a solid business model and leadership that policy investment and private investment occurs—waiting for political support takes too much time and is often too volatile from one election cycle to another.

### What governance model needs to be cultivated to develop the Climate Master Plan?

There are two main points: First, the end beneficiary (the municipality) must maintain control over the conversation. This is done by leveraging the plan with expertise (expertise is also gained by the stakeholder group throughout the planning development and outreach process), having supply chain representatives integrated throughout the entire process is essential because their support becomes a major asset throughout the lifespan of the project.

Second, analysis and data are fundamental. Without these two factors, it ends up being a conflict of opinion. It is through the integration of a viable business model and climate consideration that makes the implementation of the Climate Master Plan feasible—you need to have an understanding of the Net Present Value of energy costs.

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# Fernando Carou, City of Toronto: Suggestions and Lessons Learned

* Plan for longer planning horizons in order to back-cast Net Present Value on energy costs.
* Focus on the story as the incentive—what would the future look like when if the City were to meet the greenhouse gas emission goals. What steps need to be taken in order to get there?
* There should be a focus on creating demand in order to generate the transformational change we need. Example: The new Toronto Community Centre near harborfront is to get a CHP. The City has been requesting to have more of their new constructions have a CHP plant, now the contractors the city has hired have become trained through their previous experience of building CHP plants for the city—it’s a learning process for both parties.
* Partner with universities as they are a resource; they are resilient to the political cycles and are able to create friction amongst political parties.

Considerations:

* Thermal networks change over time and this needs to be considered (the unknown unknowns), this is why a focus on the story is more important than focusing on the details. Opportunities arise that may not have been predicted during the development of the plan.
* Transform TO is a wonderful document because it uses the principals of backtracking and provides an option on how to meet the 2050 goal by highlighting what needs to be done without ever questioning the fundamental story. The report submitted to the budget committee should be seen as a resource.
* There is a 10:1 community to municipal energy intensity ratio. This is why, in order to achieve any substantial GHG emissions reductions, there must be a strong focus at the community-level scale.
* Incentive: the average abatement costs (carbon price) presents the opportunity for future projects to have negative costs through energy savings.
* The cap and trade funds presents a huge investment potential for scalable energy projects. The challenge arises if the province decides to make the cap and trade revenue neutral. The present price for carbon is not sufficient to move the market towards a low carbon transformation. Therefore it makes sense to start with a low carbon price and reinvest the revenue into reducing vulnerabilities to carbon price increases over time. The goal of a carbon price is to reduce emissions not generate revenue.
* In order for a revenue neutral carbon price to move the market there would need to be a change in the price per tonne from about its present $20/tonne price to a high as $80-120 / tonne of carbon.
* Challenge: there are insecurities between homeowners trusting new environmentally progressive energy companies/technologies.
* In Toronto, Green Streets is a program offered within each ward where community members come together and discuss their experience with their own home energy retrofits. People with similar houses are able to connect and share contacts in order to feel more comfortable undertaking a home renovation project.
* TGS (Toronto Green Standard) is seen as a policy that aims to develop an energy conscious building industry.

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# David Cork, Toronto Renewable Energy Cooperative: The Potential Match between Co-ops and Municipalities to address Financing & Stakeholder Engagement

* Accomplishments: TREC was established 20 years ago. Since then, they have constructed over 180 projects and are producing 55MW of clean power. Raised more than $100 million in community capital, $190 million invested in assets, and are paying more than $9 million per year in returns to their 8,000 investors (and growing). They are projected to see investments triple in the next 18 months based on contracts already available.
* Outreach and educational workshops: TREC Education provides training for grade five through six. TREC is also participating with the Green Collar Careers Program offered for high school students in Ontario (the Green Collar Careers Program is expanding to include BC and Nova Scotia into their repertoire).
* SolarShare was incorporated in 2010 in response to the Energy Act and is now the largest solar energy producing cooperative in North America.
* Federation of Community Power Co-operatives Incorporated is an organization based on co-operatives helping other co-operatives through information sharing and resource building opportunities.
* In 2014, the Indigenous Energy Education programs was launched to help address the energy knowledge gaps within these communities. With the help of some funding received by the IESO, the programs are being used to facilitate energy education exchange throughout Ontario.
* Fintech model (an online platform) promotes scalable green project investment

**What are energy co-operatives able to do?**

* Promote community-scale projects, community ownership, and partner with local municipalities to assist in funding opportunities.
* Community ownership changes the relationship from being energy consumers to energy investors. This is an ideal way to limit “Not In My Backyard” (NIMBY) mentality, support green energy sector growth, promote local jobs, and cultivate a stronger community environment.
* TREC commissioned York University to undergo a research analysis of the economic impacts of investing in community power projects. The results indicated that for every $1 spent on community power projects, $2 was generated in local economic activity.
* The Community Power sector is estimated to drive $5.2 billion of additional economic activity over the life of the current FIT contracts.
* Strengths: Cooperatives are good at finding high profile projects—rallying up public support since there is a sense of pride in partially owning a community energy project, mobilizing private capital, and asking for help and support from other organizations.
* Community Cooperatives are a source of impact investments through the creation of “community bonds” –investment in good work is a source of pride. TREC will be releasing their own community bonds during their first quarter next year.

**Post-FIT Future for Energy Cooperatives**

* Challenge: Ontario’s Feed-in Tariffs allowed for 18GW of green energy to be produced and sold into the grid. These contracts are going to be ending soon.
* Net-metering: allows the homeowner to generate their own energy which can then be subtracted from their energy bill. If the homeowner is able to generate more electricity than is consumed, than the homeowner is able to receive a credit for future bills or sell it to another individual/organization. This is all made possible through a power purchase agreement between the energy produce and the “off-taker” (individual buying the electricity, usually the LDC).

**Next Steps: Asking for Municipal Support in…**

* Policy Support: community members have lots of ideas regarding various community projects they would like to fund, but the Energy Act defines Co-ops as being able to ‘generate and sell electricity.’ Cooperatives want to expand the definition to include ‘the investment in conservation aspects within the energy sector, which include energy storage, demand management, and energy efficiency.
* This would open doors to working in social housing energy projects that do not have access to funds and are the most vulnerable to increased energy prices—this presents wonderful partnership opportunities.
* Promote Virtual Net Metering: allows for the energy generation site to be at a different location than the facility using the electricity. This can be made possible through a Power Purchase Agreement between the energy producer and the energy-end user. This is a great opportunity to develop partnerships between municipalities and energy cooperatives.
* Under the Long-Term Energy Plan (LTEP), they are undergoing a few pilot projects using this power purchase agreement. These projects should be advocated for and supported for more by municipalities.
* There are 17 US states that have already enacted both virtual metering and power purchase agreements. Consequently, they are also the states that have the largest amount of community solar and the largest participation in community cooperatives.

MOE and IESO websites as resources to finding out more information about virtual net metering. Here are some resources found:

* [MOE Net Metering Webinar Presentation: Third-Party ownership and virtual net metering](https://www.ontario-sea.org/resources/Documents/Ministry-of-Energy/2017-01-12%20Net%20Metering%20Webinar%20Presentation%20-%20Third%20Party%20Ownership%20and%20Virtual%20Net%20Metering.pdf)
* [MOE Ontario’s Regulatory Registry: Amendment of Ontario Regulation 541/05: Net Metering, made under the Ontario Energy Board Act, 1998](http://www.ontariocanada.com/registry/view.do?postingId=22563)
* [IESO: Planning and Forecasting the Implementation Plan for 2017 LTEP](http://www.ieso.ca/en/sector-participants/planning-and-forecasting/implementation-plan-for-2017-ltep)

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# Jonathan Frank & Jennifer MacDonald, CoPower: How innovative financing is bringing more generation to the Market

* By 2040, there will need to be over $12 trillion invested in new zero-carbon generation capacity worldwide to place the power sector on a 2-degree warming trajectory. This presents huge potential for distributed renewable energy and energy efficiency solutions. The challenge arises with limited existing capital markets because roughly two-thirds of energy projects have been stalled. It is common for projects that are under $10,000 dollars to not be financed by large institutions.

**CoPower’s framework to unlock capital**

* Make the distribution energy sector (that has a $500+-billion-dollar global market) accessible through an online ‘fintech’ platform that aims to direct investments from fossil fuels into impact investments streams. In Canada alone, impact investment is estimated to grow to a $30-million-dollar industry by 2020, this is an advantageous time to use increased public interest in sustainability to fund environmentally conscious work.
* CoPower is Canada’s first clean energy investment platform and the 6th largest Green Bond in Canada. Their mission is to help individuals participate and profit from this transition into a clean energy future. They have been doing this for four years and have invested in 6 different projects ranging from $60,000 to $6,800,000, which have reduced GHG emissions ranging from 35 tonnes CO2/year to 1168 tonnes CO2/year.
* CoPower is focused on getting investors excited about investing in hard assets that are already operational. They are a private placement that offers a competitive rate of return of 5%, carbon reductions, and provides individuals an opportunity to diversify their portfolio’s.
* Bonds: 3-year investment at 3.5% or a 5-year investment at 5%. Individuals are eligible to apply with registered accounts. If someone was to be interested in securing their investments with the government, the highest return rate would be <2%, some restrictions may also apply depending on institutions offering the green bonds, such as being a credited investor or have institutional accounts.
* The city of Ottawa issued a 30-year green bond with a 3.25% investment—this bond was oversubscribed in moments. The demand for green bonds is very high and there are limited sources. Green Bond issuers are eligible for offering a premium on their bonds due to the high demand for green bonds. It is also observed that investors are not trading their green bonds either.
* Currently, CoPower is at their 5 million out of their 20-million-dollar offering—they are limited in size but they have developed their niche market. CoPower wants to create a national community made up of individual investors that are passionate about participating in a green movement through investments.

**Flexible Investment Products**

* Retail Friendly Product is the Green Bonds; they are used to offer debt financing for operational projects.
* For Credited or Institutional Investors they have a Warehouse Facility. This facility lets project developers know that CoPower does have the capital, which can be transferred to them quickly. Green bonds are then sold to replenish the warehouse—this is a type of revolving fund.
* Direct Opportunities: allows funding opportunities for investing in “greening edge” projects: meter energy adaptation, lithium battery, microgrids, and equity investments.

**New Project—Geothermal heating and cooling**

* There are 16,000 residential geo-exchange projects in Canada, which equates to roughly 800 projects per year—this could be a lot higher.
* CoPower is investing $1 million dollars in the Greater Montreal Area to help homeowners transition away from oil-based heating. The challenge of switching to geothermal technology is the high upfront capital cost of approx. $30,000 per house. CoPower is working with a company that developed their business model on eliminating the upfront capital costs by providing the service of geothermal heating and cooling at monthly fixed costs—this would avoid 380 tonnes of CO2 annually.
* CoPower is currently in discussion with the Canadian Geo-exchange coalition to scale up geothermal in residential homes at a national level.

## Questions

### How easy is it for individuals to transfer their investments into TREC community bonds or CoPower green bonds?

TREC: There needs to be an offering statement posted on our online website. Once the offering statements are open, individuals are able to sign up electronically and make their investment directly or through transferring from an RSP holding account.

CoPower: it is not as simple since they are a private placement and are established as a market dealer. This means that for individuals to invest, they must go through financial advisors in RBCDS, CIBC at Scotia Bank to help facilitate the investment, or if the individual has an online broker account, at Questrade.

The next step that is being considered is a partnership between CoPower, TREC (as funding suppliers) and municipalities that are able to leverage some expertise in energy projects and promote credibility.

### What are the de-risking mechanisms that we can put in place to encourage more municipalities to consider energy projects?

Partnerships between municipalities, coops and other financing models would be ideal for de-risking energy projects as they are able to leverage organizational strengths. This is an opportunity if the GHG funds are not able to fund the energy projects municipalities are already considering to undertake. Councils are unlikely to spend or risk tax-payer money on a project that not every resident will agree with, but they have the portfolio of buildings that have the potential to have various scalable energy project.

Municipality perspective: the value proposition would be to get funding from a different organization, which would provide the municipalities with certainty regarding the energy cost for that specific facility when they sign a Power Purchase Agreement. This is the uncertainty that is lacking in both the natural gas and electricity markets. Price stability is something that the majority of the population would support rather than focusing on the climate change perspective.

Guelph is wondering if one can put a price tag on reduced risks. An analogy in the private sector is when someone has a low rate, they have a lower cost due to a lower volatility of the stock price; therefore, the higher the risk, the higher the rate of return is. Is there a price tag on the benefit by reducing their exposure to a volatile commodity? Sort of like a hedging cost?

### Some municipalities are also shareholders in their local utilities. When there is a co-op investment made within the municipality on an energy project, is there a revenue loss at the utility end? How would this affect the municipality?

Local utilities are wire companies; local utilities transitioned to a fixed connection charge model that took three years to implement. This means that Local Distribution Companies (LDCs) get a fixed cost when a consumer connects to the grid, no matter how much energy is being consumed. This is also known as ‘rate-decoupling.’ This was put in place so the local utility does not become uncooperative when other third parties started producing their own power.

Rate-decoupling has allowed a shift in the role LDCs place in the energy system. LCDs are becoming more like system operators as they manage the energy distribution produced by various energy production locations scattered throughout their jurisdiction.

There are conversations occurring within small LDCs looking forward to investing in energy projects, they are seeing a value in this change in role.

### Are flow-through shares going to be used in helping finance green energy projects?

It depends on the business model, there are some businesses that heavily rely on flow-through shares. The resource and extraction companies (oil, gas, and mining) are the ones how mainly use this type of financing mechanism.

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# Aaron Freeman, GroupSolar

* GroupSolar’s target audience are residential homeowners. Their goal is to use government incentives, a group purchase initiative, and leverage GroupSolar’s expertise to increase the amount of rooftop solar being installed in Ontario. This will increase local economic development, reduce peak electricity demand (most expensive and ghg intensive), reduce reliance on conventional energy sources and support consumer confidence in their solar PV system investment.
* GroupSolar is going to be launched and made public in January of 2018. They are waiting for certain policies and programs are made public in order to finalize some details.
* Group purchase initiative: bring down the cost of solar panels for individual homeowners by facilitating a pool where individuals are able to participate in if they are interested in purchasing roof-top solar PV panels. It is through this bulk purchase that participants are able to decrease their cost by at least 5% and get a high-quality product.
* Expertise and Long-term rating system: GroupSolar will not represent any individual company in the sector but aims to provide a transparent platform that gathers their expertise on companies currently available to install roof-top solar. They eliminate all the guesswork for homeowners in selecting an installer. Eventually, a long-term rating system will be developed by homeowners who have experienced services provided by the installers.

**How it works**

* Outreach to homeowners through partners (with existing commercial and non-profit networks) and conventional advertising mediums.
* Homeowners sign up to the GroupSolar site where they will provide information the installer would need in order to serve them.
* GroupSolar selects the installer with the best track record and highest quality product to meet the homeowner needs and preferences.
* GroupSolar uses the leverage of its buyers’ pool to ensure the best price.

**How municipalities can support GroupSolar**

* Municipalities could consider incorporating Local Improvement Charges (LICs) into their regulations to reduce anxiety associated with high initial upfront costs and long-term return on investment for the life cycle of the installed roof-top solar.
* Municipalities are encouraged to partner with GroupSolar to promote their program to homeowners using already existing municipal communication networks and resources. This would be beneficial as it would create concentrated group purchase pools that would decrease installation costs even more.
* Municipalities may participate in a pool themselves using selected municipal buildings across Ontario to bring down the costs for the government.

## Questions:

### Would Cooperatives be able to use this GroupSolar model where individuals would invest their RSP into financing individual rooftops through a group purchase initiative?

Right now, this is not possible because TREC is only able to accept funds on a project-by-project basis. The project needs to have a solid business plan that meets certain federal revenue thresholds and pay-out requirements in order to be accepted. There might be a chance to develop a project and business plan based on an aggregated community roof-top solar installation.

### There is research being done on how community energy credit unions and cooperatives are being used to distribute energy equitably. This concept has not been mentioned in any of the presentations. Has access to renewable energy sources being an equity concern for any of these organizations presenting today?

TREC: Yes, I will revert back to the statement that I mentioned earlier regarding asking for municipal support in pushing virtual net metering. As an example, community solar is predominant in New York State where their community energy program is based on a virtual net metering model. The community invested in a 5 MW unit on a landfill site/brownfield site that would not be used for agricultural purposes. The majority of the energy gets transferred to an “anchor tenant,” usually a municipality because they are an establishment that is likely to be there for the foreseeable future. The energy savings incurred by the municipality returns back to the local homeowners by a reduced income tax. In low-income neighborhoods, they receive a 10% reduction in their local income tax—this is the social component. Every virtual net metering community energy financed model is not the same and can be altered to benefit the community, in however they choose to see fit.

### Currently, are there any cooperative energy projects in Ontario that are incorporating individuals in the community with unbanked/low credit scores?

GroupSolar: The local improvement charges provide an opportunity for low-income households to consider solar PV installations because this program eliminates the high upfront costs and the risk of having to stay in the household for a prolonged period of time. These are the two major challenges that low-income families face that would prohibit them from benefiting from a renewable energy source. GroupSolar would like to promote these systems throughout Ontario. Through the creation of these community-based financing models, the constituencies that are gathered can potentially be mobilized to make renewable energy projects more accessible for low-income communities.

One hour of labor, in the city of Toronto, to have the solar roof-top PV system connected to the grid costs $2,200 dollars—this is approximately 10% of the cost of the solar PV system. In Oakville, there is zero cost for the connection. In Vaughan, the connection fee costs $750. In Ottawa, it is $1,500. The cost is based on the attitude the local LDC has towards renewable energy supplies being added to their grid. This can be solved through municipal lobbying and provincial action. GroupSolar would like to lead this advocacy work in eliminating these unnecessary costs.

Comment:Municipalities struggle with promoting renewable energy within their communities because of: lack of financing and insufficient energy literacy when undergoing stakeholder engagement. There is strength in community-lead energy projects because it is able to decrease NIMBY-ism, promote energy knowledge transfer, and provide opportunities for those individuals that are interested in renewable energy to participate in energy projects, which would counteract the often minority (but loud) opposition.