



# FINANCING OPPORTUNITY OVERVIEW

# Executive Summary



Diverso Energy is looking for Project Financing for the development of Canadian and US based Geo-Exchange (GX) Power Purchase Agreement (PPA) projects.

## What we are looking for:

- Access to \$30M-\$40M of Committed Capital over the next 3 years to fund the construction of GX systems.

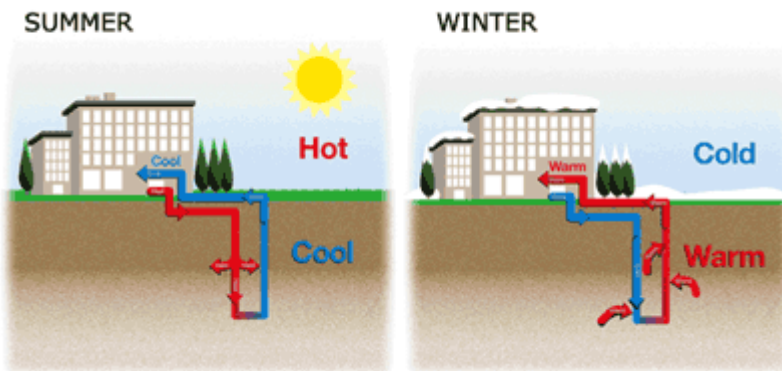
## What we are offering:

- 6-7% interest on each loan amortized over 25-30 years.
- High Security of Cash Flows due to:
  - Diverso Energy's leadership team experience.
  - Contractual ability to turn off heating and cooling in the event of default.

# What is Geo-Exchange

## The Earth as a Renewable Energy Source

- Ground is the median annual air temperature and remains constant between 43°F – 57°F.



## The Geo-Exchange System

- **3 Main Components:**
  - Ground Loop, a series of high density polyethylene pipes buried under the ground.
  - Circulating pumps that move the fluid within the ground loop.
  - A heat exchanger that connects the ground loop to the building's mechanical system.
- During the winter – Extracts heat from the ground and distributes throughout the building.
- During the summer – Collects heat from the building and sends it to the ground loop to be dissipated.

## The Market Opportunity

- 1. Building Code Requirements:** Increased focus on environmental sustainability and energy efficiency from both the Federal and Provincial/State governments (i.e. Targets set at the COP<sub>21</sub> climate change summit in Paris).
- 2. The Competitive Landscape:** The trend toward investing in sustainability (LED lighting, improved window glazing, etc.) has been led by the large real estate holding companies.
- 3. Shifting Buying Patterns:** Millennials, which represent over 25% of the population, place significant value on building sustainability and accessible green space (often only available on the rooftop).
- 4. Geo-Exchange is a Proven and Robust Technology:** Benefits include: reduced energy consumption, reduced GHG emissions, reduced water consumption and chemicals, eliminating noise pollution, etc.

# The Challenge



There are two key hurdles that have historically hindered the success of large scale Geo-Exchange projects



Capital Cost

&



Technology Risks

The Diverso Energy Solution addresses both of these

## **Diverso Energy provides a unique utility-like Geo-Exchange model**

- Design, installation, long term maintenance of the Geo-Exchange solution for no upfront cost
- The PPA converts a capital cost into a long term operating expense:
  - Cost can be passed along to tenants or condo owners as a common area operational expense
  - A Diverso Energy goal is to ensure the PPA cost will not exceed the operational savings realized from the Geo-Exchange system (energy, water, maintenance, etc.)
  - Performance guarantee removes the operational risk from owner

# Power Purchase Agreement (PPA)



**Each PPA contract will contain the following common elements:**

- A 25 – 30 year term
- Guaranteed monthly fees with a 2% annual escalator
- A performance guarantee based on proper building operation
- PPA to be registered on title
- Ability to turn off heating and cooling in the event of default



## The Diverso Energy Advantage



### Benefits to the Developer/Owner include:

- Construction Budget Reduction (cooling towers, boilers etc.)
- Reduce space requirements of HVAC (Architectural Options)
- Marketing appeal of a Green Building
- Financial Benefits of a Geo-Exchange solution without the cost (i.e. accelerated depreciation and rebates like the T.G.S.)
- LEED points

*This solution allows Developers to respond to external Sustainability pressures that would otherwise be impossible*



## The Diverso Energy Advantage



### Benefits to the Long Term Owner include:

- Hedging against future gas price increases (fixed thermal energy cost for life of PPA) & cost certainty.
- Expected financial savings over the lifetime of the contract.
- Improved real-estate market value & marketability.
- A quiet outdoor green space or terrace due to the elimination of a cooling tower or condensing unit.

## The Diverso Energy Executive Team



**TIM WEBER** : 11 years Geo-Exchange sales, installation and service experience for multi-family residential and commercial projects.

**JON MESQUITA, MBA** : 9 years of Business Management, Business Development and Operations Experience for both small and large technology firms.

**SERGIO ALMEIDA, P.Eng.**: 5 years of Geo-Exchange Engineering experience in design, implementation and correcting distressed existing GHX installations. Successful portfolio of over 80 Geo-Exchange projects. Currently owns and manages the largest Geo-Exchange Engineering company in Canada.

**ERIC GERMAIN**: 8 years of Geo-Exchange Drilling experience. Currently owns and manages a Geo-Exchange Drilling company in Canada.

# The Diverso Energy Business Strategy



The Diverso Energy Business Philosophy is Structured around 4 Key Ideals:

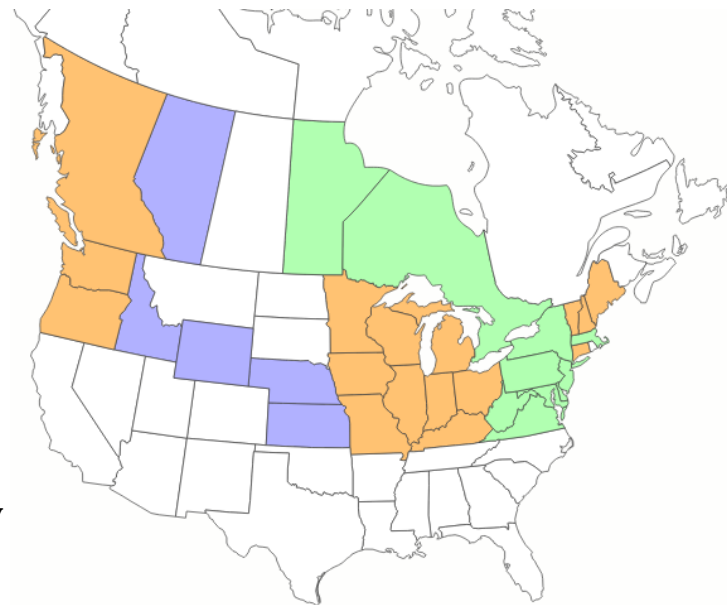
- **Be Consistent:** Leverage the technical and financial expertise of the Diverso Energy Leadership team to utilize the model and processes that are easily replicated to ensure the success of each project.
- **Be Lean:** Leveraging partnerships with vetted and trusted industry experts to execute the construction of each project allowing Diverso Energy to scale quickly to address market opportunities.
- **Be Focused:** Stick to what we are good at and can guarantee success.
- **Be Prudent:** Manage growth carefully, maintain strong cash reserves, only select partners who share our vision for excellence etc.

# Our Target Market

## Primary



## Secondary



### Legend:

- Current Target Market
- Plans to Expand to these Markets  
(BD work underway for many)
- Potential Future Market Opportunity

### Factors Impacting our Regional Focus:

- Existing Partner Relationships (i.e. Geo-Exchange Drillers)
- Market Dynamics (Is Sustainability Important?)
- Energy Costs
- Climate Factors
- Competition

# Go to Market Strategy

## Current Strategy: Focus on New Construction

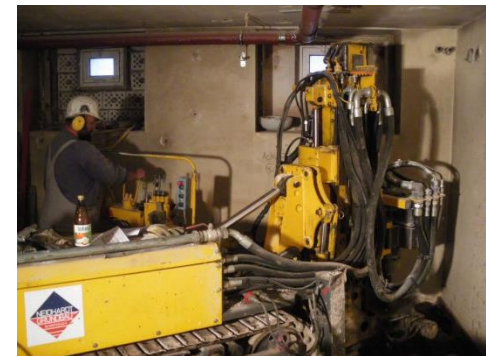
PROS	CONS
<ul style="list-style-type: none"> <li>Market Size is large (majority of buildings in target market are a fit)</li> <li>Pre-surface drilling technology allows Diverso to minimize impact on developers construction timeline</li> </ul>	<ul style="list-style-type: none"> <li>Construction timeline is 12-18 months (Construction to commissioning)</li> <li>Construction Risk – <i>however</i> mitigated by a stringent lending culture in Canada</li> </ul>

12 – 18 months



## Future Strategy: Expand to include the Retrofit Market

PROS	CONS
<ul style="list-style-type: none"> <li>Construction timeline is shorter (3-6 months)</li> <li>In building drilling technology has recently been developed</li> </ul>	<ul style="list-style-type: none"> <li>Buildings with the right characteristics to be a fit are more scarce</li> <li>Owners traditionally haven't been interested in investing in the infrastructure of these buildings - <i>this is now changing</i></li> </ul>



# The Perfect Fit



Diverso Energy is uniquely positioned to establish itself as the Leader in Geo-Exchange Solutions in North America



**The right Leadership Team & Partners**



**The right model**



**The right market timing**

# Win-Win-Win Business Model

## DEVELOPER / OWNER

- Payments are off balance sheet and are accounted for as a pass-through operating expense
- Saves significant upfront development capital
- Increased building marketability

*Example*



## TENANT / CONDO OWNER

- Payments are predictable and stable thereby reducing exposure to volatile energy costs
- Lower monthly energy and maintenance costs
- Increased marketability and value

*Example*



## DIVERSO ENERGY / PARTNER

- Predictable, lucrative and low risk long-term returns
- Robust and low maintenance technology
- Scalable business model (can scale to both volume and geography)

*Example*



### System Comparison:

<b>Traditional System Cost</b>	<b>\$1,750,000</b>
Geo-Exchange System Cost	\$2,500,000
(minus) Diverso funded loop	\$1,200,000
<b>Net Geo-Exchange Cost</b>	<b>\$1,300,000</b>
<b>Upfront Cost Savings</b>	<b>\$450,000</b>

### 30 year Average Annual Savings: (per unit)

Traditional HVAC Condo Fee	\$1,200
Diverso Energy Solution Fee	\$750
<b>Net Annual Savings</b>	<b>\$450</b>

### Investment:

Upfront Construction Cost	\$1,200,000
Annual Revenue* <small>(starting within 18 months from first disbursement)</small>	\$144,000
Term	30 Years

*\* + 2% Annual Inflation Adjustment*

## In Summary

- The market opportunity for Geo-Exchange is significant, *however*, the capital cost and operational risk has historically been a barrier to entry.
- Diverso Energy's solution removes both the financial and operational risk of Geo-Exchange and allows the developer to retain all of the benefits including reducing their construction cost.
- This solution is uniquely designed to provide a win-win-win solution rewarding the Developer, the Tenant/Condo Owner and Diverso Energy/Investment Partner.
- The Diverso Energy solution is lucrative, easily scalable and secure.

### Yield



### Scalability



### Secure Cash-Flows





# Ideal Partnership Structure



Diverso Energy is open and flexible to various partnership structures, however, our preference is a debt-based project finance structure.

## **Diverso Energy Responsibilities:**

- Diverso will design, install, own and maintain the Geo-Exchange system for the life of the contract  
Diverso will perform all administrative duties as it relates to the PPA (i.e. Invoicing, remitting payments to investment partner, etc.)
- Diverso Energy will interface with the Building Owner on all technical and financial queries.

## **Diverso Energy Requirements:**

- Access to \$30M - \$40M of Committed Capital over the next 3 years based upon a predetermined qualification criteria (The average GX System is approximately \$1M)
- Proof of committed capital to be provided upon request (often a requirement by Developers)

# Ideal Partnership Structure



## Investor Return Profile:

- 6-7% interest on each loan amortized over 25-30 years.

## Investment Security:

- Construction Risk is mitigated by the Diverso Energy's leadership team experience and proven processes & contractual requirements from the Developer.
- Payment Risk is mitigated by the contractual ability for Diverso Energy to shut off access to heating and cooling (seen as an essential service in the event the building goes into receivership).
- 30 year PPA contract will be assigned to the Finance Partner in the event of a Diverso Energy default.
  - Loan to value ratio of 52% - 65% (7% discount rate)

# Project Profile Detail



**Each Project is Broken down into 3 Sections:**

## **1. Qualification and Due Diligence:**

- Prior to mobilization on any project, Diverso Energy requires proof of the following minimum requirements:
  - History of successfully building similar projects.
  - Senior Lending is in place including a copy of the term sheet from the Lender.
  - Recognition from the Lender that the PPA will be registered on title
  - Estimated Budget or Pro-forma for the building (different if condo vs rental)
  - Details (potentially including CV on PM, Architect, MEP and developer)
  - Site Plan Approval documentation
  - Building Permit
- Diverso Energy will also perform a feasibility study on each project including:
  - Heating and Cooling load analysis (peak and annual loads) – balancing these loads is critical
  - Full financial analysis (see sample pro-forma on next page) to ensure that the Diverso Energy fee is completely offset by operational savings and the return is in line with Diverso Energy and investor requirements
  - Geo-Exchange design confirming it can accommodate the structural design of the building
  - Geological feasibility (confirming geological characteristics of the drill site)

# Example Project Financials

Cash Benefit to Developer		Energy, Maintenance, & Life Cycle Savings (for Condo Corp)					
HVAC System utilizing Diverso Geothermal	\$ 1,300,000	Year	Energy Savings	Maintenance Savings	Capital Reserve	Diverso Charge	Net Savings
Conventional HVAC System (boiler CT heatpumps)	\$ 1,600,000	1	\$ 38,000	\$ 26,000	\$ 12,000	\$75,000	\$ 1,000
Construction Savings (equipment avoided)	\$ 300,000	2	\$ 39,520	\$ 27,040	\$ 12,600	\$76,500	\$ 2,660
Diverso Connection Fee (per sq. ft.)	\$ -	3	\$ 41,101	\$ 28,122	\$ 13,230	\$78,030	\$ 4,422
Total Diverso Connection Fee	\$ -	4	\$ 42,745	\$ 29,246	\$ 13,892	\$79,591	\$ 6,292
TGS (Toronto Green Standard) DC Rebate	\$ -	5	\$ 44,455	\$ 30,416	\$ 14,586	\$81,182	\$ 8,275
<b>Net Construction Cost Savings</b>	<b>\$ 300,000</b>	6	\$ 46,233	\$ 31,633	\$ 15,315	\$82,806	\$ 10,375
Tax Incentives	NO	7	\$ 48,082	\$ 32,898	\$ 16,081	\$84,462	\$ 12,599
		8	\$ 50,005	\$ 34,214	\$ 16,885	\$86,151	\$ 14,953
		9	\$ 52,006	\$ 35,583	\$ 17,729	\$87,874	\$ 17,443
		10	\$ 54,086	\$ 37,006	\$ 18,616	\$89,632	\$ 20,076
		11	\$ 56,249	\$ 38,486	\$ 19,547	\$91,425	\$ 22,858
		12	\$ 58,499	\$ 40,026	\$ 20,524	\$93,253	\$ 25,796
		13	\$ 60,839	\$ 41,627	\$ 21,550	\$95,118	\$ 28,898
		14	\$ 63,273	\$ 43,292	\$ 22,628	\$97,020	\$ 32,172
		15	\$ 65,804	\$ 45,024	\$ 23,759	\$98,961	\$ 35,626
		16	\$ 68,436	\$ 46,825	\$ 24,947	\$100,940	\$ 39,267
		17	\$ 71,173	\$ 48,698	\$ 26,194	\$102,959	\$ 43,106
		18	\$ 74,020	\$ 50,645	\$ 27,504	\$105,018	\$ 47,152
		19	\$ 76,981	\$ 52,671	\$ 28,879	\$107,118	\$ 51,413
		20	\$ 80,060	\$ 54,778	\$ 30,323	\$109,261	\$ 55,901
		30	\$ 118,509	\$ 81,085	\$ 44,886	\$118,509	\$ 125,971
<b>Total Cash Value Year 1</b>	<b>\$ 300,000</b>	<b>Total</b>	<b>\$ 2,012,719</b>	<b>\$ 1,377,123</b>	<b>\$ 730,534</b>	<b>\$2,909,418</b>	<b>\$ 1,210,959</b>
<b>Cumulative Cash Value Years 1-3</b>	<b>\$ 300,000</b>						
<b>Cumulative Cash Value Years 1-6</b>	<b>\$ 300,000</b>						

Energy Profile & Diverso Energy Cost Structure		Condo Fee (Common Area) Savings Summary				
<i>Energy &amp; Maintenance Savings:</i>						
Annual Energy Savings & Water Savings	\$ 38,000		Year 1	Year 10	Year 20	Year 30
Annual Maintenance & Operation Savings	\$ 26,000	Annual Condo Fee	\$ 0.76	\$ 1.10	\$ 1.65	\$ 2.44
Future Replacement (Capital Reserve) Annual Savings	\$ 12,000	Savings per Sq. Ft.				
Total Annual Condo Fee savings for owners	\$ 76,000	Annual Diverso Charge per Sq. Ft.	\$ 0.75	\$ 0.90	\$ 1.09	\$ 1.19
Total Ann. Condo fee savings (per sq. ft.)	\$ 0.76	<b>Net Annual Savings per Sq. Ft.</b>	<b>\$ 0.01</b>	<b>\$ 0.20</b>	<b>\$ 0.56</b>	<b>\$ 1.26</b>
Annual Diverso Thermal Energy Charge	\$ 75,000					
Year 1 Net Savings for Tenants	\$ 1,000					
Inflation Rate on Energy Cost	4%					
Inflation Rate on Maintenance	4%					
Inflation Rate on Operating Consumables	5%					
Diverso Charge Inflation Adjustment	2%					

Project Summary			
Developer Value	Year 1	Year 3	Year 6
	\$ 300,000	\$ 300,000	\$ 300,000
30 Year Common Area Savings		\$	1,210,959

# Project Profile Detail



## 2. Project Construction:

Project Construction for new construction will be completed over 3 phases:

PHASE 1	PHASE 2	PHASE 3
<p><b>Timing:</b> Pre-Building Construction</p> <p><b>Duration:</b> 2-3 Months</p> <p><b>% of Drawdown Required:</b> 85%</p> <p><b>Scope of Work:</b></p> <ul style="list-style-type: none"> <li>• Full Geo-Exchange Engineering Design</li> <li>• Site Assessment and conductivity tests (as needed)</li> <li>• Complete Borehole drilling including installation of vertical pipes and grouting</li> </ul>	<p><b>Timing:</b> Final Stages of Foundation construction</p> <p><b>Duration:</b> 1-2 Weeks</p> <p><b>% of Drawdown Required:</b> 5%</p> <p><b>Scope of Work:</b></p> <ul style="list-style-type: none"> <li>• Horizontal connections including running all supply and return lines into the buildings mechanical room</li> <li>• tie ins of all vertical pipes including construction of Geo-Exchange manifold</li> </ul>	<p><b>Timing:</b> Mechanical System Completion</p> <p><b>Duration:</b> 1 Week</p> <p><b>% of Drawdown Required:</b> 10%</p> <p><b>Scope of Work:</b></p> <ul style="list-style-type: none"> <li>• Build the Header and connect to the horizontal connections</li> <li>• Install circulating pumps and wireless control system</li> <li>• Commissioning of the Geo-Exchange loop including flushing, etc.</li> </ul>

\* The typical project will span 16-18 months (from the date of the first drawdown to the completion of Phase 3)

\*\*Diverso Energy will Design and Project Manage each Geo-Exchange installation ensuring it is completed to the required standard

## 3. PPA Commencement:

- Each PPA contract will contain a predetermined commencement date that contractually requires the Developer to begin payments independent of the progress made on the building or Geo-Exchange System
- Payments will be made monthly to Diverso Energy for 300 – 360 months
- Payments to Diverso Energy are subject to a 2% annual inflation adjustment

*\*\* As the exclusive heating and cooling option, coupled with the contractual ability to turn off or throttle access to the system, the security of these cash flows are extremely high.*



**THANK YOU**

# Benefits of Geo-Exchange Cooling

**Improve Building Esthetics & Allow Architectural Freedom**





# Benefits of Geo-Exchange Cooling



**Eliminate Costs From Traditional HVAC Structural Accommodations**



## What Does Diverso Energy Provide?

- Preliminary no-cost analysis and pre-qualification
- Financial modeling
- Full Engineering of Geo-Exchange system
- Design support for MEP during integration of Diverso ground loop
- Long term thermal energy purchase agreement
- Build, Own, and Operate the ground loop infrastructure
- Project Capital

### **Bore Field Design:**

- Based on building's heating and cooling loads
- Hourly load calculations are critical
- Understanding building diversification
- Thermal conductivity of the ground
- Minimizing loop size to maximize ROI
- Hybrid possibilities

## Diverso Energy: Construction Phase



Diverso Energy will design & install the entire ground loop heat exchanger. This includes:

- Site assessment, permits, surveying
- Drilling
- Horizontal tie-in
- Indoor manifold and controls
- Coordinate all work and requirements with the general contractor

## Diverso Energy: Construction Phase



**Diverso Energy Will pre-drill the entire loop under the building's footprint before site work begins**

- No impact on construction timeline
- Can often begin before final building permit

# Diverso: Construction Phase





## Valve Vault

