

SUBTERRA RENEWABLES
BUILDING A
SUSTAINABLE
FUTURE



SUBTERRA RENEWABLES IS TAKING A CENTRAL ROLE IN ADDRESSING CLIMATE CHANGE AND ACCELERATING THE TRANSITION FROM CONVENTIONAL HEATING AND COOLING TO GEOTHERMAL EXCHANGE.

BUILDING A SUSTAINABLE FUTURE

PROJECT MANAGED BY:
HAYDEN TURNER

As countries begin to take steps towards reducing emissions, Toronto-headquartered Subterra Renewables, a company that specialises in geothermal heating and cooling systems for multi-residential and commercial buildings, offers a solution that may significantly help to accelerate this process.

Geothermal systems are sustainable and highly energy efficient, saving operating costs while being reliable, with low maintenance requirements. The systems are also safe – they have no odour, no flue, no flame, and no danger of fire, and emit no carbon dioxide. The comfort of tenants is also enhanced as they provide adequate distribution of heating and cooling, eliminating the uneven temperatures often experienced with conventional systems.

Subterra focus is on a geothermal exchange system that uses ground loops beneath the Earth's surface to circulate fluid. In winter, the fluid absorbs heat from the Earth to heat the building. In summer, heat is transferred from the building to the ground and then dissipated through the loops, generating cool air in the process.

Subterra takes a holistic, collaborative approach to system design. Each building is unique,

and its process determines the best solution for the specific characteristics of a building or site. Every project is designed to optimize development and energy efficiency.

INTRODUCING AURA

Company President Matthew Tokarik explains that Subterra is now offering a new product. "We are launching Aura, Subterra Renewables' Energy-as-a-Service solution that offers developers a complete geothermal exchange system at no upfront capital cost."

"With Aura, we have set out to secure tomorrow, future-proofing buildings to meet the increasingly stringent building codes governments are enacting across North America. Aura will also secure residents' tomorrow, providing the security of fixed heating and cooling costs for decades to come. This is the next generation of Sustainable Intelligence," he says. >>





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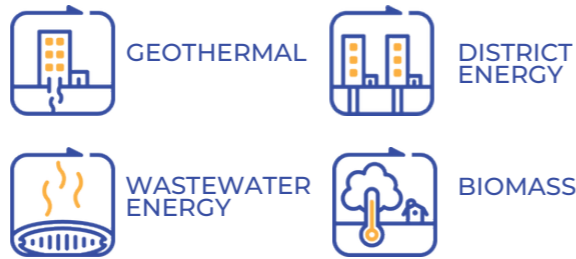
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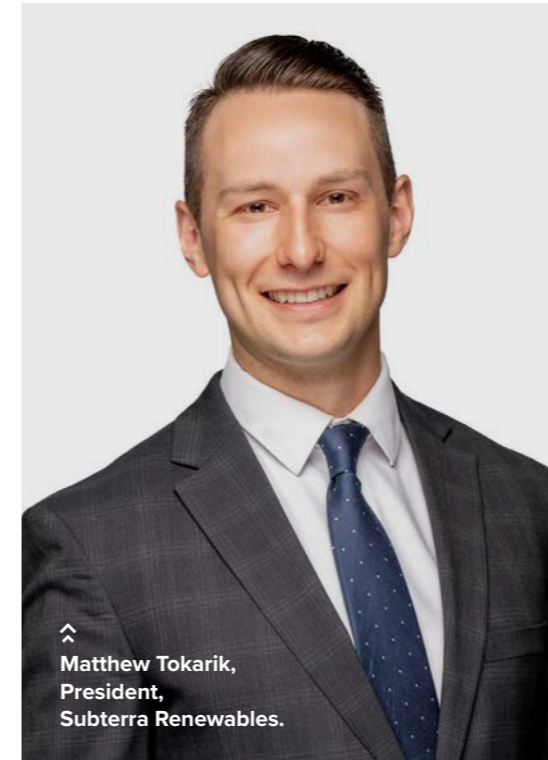
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SUBTERRA RENEWABLES



Matthew Tokarik,
President,
Subterra Renewables.

The environmental benefits have been well demonstrated in the numbers – 80% greater efficiency and 90% reduction in GHG emissions. With its geothermal exchange systems, Subterra has enhanced approximately 2.5 million square feet of floor area, equalling roughly 3,200 units, and 3,000 tonnes of greenhouse gases.

Subterra's EaaS model is available in different configurations to give clients the flexibility to choose the solution best optimized for their project.

"We offer Aura for greenfield projects, retrofit projects, and existing projects through acquisition. We also offer joint ownership as an option," says Matthew Tokarik.

The company's flexibility and ability to successfully offer its solutions come from having achieved full vertical integration. Subterra is the first and only player to offer a system like Aura, backed by North America's largest, most experienced drilling fleets and geothermal exchange experts.

"Having our own drilling capability is something we are very proud of. That capability allows us to control the schedule, control the quality and ultimately get this product spread across the continent," he reflects, pointing out that Subterra's drilling subsidiaries have successfully completed over 500 projects in the multi-residential, single-family, and commercial sectors across North America. >>



Rathco ENG is a market leader in finding ways to decarbonize heating and cooling systems in new and existing buildings. We work across the spectrum of low-carbon thermal technologies and for stakeholder groups with unique and varied requirements. We start with the goals of our clients first and work to implement financially sound energy solutions from there.

We have a strong focus on technical excellence, accurate early-stage cost models, and innovation enabled by our unique multidisciplinary team. Rathco has achieved "firsts" for numerous clients as they embark on their journey to reduce and eliminate their financial exposure to fossil fuels.

We will work with you and your team from the earliest planning stages of projects, through to final commissioning and beyond to deliver sustainable energy solutions for your projects. Ask us about your project today, as now is the time to start your journey to energy modernization. Realize the benefits of a more predictable, more secure, and lower carbon source of energy to heat and cool your built environment.

We encourage everyone to reach out and book a free Renewables 101 Webinar with us. This webinar will provide your organization with a foundational understanding as to the range of economically viable technologies that are competing with and beating natural gas over project lifecycles. Join our list of satisfied customers like our friends and colleagues at Subterra have done.

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IN LINE WITH MARKET DEVELOPMENTS

Matthew Tokarik affirms that the company is offering exactly what the market now increasingly demands. “We are finding that given the choice, tenants are increasingly demanding green buildings and our geo-exchange product is something that is often influencing their buying decision.”

However, there are other factors pushing for more environmentally friendly buildings. “Obviously, developers are influenced by what the buyers want but they are encouraged by other incentives as well, such as IRA tax incentives in the US, specifying 30% of the cost basis for any property or energy-efficiency improvement, up to an annual per-taxpayer limit of \$1,200,” he explains.

Canada is also experiencing carbon-tax increases, he further points out. “The federal carbon tax is increasing to \$170/tonne by 2030 from the current \$65/tonne, effectively doubling the cost of natural gas and therefore associated combustion-based systems. So our product is really a future-proofing method for builders and tenants, such that they’re going to be hedging their cost for the utility in the future.”

Last but not least, the ‘Net Zero Buildings’ trend is also accelerating, with a sustained drive within the building industry, as well as from external stakeholders, such as consumers and investors, to tackle climate change. That drive is now more pressing than ever before.

“With heating and cooling energy reduction from 75% to 80%, and greenhouse gas emissions reduction of up to 90%, the Aura system provides some really impactful metrics. Given market developments, we can expect the company to grow significantly.”



LEADING THE TRANSITION

Prestigious projects the company has been involved in include the Universal City development in Pickering, Ontario, which will have almost 1 million square feet of indoor space served by the Aura geothermal system. “The developer, Chestnut Hill, is a leader in forward-thinking development and has used the Aura system across their portfolio since 2018,” says Matthews Tokarik.

“We have completed two systems for them. Next year, they are going to start Universal City 7, so in total there will be about

four to five buildings within this development with our geothermal systems installed, and they are going to roll our solution across their entire portfolio.”

He affirms that Subterra’s trajectory is to continue to grow through expanding its drilling fleet, which will be used as a spearhead for entering new markets throughout North America.

“Developers don’t necessarily want somebody who’s just going to finance the system, they want to have a partner who can deliver. We intend to continue to

expand into new North American geographic markets through the acquisition of additional drilling service providers.”

In conclusion, he affirms that Subterra is set to lead the transition to geothermal exchange across North America to shape the future of how we live in and experience our world.

“Bringing the benefits of Aura to residents, developers and communities across Canada and the United States, Subterra wants to ensure that everyone can enjoy the purity, versatility and sense of autonomous wellbeing.”



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