



## November 2010 Newsletter

### Industry News

Features	2
Connecting with the DE Industry	6
Technology and Policy Updates	8
Funding Opportunities	10
DE Talk of the Town	11

### Members' News

New Members	12
Member Opportunities	13

**Canada's Alliance for Decentralized Energy**

## Feature Member

Raum Energy - Canadian micro wind technology



WADECanada welcomes **RaumEnergy** to its membership! Headquartered in Saskatoon, Saskatchewan, Raum develops and manufactures complete wind energy systems; 1.5kW and 3.5kW wind turbines, towers and grid-tie inverters/battery chargers.

Raum's team of engineers have established an excellent reputation for making affordable, high quality products available to consumers. In 2009, Raum Energy received the National Research Council's Western Canadian Award for new technology from the Canadian Manufacturers and Exporters (CME) and NRC-IRAP. Along with NRC-IRAP, CME boasted Raum Energy to be "leading edge innovation in the area of small wind technology, a company that displays the unique and innovative capacity of Saskatchewan enterprises". After launching its 3.5 kW system in 2009, Raum experienced 300% sales growth in 2010, and expects the strong growth to continue within the Canadian, U.S. and European markets. Government grants for project costs available to customers in Saskatchewan and the U.S. of 35% and 30% respectively, have supported the majority of Raum Energy's sales.



Raum Energy sought to collaborate with the Wind Energy Institute of Canada (WEICan) for 3rd party testing and validation in Raum's 3.5kW horizontal axis wind turbine for power performance, power quality, durability, safety and acoustics. Testing is to begin in the coming months and continue throughout 2011. WEICan's testing of Raum's 1.5kW contributed to Raum's ongoing R&D.



A group of engineers led by Raum's founder, Dr. Darryl Jesse, spent several years in research and developed what would become a line of small wind turbines and inverters, which first made their way to the market in 2007. Raum is currently developing several new products including a larger wind turbine and other smart energy/smart grid compatible products.

An excellent video about Raum and the market for its technology can be found by [visiting Raum Energy's website](#).

## Feature Project

### Jigsaw Homes – High Performance Home with Integrated Energy Generation



**Jigsaw Homes**, a high-end Calgary homebuilder has undertaken an aggressive program to reduce energy use and improve the performance of all its homes. The first pilot project is an urban infill home in an inner city neighborhood in Calgary. The goal for Jigsaw is to be building these net-zero ready homes at no additional cost.

#### A Different Approach

In order to meet the challenge of building a high-performance home at no additional cost, Jigsaw took a holistic approach to designing the home and its various systems. This included having the energy modeling process as an integral component of the design process. “It was in this way that we knew the implications from an efficiency standpoint of the design decisions we were making” says Cory Krygier, President of Jigsaw Homes. “We also brought many of the key trades into the process at a very early stage in order to engage them in the goals and solicit their expertise before decisions were made.

What Jigsaw found was that as certain elements of the home were reconfigured; other systems were affected. For example when Jigsaw determined that they were going to utilize a wall assembly with a high R-value, the need for a furnace to produce heat was dramatically reduced. The BTU heat loss was lowered so much, in fact, that the need for furnace was eliminated. The sole heat source for this home is water based and the water is pre-heated by a solar thermal system further reducing the overall cost for heating the home.



This re-allocation of the resources used to construct the home has enabled Jigsaw to keep a control on many of the costs associated with improving the home’s performance. Jigsaw is working hard to continue tunneling through the cost barrier of building a high performance home. “We believe that at some point the increased costs of adding new technologies and ways of building the home will hit a point where the costs of construction will start to come down due to the elimination of some of the more expensive systems in the home,” says Krygier.

Other ways Jigsaw is reducing the costs of the home include:

1. Integrating the design of all its energy efficiency and water conservation measures so that each step saves energy, materials, and equipment costs.
2. Using the home as a vehicle for innovation. One of the partners in the Jigsaw Blue concept, which is the brand name being used for these high-performance homes, is an industrial designer. He brings a different perspective the procurement and production processes of building these homes.

3. Acquiring technologies, products and expertise at the source, thus by-passing various levels of mark-up and saving on costs.

“Jigsaw set an EnerGuide target of 86 before incorporating any renewable energy systems in the home, adding renewable energy to the home, will take the High Performance Home to near-zero energy use”, says Krygier, who is also a director on the board of the Net Zero Energy Homes coalition of which Jigsaw Homes is also a member.

## The Building Envelope

Jigsaw’s holistic approach to design and construction of the home balances value and performance, by paying equal attention to: comfort; health; durability while focusing on the performance triangle that includes balancing design with efficiency and cost.

Numerous features of the pilot project make this home energy efficient conserve water use and make it a healthier environment for the occupants. The highly efficient walls make the furnaces obsolete, and in its place, the home is heated or cooled by a small fan coil unit. This is coupled with an HRV (Heat Recovery Ventilation unit), which recovers up to 60% of the heat in the indoor air before exhausting it and also provides for several complete exchanges of the indoor air each hour helping to make the indoor environment more comfortable.



Jigsaw used several advanced framing techniques in the construction of the home to improve the envelope performance and reduce the amount of wood used in its construction. This includes the use of two-stud corners (see adjacent photo) and spacing the studs at 24 inches on centre rather than the more conventional 16 inches on centre. They estimate this reduced the lumber for framing by up to 15%. A super-insulated 10” frost wall was used in the basement with an R-value approaching R40. (R or SI values, are a way of labeling the effectiveness of insulating materials, the higher the R value or RSI value, the more resistance the material has to the movement of heat). This is a relatively inexpensive way to improve the envelope performance without adding to overall costs. In addition to the super-insulated walls Jigsaw installed 4 inches of rigid foam insulation under the slab to prevent the thermal bridging that generally occurs between a concrete basement slab and the ground below. In addition this insulation was placed over top of the footings to ensure the thermal bridge was broken right to the edges of the slab.

The home boasts several features designed to reduce water usage some of which include dual flush toilets, low-flow faucets and showerheads and a water circulation pump. The water circulation pump is a low energy pump that circulates hot water through the water lines on a timer ensuring that hot water is delivered to where it is needed without the need to run the water for more than a few seconds. Some estimates, according to Jigsaw, have the water wasted (while waiting for hot water) at between 25,000 and 30,000 litres per year for a family of 4. By incorporating this simple pump the savings on the water is significant.

## Adding Renewables to the Mix

The home also has a solar thermal water system on the roof, which pre-heats the water that is then run through a 98% efficient condensing tankless water heater. In the middle a cold Calgary winter on a sunny day it is possible for water in the preheat tank to reach temperatures of 60 degrees Celsius. The preheat tank is located in the mechanical room and is always at room temperature at the least further reducing the heating load on the tankless water heater. Jigsaw has also pre-wired the home for future photo-voltaic panels, although the current incentives or rebates in the Alberta market make the installation of these systems too expensive for the time being. Currently the only real government incentive for high-performance homes is up to \$10,000 in rebates for reaching an Energuide rating of 86. By being solar PV ready, Jigsaw has built-in the flexibility for the house to incorporate this system when they are more cost effective.

## Changing Consumer Behavior, One Home at a Time

For the near net-zero home to be near net-zero, the occupant must interact with the home's energy management system. "Jigsaw's High Performance Home monitors up to 10 circuits, providing real time energy use data to the occupant, the moment they turn on the television for example, this system will let the homeowner know how their home is working," said Krygier. "Education is a big component in our holistic approach, in that we teach the home owner how to live in the home so that they better understand how their actions impact the homes overall performance."

The first pilot project has been under construction for 6 months and completion is anticipated in early March. Jigsaw believes this time period will be reduced as these homes become better understood and the trades get more accustomed to building them. The project was in the design phase for about 4 months. While Jigsaw did not encounter any resistance to the project from the city planning department they have had some resistance from the building inspectors on the site. "It will be more and more important for the building inspectors and municipal authorities to learn and stay informed about the various components of a high performance home in order to get these homes built."

Jigsaw's long-term vision for these high performance homes is to see thousands of units like these being built across the country. Jigsaw is planning to be an integral part of this process by leveraging their expertise and product to facilitate these homes being constructed in other cities. "If these homes work in Calgary, they will work in most markets across Canada and in many other cold climate locales in the United States as well," says Krygier. "We want to continue to be at the forefront for the development of these homes helping to create improved market demand for the high-performance home."

For more information, [please visit Jigsaw Homes.](#)



## Lakeland College Holds Renewable Energy Research Workshop, October 19-20, 2010

On October 19th and 20th, WADE Canada's President, Anouk Kendall, participated in the applied research working group at [Lakeland College's](#) Vermilion Campus.

This session brought several industry partners and supporters together to review and clarify roles, goals and objectives guiding Lakeland College's research efforts in renewable energy. Lakeland's applied research in renewable energy is partly funded by the newly awarded 5-year Natural Sciences and Engineering Research Council's (NSERC) College and Community Innovation (CCI) grant.

"WADE Canada values its working relationship with Lakeland College and collaboration between the two organisations continues to grow," said Anouk. "The College is supported by an impressive team of highly skilled and capable instructors who will train and educate a new generation of clean, decentralized energy professionals in Alberta and beyond."

The Renewable Energy courses and training facilities at Lakeland's Vermilion Campus include a range of cutting edge technology advancements. The applied research supports WADE Canada's Innovation to Commercialization efforts as well as our Train to Employment initiatives.

## The Canadian District Energy Association and WADE Canada probe DE stakeholders on opportunities and barriers

On October 20, 2010, the Canadian District Energy Association (CDEA) with support from WADE Canada and the Canadian Urban Institute, invited a cross section of stakeholders interested or involved in District Energy (DE) to provide input on the barriers and opportunities impacting the development of DE in Alberta communities. Representation from all industry perspectives including municipal and provincial governments, engineering consultants, technology developers, land developers and technology service providers provided the common consensus that there is a growing opportunity for DE due to a market desire for cleaner energy, price volatility in energy markets, micro generation legislation, concerns with energy transmission congestion and inefficiency.

The discussion was dynamic and while it was acknowledged that there remain challenges from a regulatory and business model perspective, one of the largest obstacles is the lack of awareness and understanding of DE. The true cost of energy was considered one of the key challenges for DE as carbon emission and transmission are still not adequately addressed in the business models.

The group agreed that while there is little appetite for regulatory changes in Alberta, there were other strategies that can be employed to advance the industry including: leadership in the form of project specific development as demonstration; opportunities to leverage capital subsidies and incentives; and, grow technology and knowledge to help reduce project costs.

The strategies and tactics proposed by the group will contribute to work on integrated communities being done by NRCan.

WADE Canada, CDEA and CUI, would like to thank Edmonton Economic Development for hosting 6 the event.

## WADE Canada Updates its Decentralized Energy Industry Backgrounder

Please read the full report [available on our homepage](#).

## Congratulations to Canadian Geoexchange Coalition for an Outstanding Annual Event!

WADE Canada congratulates the [Canadian Geoexchange Coalition](#) for hosting an outstanding 4th National Geoexchange Technical & Policy Forum in Montreal November 15-16. WADE Canada President, Anouk Kendall, was among the 200 participants. Attendees included a balanced mix of installers, researchers, utilities, other industry professionals and government representatives.

The session themes included policies and regulations, research and development, commercial design, technical advancements, market growth and innovative financing strategies. Frank and open discussions about the challenges and opportunities that face the geoexchange industry in Canada allowed the audience to engage in productive discussions that will support the growth of the market. “CGC has put tremendous efforts into transforming the geoexchange market. Their comprehensive training program has supported the installation of 13,050 CGC certified residential geoexchange systems.” says Anouk. “This is an excellent return on their investment.”



At the Forum dinner on the 15th, the National Prize for Leadership was awarded to an individual who has demonstrated ongoing leadership in the geoexchange industry. This year the award went to Dennis Terhove, Energy & Environment Coordinator for Building Regulations at the City of Calgary.

## WADE Canada signs Memorandum of Understanding with the Canadian Geoexchange Coalition

WADE Canada and [Canadian GeoExchange Coalition \(CGC\)](#) have collaborated since 2005. In an effort to strengthen the friendship and cooperation between the two organizations, a new memorandum of understanding has been signed. The MOU brings increased cooperation in the field of geothermal heat pump technology as it relates to Decentralized Energy applications and will deliver mutual benefits to both associations.

Past support between the two associations has included shared office space in 2007/08, member discounts to each other’s events and regular dialogue that has worked to push through the industry barriers and further support our respective membership.

Look for breaking news on these developments in WADE Canada’s future monthly newsletters.

## Nova Scotia Renewable Energy News Update

November 18, 2010

A historic hydro-deal made by the Nova Scotian government, Nalcor Energy of Newfoundland and Labrador and Nova Scotia Power parent company Emera Inc will support the province's goal to create jobs and grow its economy by achieving 25% renewable energy by 2015 and 40% by 2020.

"This is an historic day for Nova Scotia, and all of Atlantic Canada," said Premier Dexter. "Through this partnership, Nova Scotia is taking a major step forward as an international leader in renewable energy. [Learn more...](#)

## Clean Technology Trade Mission Puts Nova Scotia Companies in the Spotlight

November 29, 2010

Several clean technology and climate change companies will participate in this week's 2010 United Nations Climate Change Conference in Cancun, Mexico to bring home potential clients, partners and investors. [Learn more...](#)

## Toronto's Zoo Poo to Energy

November 25, 2010

Toronto Zoo's board of management approved a plan to build, own and operate a modular 500KW Biogas facility at the zoo with a consortium of five expert companies who have built five biogas facilities in Ontario: ReGenerate, HH Angus, Koenig and Consultants, Kronos Project Management Group and Riepma Consultants.

The proposed facility will be 500KW but will be 'modular' or scalable to grow the renewable energy output as needed. The plant could be operating by mid 2012.

Other forms of decentralized energy are already in use at the Zoo, including: green roof technology, solar rooftop panels, geothermal heating and an Ice Bear distributed energy storage system. [Learn more...](#)

## WADE Canada Responds to Ontario's Long Term Energy Plan, November 25, 2010

### Clean Energy Industry gives Vote of Confidence to the Ontario Long Term Energy Plan

Toronto, ON, November 25, 2010 – Members of the clean and Decentralized Energy (DE) industry applauded the release of the Ontario Long Term Energy Plan this week. “This plan is another huge step forward to a cleaner and more efficient power system,” said Jan Buijk, Chair of WADE Canada and President of EPS Ltd. “This plan provides the market certainty and gives confidence to WADE Canada’s members in the decentralized energy industry to continue to pursue clean energy projects”.

Buijk, an expert in gas engine technology for renewable energy projects, is impressed by the Government of Ontario’s acknowledgement that combined heat and power and renewable energy generation are important parts of Ontario’s power future. Renewable generation represents over 30% of the \$87 billion commitment over the next 20 years, not including hydroelectric generation. This 30% investment into renewables will contribute to nearly 60% of the new generation, making it a very cost effective strategy. “When this new power is generated close to the end user, it is even more efficient and it takes the pressure off the transmission system.” adds Buijk. Decentralized energy, including combined heat and power, is an essential component of the plan that is necessary to optimize clean and renewable energy generation. “WADE Canada members are excited at the prospect of finally having a combined heat and power standard offer program available”. DE is also an important component for providing energy independence to rural and remote areas.

The timing for this announcement couldn’t be better. The economic development and the jobs created as a result of this plan are not only important for Ontario but the benefits will extend to the rest of the country. By creating a critical mass in ‘new-to-Canada’ technology, costs of clean energy will become more affordable for all Canadians. WADE Canada members are anticipating the ‘people investment’ necessary to modernize our labour force, will be a further boost to the industry. Development of new skills will be required to support investments in these Ontario projects.

## Mission to the World Future Energy Summit in Abu Dhabi



NRC-IRAP and WADE Canada invite you to participate in a clean energy technology mission to the World Future Energy Summit in Abu Dhabi, January 17 to 20, 2011. There is limited funding support available for eligible small and medium sized companies to join other Canadian businesses at this event. Please see our [invitation](#) for more information.

## New Funding for Co-Op Research in Canada

On Monday, November 29th, Rural and Cooperative Secretariat (RCS) officially launched the very first call for proposals under the Research and Knowledge Development (RKD) component of the Cooperative Development Initiative (CDI) program. RKD is the third and smallest component of CDI, with a funding envelope of \$800 000 (running until March 31, 2013). It will be managed by RCS.

The objective of RKD is to encourage research and dissemination projects that will advance the understanding of co-operatives' contributions to addressing challenges in the following three program priority areas:

- Local community economic development
- Changing community demographics
- Low-carbon communities

Eligible recipients are co-operatives, not-for-profit organizations, universities and colleges, as well as individual researchers and co-operative developers who are working in collaboration with an established co-op sector or research entity.

The deadline for project submissions is December 20, 2010.

Official call for proposals plus the application form and program guide can be found at [www.agr.gc.ca](http://www.agr.gc.ca). The project evaluation form that will be used by RCS staff to assess applications is also available for reference purposes.

For more information, please contact:

Jean-Nicolas Roy  
Program Officer  
Rural and Co-operatives Secretariat  
Phone: (613) 773-2898  
E-mail: [Jean-Nicolas.Roy@agr.gc.ca](mailto:Jean-Nicolas.Roy@agr.gc.ca)

## QUEST Releases Major National Research Study on Clean Energy

QUEST (Quality Urban Energy Systems of Tomorrow) released a major national study on the capacity for integrated urban energy solutions (ICES) policies to reduce urban greenhouse gas emissions. The study analyzes how the economics and environment of urban communities can be improved in applying various clean energies (from biogas to wind). Interesting facts are presented for the biogas and waste to energy industry in the report, we encourage you to [read the report](#).

## Ontario Power Authority – District Energy Research Report

Produced by Compass Resource Management for OPA, the report analyzes the technical and economic elements of district energy (DE), the market context for DE and institutional issues, which may influence future development and operation of DE systems.

In terms of biogas, the report discusses: the life cycle cost of heat (\$/MW.h); district heating technologies assuming a range of greenhouse gas values and electricity emission factors; current institutional context for biogas CHP projects; lessons for Ontario and barriers of natural gas CHP; costs attributed to biogas and more. [Read full report...](#)

## WADE Canada Member, European Power Systems (EPS), is named distributor for world leading microturbine systems manufacturer

Capstone Turbine Corporation, world leading manufacturer of microturbine systems, has named EPS its distributor in Canada.

EPS will sell and service Capstone Microturbines® that produce 30kW to 1MW of clean and reliable power to a variety of Canadian markets, including hospitality, residential, education, healthcare, offices, retail, recreation, industrial, government, landfill, wastewater treatment plant, agriculture/biogas, telecom and data centers.

The two companies see this as a tremendous opportunity for projects where ultra-low emissions, combined with ease of connection due to the inverter based power generation technology, will make Capstone 30kW – 1MW microturbines the power generation technology of choice. [Learn more...](#)

## New WADE Canada Members

### Town of Viking



A close-knit community of over 1,000 people, the **Town of Viking** received funding from the Government of Alberta's Rural Community Adaptation Program for its Rural Sustainability Demonstration Town Project ("the Project"). The Project will serve to support community capacity building activities that relate to sustainability/ demonstration projects over the next 2 years. As they begin to work on the project's various parts, the Town of Viking has measured the energy consumption of its facilities, conducted feasibility studies for possible bio-energy and cogeneration projects, and has had community tours to visit various bio-energy sites, wind farms and net-zero homes. As part of the Project, Viking will begin "re-skilling" workshops for the community next Spring. As WADE Canada continues to work with the Town of Viking, we will be updating you on the Town's new direction. [For more information...](#)

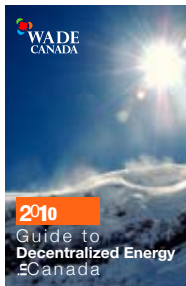
### Raum Energy Inc.



Learn about **Raum Energy** through this month's "Feature Member"

## We Want You in the Guide to Decentralized Energy in Canada

If you have a decentralized energy technology, service, project, or program you want to advertise from coast to coast and internationally, the Guide to Decentralized Energy in Canada can do that for you. **Register** and send us ([info@wadecanada.ca](mailto:info@wadecanada.ca)) your logo, pictures and short descriptive text to put your business within one of these categories in the guide:



- Fuel Production
- Generation Technologies
- Transmission and Distribution
- Controls and Communications
- Financial
- Government Funding Programs and Showcase Projects
- Professional Services
- Associations

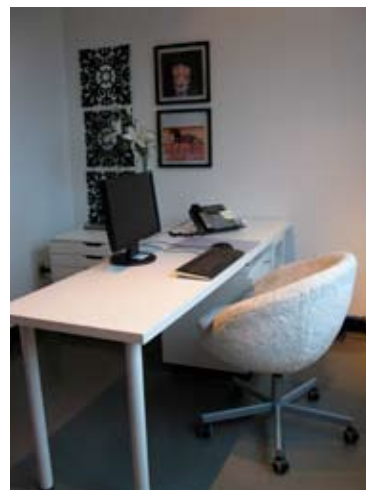
The purpose of the Guide is to raise awareness about clean energy technologies and programs across Canada for networking, educational and business opportunities. We will carry on all 2010 participants into WADE Canada's 2011 Guide to Decentralized Energy in Canada.

## Montreal Office Sublet Opportunity

Is your business looking for temporary or permanent office space in Montreal?

WADE Canada's Montreal Office has space to share with an individual or small business that is seeking fully furnished and equipped office space in the beautiful and ideally situated Balfour Building at 3575 Blvd St. Laurent in Montreal.

If you would like more information please contact Anouk Kendall at 514.409.0433 or email us at [info@wadecanada.ca](mailto:info@wadecanada.ca)



# Become a WADE Canada Member!

WADE Canada is a registered, national, non-profit industry association which supports growth and development of the DE industry. Our vision is a sustainable energy future where affordable, efficient, reliable and clean decentralized energy technologies are deployed in community driven markets and enabled by progressive policies and legislation.

WADE Canada's 2010-2015 business plan is already delivering benefits in terms of:

1. Further growth of its national network through strategic alliances and promotion,
2. Increased prosperity for DE innovators especially small and medium-sized enterprises,
3. Policy development to support market growth,
4. DE project implementation, and
5. Increased access to training and education programs to support industry growth

Membership with WADE Canada helps you and your business by providing you with:

- Project participation opportunities
- Facilitation of private and public financing and project risk assessment
- Project operational support through capacity development, project formulation, and launch
- Project partner integration
- Publicity for your organization
- Input into compiled industry feedback for stakeholder consultations across Canada and internationally
- Access to WADE's international network of affiliates in China, Peru, USA, India, UK and Egypt.
- Discounts for annual listing in our annual Canadian DE Business Directory. The inaugural edition of this Directory was published in September 2008.
- Discounts on the national DE Conference and all other WADE Canada events.
- Discounted rates at partner events

JOIN WADE CANADA

To learn more about us visit: [www.wadecanada.ca](http://www.wadecanada.ca)

On-line Membership Application: <https://securegs.com/wade/>

## We would like to thank the continuing support of our members

### Partner Affiliates

Agrienergy Producers' Association of Ontario (APAO), Ontario  
 Alberta Innovates Technology Futures, Alberta  
 Association of Power Producers of Ontario, Ontario  
 Calgary Technologies Inc. (CTI), Alberta  
 Canadian American Business Council, Alberta  
 Canadian GeoExchange Coalition, Quebec  
 Canadian Geothermal Energy Association (CanGEA), Alberta  
 Petroleum Technology Association of Canada, Alberta  
 Quality Urban Energy Systems of Tomorrow (QUEST), Ontario

### Corporate Affiliates

<p>Alterna Energy, BC          Benoit &amp; Cote, QC          Bob Hawkesworth, Canada          Borden Ladner Gervais LLP, ON          Canadian Gas Association, ON          City of Toronto, ON          DDACE Power Systems, ON          Ecotility, AB          EMF Technical Services, AB          Enmax Power, AB          European Power Systems Ltd , ON          GE Jenbacher, AB          Geoff Hill, Canada</p>	<p>GeomatKa Information Systems, AB          Jigsaw Homes Inc, Canada          Lakeland College, Canada          MiVenture, AB          Municipality of Chatham-Kent, ON          New Energy Corporation, AB          Northwest Territories Power Corporation, NWT          Overview Business Consulting, AB          Owen Schneider, ON          Portfire Associates, AB          Raum Energy, SK          Refuel, Nova Scotia          Renewable Energy Solutions Inc, AB</p>	<p>Sedmek Inc, AB          Sunmotors International Ltd, AB          Sustainable Energy Technologies, AB          SWAY Energy Inc, AB          Total Energy Solutions Inc, AB          Town of Viking, AB          Turquoise Technology Solutions Inc., QC</p>
---	---	---