

## INTERVENER APPLICATION FORM

Application re Hearing:			
Name of Prospective Intervener (Organization Name or Individual):			
<b>Prospective Intervener Contact Information</b>			
Organization or Individual Address:			
Organization Contact Person(s) (if applicable):			
Contact Information:	Business:		Other Phone:
	Fax Number:		Email:
<b>Representative Contact Information:</b>			
Counsel or Representative Name(s):			
Organization (if different from above) :			
Address (if different from above):			
Contact Information (if different from above):	Business:		Other Phone:
	Fax Number:		Email:
Counsel Seniority:			
Years of Experience	_____ Years	Tariff Rate	\$ _____
Also representing (if applicable):			

**Additional Information**

(For organizations only) Please describe the mandate of your organization and provide a description of the membership, including the number of members. Please also confirm whether the organization's intervention in this proceeding is supported by a resolution of the governing body, if any. Please enclose the resolution, if any, with your Application, along with supporting documentation of your mandate and membership

Please state your reasons for intervening in this proceeding:

Please state how you are directly affected by the Board's decision in this matter:

Please explain whether and how you represent a substantial number of ratepayers that are otherwise not represented on issues that are within the scope of this proceeding:

Please describe your experience, information, or expertise relevant to this matter that would contribute to the Board's decision making, including any other prior interventions in regulatory matters before this Board or other decision-makers:

Please list the key issues you intend to address in the proceeding. Please be specific.		
Do you intend to participate fully and actively, including attendance at hearings, submission of evidence, and testing of evidence and cross examination of witnesses? If yes, please describe your intended participation.		
Do you intend to request an award of costs for your participation? Please explain how you meet the criteria for an award of costs.		
Do you intend to retain experts or consultants? If yes, please attach copies of the <i>curriculum vitae</i> for any expert and/or consultant, as well as the following:		
<b>Expert Consultant #1:</b>		
Name:	Experience	Evidence to be provided on issues in scope:
	_____Years	
Telephone #:	Tariff Rate:	
	\$_____	
Address and Email:	Firm or Organization:	Brief explanation of experience relevant to evidence to be provided:

<b>Expert Consultant #2:</b>		
Name:	Experience:	Evidence to be provided on issues in scope:
	_____Years	
Telephone #:	Tariff Rate:	
	\$_____	
Address and Email:	Firm or organization:	Brief explanation of experience relevant to evidence to be provided:
<b>Expert Consultant #3:</b>		
Name:	Years of Experience:	Evidence to be provided on issues in scope:
	_____Years	
Telephone #:	Tariff Rate:	
	\$_____	
Address and Email:	Firm or organization:	Brief explanation of experience relevant to evidence to be provided:

Do you intend to provide evidence from witnesses other than experts and/or consultants? If yes, please provide:	
<b>Witness #1:</b>	
Name:	Evidence to be provided on issues in scope:
Email:	Brief explanation of relevant experience and/or knowledge to issues in scope:
Address and Phone number:	
Do you intent to seek approval for any other form of participation or provision of evidence, including for which you intend to seek an award of costs? If yes, please provide details and an explanation of the relation to issues in scope in the proceeding.	

## **Additional Information - Attachment**

**(For organizations only) Please describe the mandate of your organization and provide a description of the membership, including the number of members. Please also confirm whether the organization's intervention in this proceeding is supported by a resolution of the governing body, if any. Please enclose the resolution, if any, with your Application, along with supporting documentation of your mandate and membership.**

The Industrial Gas Users (IGU) collaborate on matters of common concern related to rates charged by Centra Gas Manitoba for high volume natural gas delivery and use in Manitoba. The association shares key objectives for ensuring that natural gas rates reflect costs for providing service that are fair, reasonable, stable, and predictable.

IGU is an informal association of industrial companies who are high volume natural gas users in Manitoba. At present, IGU membership includes:

- Gerdau Long Steel North America – Manitoba Mill;
- Koch Fertilizer Canada, ULC;
- Maple Leaf Foods;
- Simplot Canada (II) Ltd. (Simplot); and
- Roquette Canada Ltd.

IGU continues discussions with other potential industrial members sharing common interests and priorities for cost-based natural gas rates.

Beyond members proper, IGU is undertaking active engagement with other industrial stakeholders and associations on natural gas matters, such as the Canadian Manufacturers and Exporters. As a result, IGU's intervention will benefit industrial customers beyond the core membership. IGU is an informal association and does not pass resolutions.

### **Please state your reasons for intervening in this proceeding:**

IGU's intervention will seek to ensure that Centra Gas' proposed cost of service methodology supports natural gas rates, which are cost-based and reflective of the cost to serve each customer class. IGU companies are long-term economic contributors to Manitoba, and as such require stable and predictable rates over the long-term that are based on fair and reasonable cost allocation methods.

IGU anticipates that its review will extend to key elements in Centra Gas Manitoba's 2021 Cost-of-Service Study Application, including the accompanying independent review of cost allocation methodologies by Atrium Economics (referencing cost-of-service study objectives and process), identification of cost components, development of functionalization, classification and allocation factors, concerns raised in prior GRA's, as well as recommendations proposed by Centra Gas for modifications to the methodologies employed for cost allocations, the accompanying illustrative results and proposed interim measures for addressing impacts arising from the proposed methodology if approved.

IGU also proposes to review the cost allocation of balancing fees applicable to T-Service customers to the extent it is included in scope (including their cost allocation). The IGU will focus its intervention on the allocation of costs, impacts to rates and riders charged to industrial gas users, predominantly related to High Volume Sales Service, T-Service and Special Contract rate classes.

**Please state how you are directly affected by the Board’s decision in this matter:**

This cost-of-service proceeding will impact the design of future rates by establishing methodological considerations that impact allocations of cost on a longer-term basis. IGU members, as industrial customers, are directly impacted by changes to rates for natural gas service. The proposed changes to cost allocation (particularly for demand-related costs and/or costs attributable to operations and infrastructure that provide no benefit to IGU members) will alter revenue requirements applicable to rate classes represented by the members. IGU members are often not able to flow service costs through to market, as their revenue streams are set by market, economic and/or contract conditions.

Additionally, the Board’s decision may establish how future rate designs unfold in Manitoba. Industrials operate under long-lead planning cycles for operational and investment decisions, and therefore require predictability in rate setting.

**Please explain whether and how you represent a substantial number of ratepayers that are otherwise not represented on issues that are within the scope of this proceeding:**

IGU’s core membership represents a substantial portion of high-volume industrial customer natural gas service in Manitoba using both Sales Service and T-Service. IGU is in discussions with other impacted industrial gas users to potentially join in this intervention. IGU will work more broadly to reach out to other industrial customers and associations who are not formal members, to ensure they have accurate information about how the proposed changes to cost-of-service methodology will affect them. IGU is intent on collaborating with other industrial gas users with similar interests.

**Please describe your experience, information, or expertise relevant to this matter that would contribute to the Board’s decision making, including any other prior interventions in regulatory matters before this Board or other decision-makers:**

Members of the IGU group have considerable experience intervening in Manitoba rate proceedings and in regulatory proceedings in other Canadian and US jurisdictions. This experience extends to Manitoba Hydro electric rate applications and prior Centra Gas General Rate Applications and proceedings such as the original acquisition of Centra Gas Manitoba by Manitoba Hydro.

**Please list the key issues you intend to address in the proceeding. Please be specific:**

While its review of the application is still in its preliminary stages, IGU intends to focus its intervention on key factors that influence cost allocation and the resulting design of natural gas rates for high-volume natural gas consumers, including the allocation method for demand-

related costs applicable to high-volume customers (including T-Service). IGU also intends to address Centra's presentation of illustrative results arising from the adoption of its recommendations influenced by allocation methods proposed for allocating demand-related costs, as well as proposed interim measures for addressing impacts arising from the application's recommendations (if adopted). Specific terms of industrial rate design for T-Service customers are of particular concern, including the cost allocation of charges related to daily imbalances.

IGU anticipates being an active participant in the pre-hearing Workshop and Technical Conference during which the findings of the independent review by Atrium Economics will be presented and discussed. Participation will be a key component of IGU's preparation for the subsequent hearing.

**Do you intend to request an award of costs for your participation? Please explain how you meet the criteria for an award of costs.**

Yes, IGU intends to request an award of costs for participation per the Public Utilities Board Intervener Cost Policy, Section 3.0 – Intervenor Eligibility for a Cost Award. The eligibility criteria in Section 3.1 provide that the Board may award costs to any intervener who has:

- (a) made a significant contribution that is relevant to the proceeding and contributed to a better understanding, by all parties, of the issues before the Board;
- (b) participated in the hearing in a responsible manner and cooperated with other Interveners who have common objectives in the outcome of the proceedings in order to avoid a duplication of interventions;
- (c) represented interests beyond their sole business interest; and
- (d) a substantial interest in the outcome of the proceeding and represents the interests of a substantial number of ratepayers.

Regarding part (a), IGU members have participated in previous electricity and natural gas rate hearings and have demonstrated that their intervention is focused on matters directly impacting industrial rates, making significant contributions in rate applications. IGU intends to work with qualified and established legal and consulting professionals familiar to the PUB, whose prior experience has been recognized to be a significant contribution to the Board's deliberations.

For part (b), IGU intends to make reasonable efforts for coordinating with other intervenors on a topic-by-topic basis, where interests are aligned, to avoid duplication of effort and filing of unduly repetitive evidence and questions.

For part (c), IGU's interests are not solely related to members' business interests, but also ensure the long-term sustainability of Manitoba industry and ratepayers generally, ensuring adequate cost recovery for the service provided while balancing impacts on the Manitoba economy in both the short and long-term. IGU's interests are focused on cost-based rates, with allocation determined in a fair and appropriate manner that is representative of the costs imposed on the system by consumers. This process ensures that rates are fair and reasonable, while balancing the costs for maintaining reliable service with fair and predictable rates based



on the cost of service.

For part (d), IGU's membership includes a substantial number of high-volume industrial customers representing different industry sectors operating within Manitoba. Many of these companies are located within rural settings and are often among the largest employers in their respective communities. While core IGU members have a substantial interest in the outcome of the proceeding, efforts will be made to extend the IGU outreach to include other industrials and ensure that its intervention is broadly representative of industrial concerns. IGU continues to reach out to other industrial customers with interest in joining the group's intervention. IGU plans to provide an update on group membership at the upcoming pre-hearing conference.

As the full scope and process for this proceeding has not yet been established, IGU proposes to submit a estimated budget for consideration by the PUB (by August 9, 2021) with a more detailed budget being submitted following the pre-hearing conference and a PUB Decision on a preliminary schedule and scope for the proceeding. As part of the budget submission, IGU will confirm who it intends to retain as additional expert consultants (specific topic areas) and/or witnesses (if IGU desires to seat a panel of participating company personnel).

**PATRICK BOWMAN**  
**Principal Consultant**  
**Bowman Economic Consulting Inc.**

**161 Rue Hebert**  
**Winnipeg, Manitoba**  
**R2H 0A5 CANADA**

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**AREAS OF EXPERIENCE:**

- Utility Regulation and Rates
- Project Development and Planning
- Utility Resource Planning

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**EDUCATION:**

- MNRM (Master of Natural Resources Management), University of Manitoba, 1998
- Bachelor of Arts (Human Development and Outdoor Education), Prescott College (Arizona), 1994

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**PROFESSIONAL EXPERIENCE:**

**Bowman Economic Consulting Inc., Winnipeg, Manitoba**

*2020 – Principal Consultant*

*Conduct consulting assignments as Principal Consultant of new economic consulting firm, focused on utility regulation.*

**InterGroup Consultants Ltd., Winnipeg, Manitoba**

*1998 – 2020 – Research Analyst/Consultant/Principal/Senior Associate*

*Utility Regulation*

*Conducted research and analysis for regulatory and rate reviews of electric, gas and water utilities in eight Canadian provinces and territories and international. Prepared evidence and expert testimony for regulatory hearings. Assisted in utility capital and operations planning to assess impact on rates and long-term rate stability. Major clients included the following:*

- **For Manitoba Industrial Power Users Group (1998 – 2020):** Prepare analysis and evidence for regulatory proceedings before Manitoba Public Utilities Board representing large industrial energy users. Appear before PUB as expert in General Rate Application and revenue requirement reviews, the Needs For and Alternatives To (NFAT) resource planning hearing, depreciation, cost of service, and rate design matters. Assist in regulatory analysis of the purchase of local gas distributor (Centra Gas) by Manitoba Hydro. Assist industrial power users with respect to assessing alternative rate structures, surplus energy rates and demand side management initiatives including curtailable rates and load displacement.
- **For Northwest Territories Power Corporation (2000 - 2020):** Provide technical analysis and support regarding General Rate Applications and related Public Utilities Board filings, major capital developments and utility acquisition and valuation topics. Assist in preparation of evidence and providing overall guidance to subject specialists in such topics as depreciation and return. Appear before PUB as expert in revenue requirement, cost of service and rate design matters, and on system planning reviews (Required Firm Capacity).
- **For Industrial Customers of Newfoundland and Labrador Hydro (2001 – 2020):** Prepare analysis and evidence for Newfoundland Hydro GRA hearings before Newfoundland Board of Commissioners of Public Utilities representing large industrial energy users. Provide advice on interventions in respect of major new transmission facilities, depreciation, rate mitigation for major new capital spending. Appear before PUB as expert in cost of service and rate design

matters.

- **For Nelson Hydro (2013 - 2020):** Development and updating of a Cost of Service model and filings before the BCUC.
- **For City of Chestermere (2015 – 2020):** Analysis of rate proposals from Chestermere Utilities Inc. and review of strategic options for utility.
- **For the Office of the Utilities Consumer Advocate of Alberta (2016 – 2020):** Provide expert witness and strategic support of multiple depreciation and revenue requirement proceedings. This includes ongoing participation in depreciation working group discussions on behalf of the UCA.
- **For the Association of Major Power Consumers of British Columbia (2015 – 2020):** Provide expert advice in the current 2020-2021 Revenue Requirement Application with a focus on general service large and transmission service customers. Provide consulting support regarding transmission service customer and rate design issues in the 2015 Rate Design Application.
- **Vancouver Airport Fuel Facilities Corporation (2019 – 2020):** Review pipeline tolling application on revenue requirement and depreciation, prepare interrogatories and draft issues for evidence.
- **Jamaica Public Service (2019):** Assist in preparation of regulatory documents, Executive Summary, review of strategic issues for General Rate Application.
- **For Hualapai Tribal Utility Authority (2017 - 2018):** Provided strategic advice to the HTUA Board, and completion of a feasibility study and Cost of Service analysis for the acquisition of assets and development of a tribally-owned distribution utility, including power purchase and transmission, asset purchase (acquisition value) and replacement costs, and ongoing operation and maintenance costs. The assignment included a review of comparable jurisdiction cost and rate structures, building a financial model with input cost variables, reporting and presenting in HTUA Board meetings.
- **For Yukon Energy Corporation (1998 - 2014):** Provided analysis and support of regulatory proceedings and normal regulatory filings before the Yukon Utilities Board. Appeared before YUB as expert on revenue requirement matters, depreciation, cost of service, rate design, and resource planning. Prepared analysis of major capital projects, financing mechanisms to reduce rate impacts on ratepayers. Analysis and support regarding utility asset transfer and system rationalization among various utilities.
- **For City of Swift Current (2013 - 2014):** Utility system valuation for acquisition and disposition alternatives assessment.
- **For Municipal Customers of City of Calgary Water Utility (2012 - 2017):** Analysis of proposed new development charges and reasonableness of water and wastewater rates (City of Chestermere, City of Airdrie, Town of Cochrane, and Town of Strathmore).
- **For Yukon Development Corporation (1998 - 2012):** Prepared analysis and submission on energy matters to Government. Participated in development of options for government rate subsidy programs. Assisted with review of debt purchase, potential First Nations investment in utility projects, and corporate governance.
- **For NorthWest Company Ltd. (2004 - 2006):** Reviewed rate and rider applications by Nunavut Power Corporation (Qulliq Energy). Provided analysis and submission to rate reviews before the Utility Rates Review Council.

### *Project Development, Socio-Economic Impact Assessment and Mitigation*

*Provide support in project development, local investment opportunities or socio-economic impact mitigation programs for energy projects, including northern Manitoba, Yukon, and NWT. Support to local communities in resolution of outstanding compensation claims related to hydro projects.*

- **For Yukon Energy Corporation (2005 - 2014):** Participated in preparation of resource plans, including Yukon Energy's 20-Year Resource Plan Submission to the Yukon Utilities Board in 2005 (including providing expert testimony before the YUB), advisor on 2010 update. Project Manager for all planning phases of the Mayo B hydroelectric project (\$120 million project) including environmental assessment and licencing, preliminary project design, preparation of materials for Yukon Utilities Board hearing, joint YEC/First Nation working group on all technical matters related to project including fisheries, managing planning phase financing and budgets. Assistance in preparation of assessment documentation for Whitehorse LNG generation project.
- **For Northwest Territories Power Corporation (2010 - 2012):** Participated in planning stages of \$37 million dam replacement project; appear before Mackenzie Valley Land and Water Board (MVLWB) regarding environmental licence conditions; participate in contractor negotiations, economic assessments, and ongoing joint company/contractor project Management Committee. Provided economic and rate analysis of potential major transmission build-out to interconnect to southern jurisdictions.
- **For Northwest Territories Energy Corporation (2003 - 2005):** Provided analysis and support to joint company/local community working groups in development of business case and communication plans related to potential new major hydro and transmission projects.
- **For Kwadacha First Nation and Tsay Keh Dene (2002 - 2004):** Supported and analysed potential compensation claims related to past and ongoing impacts from major northern BC hydroelectric development. Reviewed options related to energy supply, including change in management contract for diesel facilities, potential interconnection to BC grid, or development of local hydro.
- **For Manitoba Hydro Power Major Projects Planning Department (1999 - 2002):** Initial review and analysis of socio-economic impacts of proposed new northern generation stations and associated transmission. Participation in joint working group with client and northern First Nation on project alternatives (such as location of project infrastructure).
- **For Manitoba Hydro Mitigation Department (1999 - 2002):** Provided analysis and process support to implementation of mitigation programs related to past northern generation projects, debris management program.
- **For International Joint Commission (1998):** Analysis of current floodplain management policies in the Red River basin, and assessment of the suitability of alternative floodplain management policies.
- **For Nelson River Sturgeon Co-Management Board (1998 and 2005):** An assessment of the performance of the Management Board over five years of operation and strategic planning for next five years.

### **Government of Northwest Territories, Yellowknife, Northwest Territories**

*1996 - 1998 Land Use Policy Analyst*

*Conducted research into protected area legislation in Canada and potential for application in the NWT. Primary focus was on balancing multiple use issues, particularly mining and mineral exploration, with principles and goals of protection.*



# InterGroup

CONSULTANTS

## DALE FRIESEN, P.Eng. *SENIOR CONSULTANT*

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### AREAS OF EXPERIENCE:

- Account Management and Utility Engagement
  - Economic Development and Utility Rates
  - Demand-Side Management Programming
  - Efficient Energy Utilization and Rate Optimization
  - Renewable Generation and Carbon Output
  - Energy Performance Standards Development
  - Project Development and Planning
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### EDUCATION:

- Bachelor of Science (Mechanical Engineering) – University of Manitoba (Graduated 1986)
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### PROFESSIONAL EXPERIENCE:

#### **INTERGROUP CONSULTANTS LTD., WINNIPEG, MANITOBA** *2019 – Present – Senior Consultant*

##### **Manitoba Industrial Power Users Group (MIPUG) (2019-Present):**

Facilitation of industrial stakeholder engagement with Manitoba Hydro and Efficiency Manitoba in consideration of proposed rate programs and energy efficiency programming intended for application to industrial customers, representing about 20% of Manitoba electric and natural gas consumption.

Lead facilitator for large industrial clients during engagements with the Manitoba Government, Manitoba Hydro, and Efficiency Manitoba aimed at addressing the impacts for proposed legislation applicable to the scope and authority granted to the Manitoba Public Utilities Board (PUB). Work undertaken on behalf of MIPUG clients (and industry generally) includes a review of impacts applicable to regulations for review and approval of utility rates and rate setting practice, determination of financial targets for utilities, review and approval of integrated resource plans (IRP) and major capital projects (greater than \$200 Million), along with review and recommendations applicable domestic capital and operating plans for Manitoba Hydro (electric and natural gas) and Efficiency Manitoba.

Additional services include intervention at utility rate proceedings and assessments for short and long-term rate impacts for proposed legislation and utility rate applications, along with engagement of other stakeholders (Chambers of Commerce, Industry Associations, and other ratepayer groups) to assess commonality and agreement on key matters of priority to industrial consumers.

##### **Chemtrade Logistics Inc (2020-Present):**

Undertakings related to climate change targets mandated by Government, including review of alternative uses for by-product hydrogen streams and related opportunities for generating value-added benefit streams for client operations. Facilitation for Government engagement and negotiation of rates for hydrogen-enrichment of natural gas supplies.

**For Alberta Utilities Consumer Advocate (UCA) – AUC DCG Credit Review (2020-2021):**

Provided technical expertise and support to the Utilities Consumer Advocate (UCA) for participation in an Alberta Utilities Commission (AUC) Distribution-Connected Generation (DCG) Credits proceeding examining credit payments provided through Distribution Facility Operator (DFO) tariffs in Alberta. Explored the inter-woven relationship between the DCG Credit mechanism, AESO transmission tariff (including Rider C charges and 12 Coincident Peak methodology) and Alberta Transmission Regulations to establish the nature and cause of increases in DCG Credit payments provided by distribution utilities over the past decade. Considered benefits accruing to distribution load customers from DCG relative to the costs imposed on load customers for wire costs (as mandated by transmission regulation) and DCG credit payments. Provided recommendations to the Commission for a fulsome review of the DCG Credit mechanism, including consideration for ongoing proceedings related to transmission tariff updates, tariff design, review of transmission regulation, adjusted metering practices, substation fractioning and other related matters. Presented a proposal for grandfathering of payments provided under the existing DCG Credit mechanism.

**For Alberta Utilities Consumer Advocate (UCA) – AUC Distribution Inquiry – Module One (2019-2020):**

Provided technical expertise and support to the Utilities Consumer Advocate (UCA) for participation in a Distribution Inquiry related to the timelines and impacts rising from the adoption of distributed energy resources (DER) in Alberta. Reviewed associated technical requirements for integrating emerging DER resources into the structure and operation of electric and natural gas distribution networks, along with potential implications for the safe, reliable and quality delivery of energy. Examined considerations for rate structure design and risks for cross-subsidization. Responsibilities included preparation of submission, materials and presentation of materials for technical conferences and review of submissions by participating parties.

**For Manitoba Industrial Power Users Group (MIPUG) – Efficiency Manitoba Three-Year Plan Review (2019-2020):**

Provided technical expertise and support to MIPUG for its intervention into the Manitoba Public Utilities Board (PUB) review of the inaugural Three-Year Plan for Efficiency Manitoba, a newly formed Crown Corporation responsible for delivery of efficiency programming under the Efficiency Manitoba Act and related regulations. Appeared as an expert witness in the proceeding to testify on matters related to scope, deliverability, cost-effectiveness, savings assessments, rate impacts and other items.

**MERIDIUM ENERGY, WINNIPEG, MANITOBA**

*2017 – Present (President)*

Professional Engineer, Technical Consultant and Management Advisor providing independent guidance and services related to the efficient, productive, and economic use of renewable and non-renewable energy resources within homes, businesses and communities for provincial, national and international clients.

Prior experience includes a well-recognized 30-year background in Demand-Side Management (DSM) with responsibility for planning, development, delivery and promotion of energy efficiency programming supported by customer account management, economic assessments, utility rate analysis, codes and standards development, energy efficiency regulation, integration for customer-sited renewable energy projects and distributed generation. This extensive experience anchors expertise in the technical and commercial aspects of product development and business growth for new and emerging distributed energy resources.

**Scope of work includes:**

- Guidance on electric and natural gas utility engagement, energy utilization, rate optimization, utility service provisions, commercial/technical contracts and carbon tax assessments.
- Assessment of performance considerations for energy efficient equipment and high-performance

buildings, including energy subsystems within industrial processes and commercial buildings.

- Evaluations of emerging technologies, including considerations for energy performance, product development, market adoption and business start-ups.
- Resource utilization for achievement of objectives supporting the sustainable, productive, and economic consumption of energy.

**Ongoing and prior work includes:**

- Chair for CSA Group's Strategic Committee for Performance, Energy Efficiency and Renewables (SCOPEER), which serves as the national body with primary responsibility for the development of energy performance standards approved as National Standards of Canada for energy-consuming equipment and buildings. These standards are referenced in federal and provincial energy efficiency regulations and building energy codes.
- Technical and Management Support for development and commercialization of new motive power technologies capable of providing higher horsepower single-phase ratings for expanding commercial and agricultural applications in rural locations and supporting the adoption of DC rapid charge system in rural regions.
- Assessment of Performance Benchmarking Tools for the measurement and reporting of energy performance in buildings from concept/design through to post-construction occupancy, supporting growth in the adoption of performance-based decision-making among building professionals.
- Business Case Development for a user-friendly, cloud-based energy modelling software tool to simulate energy performance and validate energy code compliance in less complex, small to medium-sized commercial buildings.
- Technical and advisory support for work undertaken by Red River College in respect to the College's National Sciences and Engineer Research Council (NSERC) funded Building Envelope Technology Access Centre (BETAC).
- Evaluation of Infrastructure Requirements for battery-powered, all-electric transit bus fleets being considered by North American and international transit authorities as a response to business and climate change mandates.

**MANITOBA HYDRO, WINNIPEG, MANITOBA**

*2010-2017 – Division Manager, Industrial & Commercial Solutions*

Director-level responsibility for Manitoba Hydro's commercial and technical relationship with the 400-plus largest electric and natural gas consumers in Manitoba. Provided strategic guidance for economic development initiatives aimed at attracting and retaining commercial and industrial customers, including examination of alternative rate structures, renewable supply options and demand-side management programming intended to enhance the competitiveness of Manitoba's commercial and industrial customers.

Managed a Customer Service Division consisting of 25 plus account managers, economic development specialists and administrative staff, along with 35 - 40 engineers, technicians and energy-utilization specialists supporting residential, commercial and industrial DSM programming, renewable energy resources, electric and natural gas service inquiries, contractual commercial business relationships, demand-side management activities, power quality analysis, and renewable customer-sited, distributed generation.

**Specific areas of accountability included:**

- Divisional operations and fiscal management related to key and major account management, commercial and technical agreements, customer service policy, service reliability, power quality, service extensions and upgrades, alternative rate structures, energy efficiency, emerging

technologies and customer-focused residential, commercial and industrial demand-side management programs.

- Additional duties encompassed consultation and support for load forecasting, resource planning, rate design and customer policy review, along with provision of technical support and witness testimony for public rate hearings and coordination of government interaction on energy conservation and climate change initiatives.
- Provided strategic leadership and oversight for Manitoba Hydro's collaboration with CSA Group and other industry associations on initiatives supporting Federal and Provincial objectives for sustainability and climate change action, such as the Pan Canadian Framework on Clean Growth and Climate Change.

### **MANITOBA HYDRO, WINNIPEG, MANITOBA**

#### *2008-2010 – Business Initiatives Manager*

Developed non-regulated, for-profit initiatives designed to provide specialized energy-related services to large commercial and industrial customers using Manitoba Hydro's in-house technical and project management expertise, with specific emphasis on services related to the installation and maintenance of high voltage customer-owned equipment, power protection backup generators, etc.

Designed and implemented alternative utility rate structures to address the impact of the global downturn on Manitoba-based energy-intensive industrial operations during the 2008/09 global recession and oversaw the development of demand-side management initiatives aimed at improving the energy efficiency, productivity and competitiveness of Manitoba industries.

### **MERIDIUM POWER INC (MANITOBA HYDRO SUBSIDIARY), WINNIPEG, MANITOBA**

#### *1999-2007 – General Manager*

Developed and implemented business plan for the formation and operation of a wholly-owned Canadian subsidiary of Manitoba Hydro dedicated to the development and commercialization of innovative electric motor and generator technologies targeting agricultural, commercial and industrial applications.

Overall responsibility for operation and fiscal management of engineering, marketing/sales, service and support functions for a Canada-wide network of distributors and agents targeting markets requiring motive power for higher horsepower agricultural applications, such as irrigation, and battery-free power protection for critical commercial/industrial applications requiring high quality uninterruptible service.

### **MANITOBA HYDRO, WINNIPEG, MANITOBA**

#### *1995-1998 – Senior Motor Systems Engineer*

Developed, implemented and delivered industrial energy efficiency programs for large commercial and industrial customers in Manitoba, including provision of technical expertise to assist customer with design, procurement and operation of energy efficient electric motor systems and driven-equipment.

Worked actively with CSA Group to develop standardized test methods and minimum energy performance standards for electric motors and motor-driven systems adopted across North America by manufacturers and regulators.

### **MANITOBA HYDRO, WINNIPEG, MANITOBA**

#### *1992-1994 – Motor Program Engineer, Industrial Energy Management*

Provided technical and administrative support for Manitoba Hydro's Industrial Power Smart High Efficiency Motors Program aimed at improving the energy efficiency of electric motors installed at commercial and industrial facilities in Manitoba. Led efforts to standardize energy efficiency test methods for motors.

Worked nationally with other Canadian utilities and global motor manufacturers to develop a coordinated approach to energy efficiency programming, resulting in Canada being the global leader in adoption of



energy efficient electric motors.

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#### PROFESSIONAL AFFILIATIONS/DEVELOPMENT:

**Registered Professional Engineer** – Association of Professional Engineers and Geologists of the Province of Manitoba (APEGM).

**CSA Committee Chairperson** - Steering Committee on Performance, Energy Efficiency and Renewables (SCOPEER), CSA Group.

SCOPEER facilitates the development of Standards Council of Canada (SCC) accredited CSA energy performance standards specifying test methods for determination of energy performance in equipment and systems, while also facilitating the implementation of minimum energy performance standards (MEPS) within energy efficiency guidelines, conservation programs and government energy efficiency regulation. The work of SCOPEER actively supports the North American and global harmonization of energy performance standards for residential, commercial and industrial equipment ([www.csagroup.org](http://www.csagroup.org)).

**Advisory Board Member** - Red River College, Building Envelope Technology Access Centre (BETAC).

BETAC is a Natural Sciences and Engineering Research Council (NSERC) funded Technology Access Centre that provides a multi-disciplinary environment to facilitate advancements in building envelope technology that provide for greater energy efficiency and durability, while addressing the intended occupancy, service life and related climatic conditions for buildings. It is intended to enhance the capability for local companies, particularly small and medium-sized enterprise to become more productive and innovative ([www.rrc.ca/betac](http://www.rrc.ca/betac)).

**Construction Strategic Council Member** - Red River College, School of Construction and Engineering Technologies.

The Construction Strategic Council works with Red River College to identify the needs of the construction industry and support the development of programming to facilitate the necessary skills and trades training required by the construction industry.

**President / Executive Board Member** – Winnipeg South End United Soccer Club (WSEU).

Elected volunteer board and managing executive position responsible for an annual budget approaching \$1.0 million and oversight of technical and administrative staff supporting youth soccer program development and delivery within the community. WSEU is the primary coordinator and facilitator for the development and delivery of soccer programming for more than 5,000 recreational and competitive youth soccer players from ages 4 to 17 in South Winnipeg. The District association works closely with member Community Centres, youth leagues and other regional and provincial associations to champion youth soccer and provide accredited and sanctioning programming for youth and their families ([www.wseu.ca](http://www.wseu.ca)).