

INTERVENER APPLICATION FORM

Application re Hearing:			
Name of Prospective Intervener (Organization Name or Individual):			
Prospective Intervener Contact Information			
Organization or Individual Address:			
Organization Contact Person(s) (if applicable):			
Contact Information:	Business:		Other Phone:
	Fax Number:		Email:
Representative Contact Information:			
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:		
Expert Consultant #1:		
Name:	Experience	Evidence to be provided on issues in scope:
	_____Years	As an economist, Mr. Bowman will focus on matters related to revenue requirements, financial targets, finance expense, debt management, depreciation expense, amortization, revenue forecasts, cost of service and use of forecasts and projections in determining whether rates are just and reasonable in the short, medium and long-term, while also considering the context of the strategic plan and export forecasts.
Telephone #:	Tariff Rate:	
Address and Email:	Firm or Organization:	Brief explanation of experience relevant to evidence to be provided:

Expert Consultant #2:		
Name:	Experience:	Evidence to be provided on issues in scope:
	_____Years	As a professional engineer, Mr. Friesen will focus on matters related to load forecasts (including DSM), domestic revenue projections, cost-of-service, rate design, customer impacts, OM&A expense, hydrology, capital expenditures as key inputs for determining whether rates are just and reasonable, while considering the context of the corporate strategic plan, export forecasts and domestic consumption forecasts.
Telephone #:	Tariff Rate:	
	\$_____	
Address and Email:	Firm or organization:	Brief explanation of experience relevant to evidence to be provided:
Expert Consultant #3:		
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:	
Witness #1:	
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 Manitoba Industrial Power Users Group (MIPUG) is an association of large energy consumers working together on issues of common concern related to electricity supply and rates in Manitoba. The association's key concerns relate to reliability of supply and delivery, electricity costs and measures for ensuring rates reflect the costs for the efficient provision of electricity, and are fair and reasonable, stable and predictable.

MIPUG member companies are substantial users of electric power in Manitoba Hydro's General Service Large rate classes (including all three voltage subclasses). These customer rate classes collectively purchase approximately 8,000 GWh of power annually (and account for about 35% of Hydro's domestic energy sales).

MIPUG members at this time include:

- Amsted Rail - Griffin Wheel Company;
- Canada Kraft Paper Industries Ltd.;
- Chemtrade Logistics Inc.;
- Enbridge Pipelines Inc.;
- ERCO Worldwide;
- Gerdau Long Steel North America – Manitoba Mill;
- CTD Group (Integra Castings);
- Koch Fertilizer Canada ULC;
- Maple Leaf Foods;
- Roquette Canada Ltd.
- J.R. Simplot Company
- TransCanada Keystone Pipeline; and
- Winpak Ltd.

Beyond members proper, MIPUG has ongoing engagement on energy matters with other industrial stakeholders and associations that are not members of MIPUG. These parties have an active interest in energy matters, are impacted in a similar manner as MIPUG members and often are aligned with MIPUG in matters of priorities and positioning.

To that end, the MIPUG intervention, since the 1980s, has always technically had the membership base as the "client". However, these interventions have always represented the broader interests

of industrial power users, including GSL rate class consumers (both commercial and industrial) and the energy impact on provincial competitiveness, both broadly and generally. These users include future industrial users, and non-members (and, of course, the complementary interests of non-industrial users of power where these users have a similar interest in competitive rates and a well-run, appropriately managed, and properly capitalized utility).

MIPUG does not operate with a formal governing body, however three members presently act as an executive for the group: Dale Bossons, Director of Manufacturing at Chemtrade Electrochem Inc.; Kelly Simonson, Managing Director at Koch Fertilizer Canada; and Morgan Curran-Blaney, Vice-President Manufacturing – Fresh Port at Maple Leaf Foods Inc. MIPUG is an informal association and does not pass resolutions.

Please state your reasons for intervening in this proceeding:

Fundamentally, MIPUG intervenes to ensure that Manitoba Hydro rates reflect an efficiently operated electric utility and are based on the cost to serve each customer class. MIPUG companies are long-term economic contributors to Manitoba, and as such require stable and predictable rates over the long-term to maintain their competitive position and establish the business case for further investment in the Province. Periodic and timely reviews by an independent and transparent regulator provide assurances as to whether rates are fair and reasonable, stable and predictable.

MIPUG's focus for this proceeding, given the extended period since Manitoba Hydro last filed complete information and participated in a thorough and transparent review before an independent regulator, relates to significant changes to the Crown Corporation's circumstances and whether current rates remain just and reasonable considering those changes. MIPUG will also strive to establish whether current rates and future rate projections support the basic principles of being cost-based, fair and reasonable, stable and predictable. MIPUG will also seek to determine whether Manitoba Hydro has responded adequately to directives in prior PUB Orders and reasonably addressed changes in its circumstances as outlined by its strategic plans, short, medium and long-term projections.

At its last intervention in the 2019/20 GRA, MIPUG did not plan to review in detail, methodological or long-term matters that have been deferred by the PUB until Manitoba Hydro's next GRA filing (as listed in PUB correspondence to Manitoba Hydro and past interveners dated November 21, 2018). The setting of rates by Government legislation in the interim and absence of a Manitoba Hydro GRA filing in that timeframe, raises the profile of those matters, as considerations for MIPUG to seek resolution on in this review.

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

The Board's decision will establish whether current rates charged for electricity since the 2019/20 year and subsequent to Government-mandated rate increases remain just and reasonable in light of current circumstances. MIPUG members, as General Service Large customers of Manitoba Hydro, are directly impacted by rates for electricity, which increase individual operating costs with each successive rate increase. MIPUG members as industrials are often not able to pass along increased costs for their products, with market prices often set by commodity markets, economic and/or contract conditions.

Additionally, the Board's decision will establish how future rate proceedings unfold in Manitoba, and industrials, who often operate under long-lead planning cycles for output economics as well as investment decisions, want to ensure timing considerations and predictability in rate setting are reviewed transparently to ensure that rates remain stable and predictable in the short, medium and long-term.

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:

MIPUG's 13 customers collectively purchase over 4,000 GWh of electricity annually, accounting for approximately 18 - 20% of domestic electricity sales, and nearly two-thirds of General Service Large class consumption in Manitoba. More broadly, MIPUG works as a group to represent the interests of the three GSL classes (including both industrial and commercial sector companies), which make up approximately 35% of Manitoba Hydro's total domestic sales, as well as industrial power users from all rate classes generally.

There are no other intervenors in this proceeding representing the interests of large power users, either industrial or commercial.

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:

MIPUG has intervened in every Manitoba Hydro hearing since the late 1980's, including General Rate Applications, the Centra Gas Acquisition, the 2006 and 2015 Cost of Service Methodology reviews and the Needs For and Alternatives To (NFAT) review. MIPUG's intervention in this application is focused on a Manitoba Hydro specific context. Many MIPUG member companies are involved in similar groups dealing with rate matters in other jurisdictions and have intervened as such, including but not limited to BC, Quebec, Ontario, and Alberta.

MIPUG's legal counsel and expert witnesses have extensive experience gained through these reviews before the Manitoba PUB and similar reviews in other jurisdictions, which is further expanded through prior experience working with directly with industrial customers and electric utilities across Canada.

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

While the PUB has not yet ruled on the scope of this review, MIPUG intends to focus its intervention on key economic and financial conditions that impact costs and revenues, considering Manitoba Hydro's material change in circumstances.

MIPUG has met with the Consumer Coalition and worked cooperatively to establish a key issue list applicable to a broad and comprehensive review of Manitoba Hydro focused on the determination of whether current rates remain just and reasonable in the context of Manitoba Hydro current and projected circumstances. The issue list identifies matters related to revenue requirements, strategic plans, financial targets, finance expense, debt management strategies, operating, maintenance and administration expense, depreciation, amortization and regulatory deferrals, load and revenue forecasts, export sales, hydrology, capital spending, major capital projects, cost-of-service methodology, rate design and the role of medium to long-term projections

for determining whether rates are just and reasonable, stable and predictable. MIPUG also plans to address whether Manitoba Hydro has reasonably addressed prior PUB directives.

By working collaboratively with the Consumers Coalition to develop a key issue list (attached to this application), MIPUG is attempting to support an efficient yet comprehensive framework for a review of Manitoba Hydro and avoid duplication in its intervention. This diligence has been demonstrated in past proceedings where MIPUG and the Consumer's Coalition have worked together on areas of mutual concern.

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, MIPUG intends to request an award of costs for participation. Per the PUB's Intervener Cost Policy, Section 3.0, the eligibility criteria for when 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 intervention;
- (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), MIPUG has proven in past interventions that its intervention is focused on matters directly impacting Manitoba Hydro rates and makes a significant contribution in rate applications. MIPUG intends to focus its intervention in this proceeding to make a relevant contribution for consideration of whether Manitoba Hydro current rates remain just and reasonable, considering the substantial change in the Crown Corporation's circumstances.

For part (b), MIPUG is coordinating with the Consumer's Coalition in intervention, as expressed above.

For part (c) MIPUG's interests are not solely related to members' business interests, but also ensuring the long-term sustainment of all Manitoba industry and ratepayers generally. Its intervention will balance impacts on the Manitoba economy, in both the short- and long-term, with the interests of Manitoba Hydro. MIPUG's interests are not on setting the lowest rates possible but on maintaining reliable electricity service at predictable rates that are set based on the cost of service.

For part (d) MIPUG's membership includes a substantial number of industrial customers (currently 13 members) representing many different industry segments operating across Manitoba. MIPUG members are often located in rural communities and are generally among the largest employers within their respective communities. MIPUG members have a substantial interest in the outcome of the proceeding and MIPUG's intervention is coordinated with other stakeholders to ensure that its representative of not only MIPUG members, but also the interests of industrial consumers generally and all three General Service Large customer classes (both industrial and commercial).

Budget for Intervention

As the specific scope and process for this hearing has not yet been established, MIPUG is submitting a draft budget for consideration by the PUB, which can be refined as these parameters become known.

The proposed budget is prepared for a review in a context where there is not general rate application being submitted by Manitoba Hydro. MIPUG understands the context of this hearing to consist of the determination as to whether current rates are just and reasonable in light of the substantial changes in circumstances experienced by Manitoba Hydro since PUB Orders 59/18 and 69/19 were issued. Based on prior statements made by Manitoba Hydro, MIPUG is of the understanding that Manitoba Hydro proposes to file a comprehensive general rate application in the winter of 2022/23 that will include a long-term forecast that reflects Strategy 2040, an updated Integrated Resource Plan and input from a Provincial Energy Policy Framework that is currently in development. If Manitoba Hydro chooses to file either an interim rate application or more comprehensive general rate application prior to this date, MIPUG reserves the right to amend the draft budget outlined below.

The attached draft budget includes a base budget inclusive of discovery, preparation of evidence, and seven days of oral hearings with one day of final argument. The base budget assumes that Manitoba Hydro will file thorough and complete responses to the minimum filing requirements (MFRs) specified by the PUB, and act cooperatively and constructively towards the achievement of an efficient and thorough review in a manner that is consistent with its behavior in past General Rate Applications and Status Update Hearings.

MIPUG is concerned that Manitoba Hydro's actions to this point, as noted in its response to the Coalition Application and PUB Order 53/21, may further increase its costs for intervention. MIPUG has already invested considerable time and cost in addressing these actions prior to the hearing. If Manitoba Hydro's filings are incomplete, requiring additional inquiry and research on the part of MIPUG, it is expected that the costs for its intervention will also increase. A second draft budget has been provided to address such a scenario.

Finally, actions taken by Manitoba Hydro, which may require MIPUG counsel to pursue motions that are time consuming and costly for interveners. It is expected that such motions, if required, will add considerably to the overall costs for participation in this hearing. It is not reasonable for ratepayers intervening in a hearing be held responsible for costs related to motions arising from actions undertaken by Manitoba Hydro, who holds relevant documentation relating to rates that is not available to ratepayers or stakeholders. This privilege represents a condition of information asymmetry that has been recognized by the Board, puts interveners at a disadvantage in a process that is meant to support a fair and transparent review of Manitoba Hydro. Based on prior experience, an estimate has been provided for costs associated with pursuing motions necessary to achieve the desired outcomes of this review.

Manitoba Hydro 2021/22 Status Update Hearing Consumers Coalition and MIPUG

Consumers Coalition and MIPUG joint proposed Key Issues List for assessment of whether current rates are just and reasonable.

1. Revenue Requirements

- Update on projected net income/retained earnings levels and budgeted rate increases in the short to medium-term
- Approach to setting electric revenue requirements if MH is not able to produce an Integrated Financial Forecast (IFF) consistent with Order 69/19, Directive 7 or medium to longer-term financial projections that are similar to an IFF
- Implications (revenue requirement and retained earnings) of Government mandated electric rate increase of 2.9% effective December 1, 2020
- Implications of 1 - 3 years of 2.5% annual electric rate increases, should they be imposed as announced by the Manitoba Government in July 2021.

2. Corporate Strategic Plan

- Update on the new MH strategic plan, including changes in operations and risk analysis undertaken by MH since Order 69/19
- Implications for load forecasts, capital forecasts and revenue requirements arising from revised corporate goals & strategies and current assessments of major risks

3. Financial Targets

- Update on traditional financial targets that have been used by the PUB to assess revenue requirement levels
- Update on MH review of financial targets since Order 69/19 – including implications of revised financial targets on revenue requirements and required retained earnings levels
- Update on Order 59/18 Directive 9 & Order 69/19 Directive 9 (rule-based regulation/role & sufficiency of financial reserves) – as well as progress on a longer-term rate strategy since Order 69/19

Finance Expense & Debt Management Strategy

- Update on average interest rates for new borrowings, interest rate forecasts & financing cost projections
- Current debt management strategy & interest rate policy/guidelines

- Use of the expanded (\$1.5 billion) short-term borrowing authority in the MH Act
- Update on current credit ratings and financial market conditions

4. Operations, Maintenance & Administration (OM&A) Expenses

- Organizational structure changes & operational plan – Order 59/18 Directive 12
- Staffing level changes and resulting impacts to levels of service provided by MH.
- Cost containment initiatives since Order 69/19 (including VDP/staffing levels & Supply Chain management) – Order 59/18 Recommendation 4
- Update on OM&A target setting & detailed OM&A budgets – including Order 69/19 Directive 8 (provision of detailed OM&A budgets with next GRA) and response to PUB findings from pages 23 to 24 of Order 69/19 that OM&A targets should be reduced by \$22 million for rate-setting purposes and COVID 19 pandemic

5. Depreciation Expense & Methodology, Amortization and Regulatory Deferral Accounts

- Compliance with Order 59/18, Directives 17, 19, 20, 22 and 23
- Update on next Depreciation Study & potential implications for revenue requirements
- Additions and amortization period of the Major Capital Deferral Account – Order 69/19 Directive 2

6. Domestic Revenues, Load Forecast & Hydrology

- Updates to Load Forecast – including impacts of COVID 19 and economic downturn and projections for longer-term load changes.
- Order 59/18 recommendations to MH re: load forecasting methodology – Order 59/18 Directive 11
- Update on current water/reservoir conditions – and implications for net income and retained earnings levels. Impact if drought conditions are prolonged.
- Update on resource planning (development of an Integrated Resource Plan) and related supply and demand levels

7. Export Revenues

- Update on export revenues and export prices, including net income and retained earnings implications of recent export contracts and changes in export prospects/strategies since Order 69/19.
- Impact of new MMTP transmission inter-connections on export strategy and pricing.

- Impact of the recent changes in market pricing experienced over the past 3 to 6 months, along with projections for future market pricing.

8. Capital Expenditures & Business Operations Capital

- Changes to the Capital Expenditure Forecast (CEF) since Order 69/19
- Changes to the Demand Side Management (DSM) forecast expenditures since Order 69/19
- Prioritization of business operations capital – Order 59/18 Recommendations 1 and 2
- Update on progress towards implementation of a corporate asset framework and associated asset management/condition/prioritization initiatives - including Order 59/18 Directive 14

9. Major Capital Projects

- Update on in-service dates and capital cost projections for all major capital projects (in-progress or completed)
- Major capital projects revenue requirement updates since Order 69/19
- Order 59/18 recommendations to MH re: capital project planning – Order 59/18 Directive 15 and Recommendations 5, 6, 7 and 8

10. Cost of Service Study (COSS) & Rate Design

- PCOSS21 Study with assumptions, output & rate-setting implications – Order 69/19 Directive 11, Order 59/18 Directive 5 (zone of reasonableness) and compliance with COSS Directives 24, 25, 26 and 27 from Order 59/18
- PCOCC21 scenarios incorporating current in-service and capital cost projections of major capital projects, including Keeyask generating station
- Update on rate design directives from Order 59/18 – net metering rate/Solar Energy Program (Directives 7 and 30), declining block general service rates & rate differentiation in the GSS non-demand class (Directive 28 – as well as Directive 10 from Order 69/19) and time-of-use rates for GSL customers (Directive 29)

11. Compliance with Prior PUB Directives

- General status of MH compliance with PUB directives from Orders 59/18 and 69/19 – as well as prior PUB Orders

12. Role of Medium to Long-Term Forecasts and Projections in Determining Whether Rates Are Just and Reasonable

- Forecasted changes arising in the medium to long-term

- Risk factors in the medium to long-term

PUB Proposed Minimum Filing Requirements Manitoba Hydro 2021/22 Status Update Hearing (Including MIPUG Additions)

Note: References in brackets indicate similar requests previously made. These references indicate how the information may be presented.

Corporate

1. Details of all material changes in the Corporation's operations since the last GRA hearing
2. Current Corporate Risk Analysis Report

Financial Results and Forecasts

3. Actual, budgeted, outlook, or forecast operating statements, balance sheets, and cash flow statements (both direct and indirect methods) for 2020/21, 2021/22, 2022/23, and all additional forward years for which these documents exist [2019 GRA Appendix 1, 2]
4. Quarterly Financial Statements for the current fiscal year
5. MHEB 70th Annual Report for year ended March 31, 2021
6. Details of the determination of each of the financial ratios (debt-to-equity, interest coverage, and capital coverage) for each of the years 2019/20 to 2022/23 and any future years as available [2019/20 GRA PUB/MH 1-8]
7. Detail of the Net Movement in Regulatory Deferral Accounts including Opening and Closing Balances, Additions, and Amortizations [2019 GRA-PUB/MH 10 a-c]
8. A table that shows the incremental and cumulative impacts to retained earnings of a 5- and 7-year drought, beginning in 2021/22. [2017/18 GRA PUB/MH II-40]
9. Revenue requirements including cost components (Finance / Depreciation / Operating / Water Rentals / F&PP / Taxes) for the years 2019/20 to 2023/24 for each of the following [2019/20 GRA PUB/MH I-9]:
 - Keeyask generating station
 - Manitoba-Minnesota Transmission Project
 - Great Northern Transmission Line
 - Bipole III and Riel station
 - Birtle Transmission Project
 - Business Operations Capital

10. Continuity schedules showing the deferrals and amortization (or proposed amortization) of the Bipole III Deferral Account and the Major Capital Deferral Account [2019/20 GRA PUB/MH I-11]
11. Incremental revenues and unit revenues from Keeyask by year, broken down by firm and opportunity sales [2017/18 GRA PUB MFR 82]
12. Details of the impacts of COVID-19 pandemic on O&A expenditures in 2020/21 and 2021/22 to date

Finance Expense and Debt

13. Current Economic and Financial Indicators (including interest rates) Forecast. [2019/20 GRA Additional Information Attachment 5]
14. Most recent credit rating reports from DBRS, Moody's, and S&P
15. Manitoba Hydro's most recent presentation(s) made to each credit rating agency

Export and Domestic Revenues

16. Current approved Electric Load Forecast and tables that show updates to both the load forecast and the actual loads resulting from the COVID-19 pandemic
17. Updates to graphs of Annual System Inflows, Energy in Storage, Daily Hydraulic Energy from Inflow, and Total Hydraulic Generation
18. Graphs and tables of net export revenues and net income for 2021/22 and 2022/23 for each of the possible water flow conditions (P1 to P100). [2019/20 GRA PUB/MH I-29(c)]

Capital Expenditures

19. Capital Expenditure Forecast. If there have been updates since the approved CEF provide a table that shows the updates.

COSS and Rate Design

20. PCOSS21 and allocation tables; and PCOSS22 (if available)
21. Proofs of Revenue for 2021/22 and 2022/23

MIPUG Comments

MIPUG suggests that the PUB consider the following supplements to the Proposed Minimum Filing Requirements, which constitute basic information requirements for assessing current rates and whether they remain just and reasonable. These additions assume that existing rates charged by Manitoba Hydro remain. If changes to rates (whether interim or finalized) are proposed or anticipated by Manitoba Hydro over the next 12 months, a full IFF scenario with all major MFR items (as finalized in the 2017 GRA, March 31, 2017) will be required.

Supplemental Minimum Filing Requirements

- Corporate Strategic Plan (Strategy 2040) or status updates regarding the plan and what major items remain outstanding before Manitoba Hydro can finalize the plan.
- Current staffing levels and forecasts (Positions and EFTs by department) including detail on staffing level changes arising from external directives to reduce costs.
- Any updates to the quantitative analysis and detailed risk/uncertainty analysis (e.g. KPMG Report - 2015, MH Internal Report on Financial Target Review - 2015).
- All financial statement presentations including an “electric only” version with appropriate regulatory accounting for deferred assets/liabilities/OCI.
- Long-term Electric Load Forecast (20+ year)
- Full Long-Term Capital Expenditure Forecast (20 year)
- Any updates to cost projects for a 5 plus year extreme drought, considering updated export contracts, energy pricing forecasts, fuel prices, and imports.
- Debt Management Strategy, including borrowing and repayment amounts (by year) for next 20+ years showing exposure to interest rate changes from forecast.
- Interest Rate Forecast, including specific reference to the vintage of the forecast and the sources relied upon in developing the forecast.
- Major Capital Projects Quarterly Reports to the PUB since the MH 2019/20 Rate Application
- Operating, Maintenance & Administration Quarterly Reports to the PUB since the MH 2019/20 Rate Application.

PATRICK BOWMAN
Principal Consultant
Bowman Economic Consulting Inc.

161 Rue Hebert
Winnipeg, Manitoba
R2H 0A5 CANADA

AREAS OF EXPERIENCE:

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

EDUCATION:

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

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



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.

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).

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).

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).