

EB-2022-0200 : 1 : Cathy Galler

COST CLAIM NUMBER 1474	SUBMISSION DEADLINE DATE July 12, 2023	CLAIM STATUS Approved by Finance
EB# EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	OTHER EB#S	PHASE #* 1
INTERVENOR Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	INTERVENOR COMPANY* Industrial Gas Users Association, Ottawa: Corporation	INTERVENOR TYPE Full Registrant
HST RATE ONTARIO 13.00	EXCHANGE RATE	COUNTRY Canada
HST NUMBER 89659 3323 RT0001	LATE SUBMISSION ALLOWED Yes	EXTENSION DEADLINE DATE July 14, 2023

PARTICIPANTS

New	Non-Filing Participant First, Last Name	Filing Participant	Total (\$)	Total Hours	Participant Claim Status
Yes	Dustin , Madsen		27,967.50	75.00	Submitted
Yes	Alice , Napoleon		1,237.50	3.75	Submitted
Yes	Sol , Deleon		5,685.90	17.23	Submitted
Yes	Paul , Rhodes		4,037.50	23.75	Submitted
Yes	Sonia , Knowlton		339.00	3.00	Submitted
No	,	Mondrow, Ian; +1 (416) 369-4670 ian.mondrow@gowlingwlg.com	213,522.54	572.60	Submitted
No	,	Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	214.70	1.90	Submitted
Yes	Sean , Cleary		39,154.50	105.00	Submitted
Yes	Asa , Hopkins		21,360.90	64.73	Submitted
Yes	Tim , Woolf		165.00	0.50	Submitted
Yes	Tyler , Fitch		230.00	1.00	Submitted
Yes	Chris , Hummel		883.66	4.60	Submitted
Yes	Robert , Knecht		39,600.00	120.00	Submitted

ATTACHMENTS

Attachment	Document Type	Import Message
IGUA EB-2022-0200 Cost Claim 071220232101.pdf		
IGUA EB-2022-0200 Cost Claim 071420231522.pdf		

TOTAL LEGAL/CONSULTANT/OTHER FEES
321,946.80

TOTAL DISBURSEMENTS
0.00

TOTAL HST
32,451.90

TOTAL CLAIM
354,398.70

TOTAL AMOUNT AWARDED

TOTAL HOURS CLAIMED
993.06

TOTAL HOURS DISALLOWED

REASON FOR
DISALLOWANCE

REASON FOR
DISALLOWANCE - 2

REASON FOR
DISALLOWANCE - 3

MAKE CHEQUE PAYABLE TO
Industrial Gas Users Association

SEND PAYMENT TO ADDRESS
851 Industrial Avenue, P.O. Box 30
Ottawa, ON
K1G 4L3

ATTENTION
Shahrzad Rahbar

SUBMIT SECTION

I am a representative of the Party. I have examined all of the documentation in support of this cost claim. The costs incurred and time spent are directly related to the Party's participation in the OEB Process referred to above.

This cost claim does not include any costs for work done, or time spent, by a person that is an employee or officer of the Party as described in section 6.05 and 6.09 of the OEB's Practice Direction on Cost Awards.

The information (fees and disbursements) filed in this cost claim is complete and accurate and in accordance with the OEB's Practice Direction for Cost Awards and Appendix A, the Cost Awards Tariff.

SUBMITTED BY
Ian Mondrow

DATE SUBMITTED
July 14, 2023

Dustin Madsen

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Dustin	NON-FILING PARTICIPANT L. NAME Madsen
SERVICE PROVIDER TYPE* Consultant	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 20	HOURLY RATE 330
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
75.00	24,750.00	3,217.50	27,967.50			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	28.20	330	9,306.00	13.00	1,209.78	10,515.78
DISCOVERY						
Preparation of Interrogatories	19.70	330	6,501.00	13.00	845.13	7,346.13
Review Interrogatory Responses		330		13.00		
Technical Conference Preparation		330		13.00		
Technical Conference Attendance		330		13.00		
Technical Conference Follow Up		330		13.00		
ISSUES LIST						
Preparation		330		13.00		
Attendance at Issues Conference		330		13.00		
INTERVENOR EVIDENCE						
Preparation	27.10	330	8,943.00	13.00	1,162.59	10,105.59
Interrogatory Responses		330		13.00		
Preparation of Witness(es) for Attendance at Hearing		330		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		13.00		
Attendance		330		13.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		13.00		
Attendance at Presentation to Panel		330		13.00		
ORAL HEARING						
Preparation		330		13.00		
Attendance at Oral Hearing		330		13.00		
SUBMISSIONS						
Written Submissions		330		13.00		
Oral Submissions		330		13.00		
Attendance at Oral Submissions		330		13.00		
OTHER ATTENDANCE						
Other Attendance		330		13.00		
COMMUNICATION						
With Client		330		13.00		
With Other Parties		330		13.00		
MOTIONS						
Preparation of Motion(s) Materials		330		13.00		
Prepare Submissions on the Motion(s)		330		13.00		
Attendance at Hearing on Motion(s)		330		13.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		13.00		
Prepare Submissions on Confidentiality		330		13.00		
Attendance at Hearing on Confidentiality		330		13.00		
DECISION						
Review		330		13.00		
RATE ORDER						
Review		330		13.00		
Prepare Submission on Rate Order		330		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	75.00		24,750.00	3,217.50		27,967.50

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	Invoice	
CostClaim_Emrydia_Invoice_20230712.pdf		
IGUA_EB-2022-0200_Interim	Time Docket	
CostClaim_Emrydia_TimeDockets_20230712.pdf		
IGUA_EB-2022-0200_Interim	CV	
CostClaim_Madsen CV_20230712.pdf		

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Emrydia_Invoice_20230712.pdf	Invoice	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Emrydia_TimeDockets_202307 12.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Madsen CV_20230712.pdf	CV	Hearings	

Time and Charges of Dustin Madsen

Project:

Enbridge rebasing 2024-2028

	Date	Time	Description of Activity
RAE	17-01-2023	2.55	Conduct detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	18-01-2023	2.75	Conduct detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	19-01-2023	3.20	Conduct detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	20-01-2023	3.45	Conduct detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	28-01-2023	5.20	Conduct detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	29-01-2023	6.05	Continue detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
RAE	31-01-2023	5.00	Continue detailed review of filed application materials pertaining to depreciation expense. Prepare notes re same.
IRP	02-02-2023	4.95	Begin preparing information requests to Enbridge.
IRP	03-02-2023	4.25	Continue preparing information requests to Enbridge.
IRP	04-02-2023	2.30	Continue preparing information requests to Enbridge.
IRP	05-02-2023	3.15	Continue preparing information requests to Enbridge. Send first draft of requests to counsel.
IRP	09-02-2023	1.65	Review revisions to requests from counsel and revise accordingly.
IRP	10-02-2023	0.20	Conduct final review of interrogatories and send revised version to counsel. Prepare notes for follow up.
IRP	11-02-2023	3.20	Review interrogatories from other parties and prepare notes re: the same.
IEP	23-02-2023	6.55	Begin preparing draft evidence.
IEP	24-02-2023	5.00	Continue preparing draft evidence.
IEP	25-02-2023	6.25	Continue preparing draft evidence.
IEP	26-02-2023	6.20	Continue preparing draft evidence.
IEP	27-02-2023	3.1 6.65	Continue preparing draft evidence.
IEP	02-03-2023	6.05	Continue preparing draft evidence.
IEP	03-03-2023	6.10	Continue preparing draft evidence.
IEP	04-03-2023	6.80	Continue preparing draft evidence.
IEP	05-03-2023	4.95	Continue work on draft evidence. Prepare draft outline of evidence for counsel.
IEP	06-03-2023	2.00	Finalize draft outline of evidence and send to counsel. Continue preparation of draft evidence.
IRR	09-03-2023	7.40	Review emails from counsel and begin reviewing responses to interrogatories to parties.
IRR	10-03-2023	6.70	Continue detailed review of responses to interrogatories and prepare notes re: the same.
IRR	11-03-2023	7.50	Continue detailed review of responses to interrogatories and prepare notes re: the same.
IRR	12-03-2023	7.05	Continue detailed review of responses to interrogatories and prepare notes re: the same.
IRR	13-03-2023	5.60	Continue detailed review of responses to interrogatories and prepare notes re: the same. Attend conference.
IRR	14-03-2023	6.00	Finalize detailed review of responses to interrogatories and preparation of notes. Respond to email from counsel re: sufficiency of EGI responses. Review counsel's tech conference questions and respond accordingly.
IEP	15-03-2023	4.15	Continue work on preparing evidence.
IEP	16-03-2023	5.00	Continue preparing evidence on depreciation issues.
IEP	17-03-2023	4.95	Continue preparing evidence on depreciation issues. Review emails from counsel re: technical conference discuss the same. Begin working on preparing draft evidence.
IEP	20-03-2023	3.40	Continue preparing evidence on depreciation issues. Send email to counsel re: EGI depreciation update and clarifications re: the same.
IEP	21-03-2023	4.80	Continue preparing evidence on depreciation issues. Respond to email from counsel re: tech conference.
IEP	22-03-2023	4.65	Continue preparing evidence on depreciation issues.
IEP	23-03-2023	3.25	Continue preparing evidence on depreciation issues.
IEP	24-03-2023	4.20	Continue preparing evidence on depreciation issues. Call with OEB staff witnesses re: depreciation. Continue work on depreciation evidence. Send first draft of evidence to counsel.
IEP	27-03-2023	4.25	Continue preparing evidence on depreciation issues. Attend OEB technical conference per counsel's request. Prepare notes for evidence.
IEP	12-04-2023	4.00	Continue work finalizing remaining sections of evidence on salvage costs.
IEP	13-04-2023	4.15	Finalize next draft of evidence. Send to counsel.
IEP	19-04-2023	1.50	Revise draft evidence. Send further revised draft to counsel.
IEP	20-04-2023	0.85	Finalize evidence and send to counsel.
RAE	21-04-2023	1.50	Review email from counsel. Review evidence of Intergroup and prepare notes re: the same.
GOM-GL	27-04-2023	0.30	Respond to email from counsel re: Intergroup evidence.
IRR	03-05-2023	5.55	Review interrogatories from all parties in detail and begin preparing responses.
IRR	04-05-2023	5.00	Continue work on responses to EGI.
IRR	05-05-2023	5.85	Continue work on responses to EGI.
IRR	06-05-2023	4.90	Continue work on responses to EGI and OEB. Send first draft of responses to EGI to counsel.
IRR	07-05-2023	4.85	Continue responding to OEB and other party requests.
IRR	08-05-2023	2.70	Continue responding to OEB and other party requests.
IRR	09-05-2023	3.70	Continue responding to OEB and other party requests. Send near-final responses to counsel. Revise responses to EGI and send to counsel.
IRR	14-05-2023	1.80	Update and revise responses to interrogatories. Send to counsel.
IRR	15-05-2023	0.95	Finalize responses to IRs. Send final edits to counsel.

Emrydia Consulting Corporation**INVOICE**

89 Auburn Springs Blvd SE
Calgary, AB T3M 0Z4
Phone: 403-869-9294

INVOICE #IGUA-2023-01
DATE: JUNE 15, 2023
GST 720920115-RT0001

TO:

Attn: Shahrzad Rahbar
Industrial Gas Users Association (IGUA)
851 Industrial Ave
Ottawa, ON K1G 4L3

FOR:

Services provided in relation to the Enbridge
2024-2028 rebasing application

DESCRIPTION	HOURS	RATE	AMOUNT
Billing for Milestone #1 (\$24,750.00 + HST)			\$24,750.00
Disbursements (see detailed breakdown and support attached)			0.00
HST on services			3,217.50
HST on disbursements			0.00
TOTAL			\$27,967.50

Make all checks payable to Emrydia Consulting Corporation

Thank you for your business!

Consultant, Regulatory and Financial Reporting

December 2011 - Present

Summary of Work for Various Clients

Calgary, Alberta

- Preparation of expert testimony in a wide variety of areas including cost-of-service, revenue requirement, income tax, valuation, depreciation, cost of capital, capital expenditures and prudence.
- Hands on experience in the strategic planning, development and coordination of all elements of regulatory proceedings, including preparation of interrogatories, evidence, responding to information requests, oral testimony, and preparation of written argument and reply argument.
- Recognized expertise and detailed knowledge of financial reporting and treasury processes, utility income tax principles, and International Financial Reporting Standards (“IFRS”), including a significant amount of online and face-to-face teaching experience.

Accounting, Finance, Tax and Regulatory Consultant

January 2016 – Present

Emrydia Consulting Corporation (owner)

Calgary, Alberta

- Preparation of evidence and expert testimony both written and oral on a variety of areas, including cost-of-service, revenue requirement, income tax, valuation, depreciation, and cost of capital. Some examples of oral testimony include:
 - Witness in the New Brunswick Power 2020-21 GRA on all revenue requirement matters and retained in the New Brunswick 2023-24 GRA.
 - Prepared a depreciation study, cost-of-service study and asset valuation for a utility client in Alberta.
 - Filed expert evidence in the Northwest Territories Power Corporation 2022-23 GRA on operating costs, capitalization and depreciation matters.
 - Filed expert evidence in the ATCO Electric 2020-2022 and 2023-2025 GTAs on a variety of matters.
 - Filed expert evidence in the AltaLink 2022-2023 GTA on a variety of matters.
 - Witness in AltaLink’s 2019-2021 GTA on matters related to AltaLink’s proposed change in salvage collection methodology, the reasonableness of AltaLink’s applied for salvage costs, and line clearance mitigation expenditures.
 - Witness in the AESO’s Capacity Market Application on various matters pertaining to the AESO’s application.
 - Witness in Alberta PowerLine Fort McMurray West 500 kV Project, on matters pertaining to AESO compliance with legislative requirements, and cost concerns related to routing and the competitive procurement process.
 - Witness in ATCO Electric Transmission’s 2018-2019 GTA on matters related to deferral and reserve accounts, fixed and variable compensation, operating costs, head office costs, allocated costs, depreciation matters, and other various areas.
 - Witness in the 2018 Generic Cost of Capital (“GCOC”) Proceeding on matters relating to generic income tax methods and the recommended capital structure.
 - Witness in ATCO Electric Transmission’s 2015-2017 General Tariff Application (“GTA”), on matters relating to regulatory accounts, forecasting accuracy, approach to budgeting, operating costs, income taxes and other financial matters.
- Prepared a comprehensive cost-of-service study for an Alberta based distribution

- facility owner.
- Prepared a comprehensive business and succession plan for an Alberta based distribution facility owner.
 - Completed a business valuation, including a calculation of the fair market value and replacement cost new less depreciation value of the assets of an Alberta based distribution facility owner.
 - Provided advice to various parties in Alberta's regulated and unregulated utility industry on numerous matters including cost-of-service rate design, business issues, hedging, regulated rate option calculation, and other specific matters.

Business Valuation and Accounting/Regulatory Risk Consultant Nov 2015 – January 2016
Berkshire Hathaway Energy Canada Calgary, Alberta

- Advise senior management at Berkshire Hathaway Energy Canada on potential acquisition risks and rewards.
- Evaluate all financial, treasury, regulatory, operational and legal elements of potential acquisitions and coordinate with other senior team members to develop a go/no-go proposal for each potential acquisition.
- Construct and maintain a business valuation model to support calculations of the enterprise value, including development of assumptions around levered/unlevered discount rates, cash flows, terminal values and certain tax assumptions depending upon the ultimate structure of the transaction.

Regulatory Specialist (Consultant) November 2012 – July 2015
AltaLink L.P. Calgary, Alberta

- Drafted or coordinated the drafting of AltaLink's 2012/2013 Deferral Account Application and 2015/2016 GTA, including responses to information requests, updates to the applications and other matters as required.
- Assisted AltaLink, working in conjunction with other Alberta utilities, in the drafting of the 2013 GCOC R&V application and the Utility Asset Disposition (UAD) Appeal. This work included detailed research and analysis into GCOC and UAD matters.
- Actively engaged in the AUC proceeding to assess the AltaLink sale, including responses to information requests and responding to due diligence questions from the sale itself.
- Prepared AltaLink's 2011, 2012, 2013 and 2014 Reports on Operations and Finances in compliance with AUC Rule 005.
- Assisted in the coordination of the 2013/2014 GTA oral hearing, including undertakings, preparation of cross-examination questions and monitoring of oral testimony.
- Prepared the public and confidential rebuttal evidence, responses to additional information requests, and argument/reply argument for the 2013/2014 GTA.
- Acted as AltaLink's lead representative on a variety of key applications filed by other Alberta Utilities, including PBR applications, GCOC, capital tracker applications, GTAs, Deferral Account Applications, and also the AESO's Tariff Application.
- Automated the majority of the Report on Operations model and improved the documentation related to the process, thereby reducing the time required to update the Report on Operations to a matter of a couple weeks rather than a couple months.
- Automated and refined the Hearing Cost and Legal Cost process, including filing of costs with the AUC, reconciliation of costs for accounting purposes, and installation of an improved internal information system for gathering and reporting.
- Continued monitoring of other proceedings and performed all other duties as required by the Vice President, Regulatory Rates and Tariffs.

DUSTIN MADSEN CA, CPA, CPA (IL, USA), CDP, CRRA

Tel: 403-869-9294 E-mail: dustin@emrydia.com

Manager, Financial Reporting (Contract)

April 2012 – October 2012

AltaLink L.P.

Calgary, Alberta

- Managed the Financial Reporting group, and performed all duties as required of the Manager, Financial Reporting and any other duties as required.
- Coordinated the implementation of BPC to assist with the consolidation of financial results in SAP.
- Provided technical IFRS input for a variety of projects and Canadian Electricity Association matters.

Consultant, Corporate Finance and Tax

February 2012 – April 2012

Enerflex Ltd.

Calgary, Alberta

- Assisted with pre-implementation planning for IFRS 9 through 13.
- Reviewed the hedging policy in place at Enerflex to assess ongoing effectiveness and provided feedback on a new treasury management system.
- Reviewed annual financial statements, Management's Discussion and Analysis and the AIF, and provided feedback for changes and improvements to the first quarter financial statements.
- Performed a review of existing accounting policies including embedded derivative review of major contracts, lessee and lessor accounting, segmented reporting, borrowing costs, stock options and more.

Manager, Forecasts and Budgets

January 2010 – November 2011

IFRS Project Manager/Sponsor

February 2007 – December 2010

Senior Financial Accountant, Financial Reporting

February 2007 – March 2010

FortisAlberta Inc.

Calgary, Alberta

- Prepared/reviewed monthly, quarterly and annual forecasts and all associated financial analysis for the CFO in comparison to actuals.
- Review of regulatory filings and annual regulatory financial statements submitted to the Alberta Utilities Commission.
- Preparation/review of annual Business Plan for approval by Board of Directors.
- Improvement of monthly and daily treasury forecasts and involvement in debt issuances and responses to due diligence requests.
- Management and review of the monthly tax calculation and development of various tax planning strategies from both a regulatory and financial reporting perspective.
- Assisted in the review of all corporate tax processes and calculation of tax provisions, as well as, design of complex tax planning strategies.
- Responsible for the planning and oversight of the conversion to International Financial Reporting Standards including the review of all policy papers, issues lists, system conversion issues etc.
- Responsible for financial reporting, including the preparation and review of financial statements in accordance with Canadian generally accepted accounting principles, the preparation and review of the MD&A, preparation of the monthly management report, and preparation and review of accounting research and policies.
- Involved in the design, implementation and ongoing improvements of various accounting processes and internal controls within financial reporting, accounts payable, capital assets, inventory, general accounting, treasury, taxation and payroll.
- Provided IFRS transition course for all Finance staff at FortisAlberta.
- Demonstrated effective time management, organization, supervisory and problem solving/analytical skills.

DUSTIN MADSEN CA, CPA, CPA (IL, USA), CDP, CRRA

Tel: 403-869-9294 E-mail: dustin@emrydia.com

Vice Chair, CEA's Finance and Accounting Subcommittee May 2011 – December 2011
Member May 2007 – December 2011
Canadian Electrical Association Ottawa, Ontario

- Attended all bi-annual meetings as an active participant involved in presentations at the meetings, organized special purpose conference calls, prepared response letters to both the IASB and AcSB on a variety of topics, and assisted in the special subcommittee on Rate Regulated Accounting.
- Assisted the Chair in the preparation of meeting content, arranging speakers and guest attendees, and other duties as requested.

IFRS Classroom Facilitator June 2009 – November 2011
IASeminars London, England

- Classroom facilitator for IASeminars focusing on IFRS accounting within the Utilities and Energy industries.

Experienced Module Facilitator January 2006 – September 2009
CA School of Business Calgary, Alberta

- Facilitated Modules 1 to 5 multiple times with class sizes between 8 and 20 students.

Senior Auditor September 2003 – February 2007
Deloitte and Touche LLP Saskatoon, Saskatchewan/ Calgary, Alberta

- Performed review, audit, SOX 404 and CSOX work for a variety of large multi-national clients including Petro Canada, Potash Corporation, and Superior Propane, as well as review and audit work for smaller to mid-sized for profit and not-for-profit organizations.
- Completed personal tax returns and assisted in the audit of corporate tax provisions.
- Provided audit and oil and gas accounting training to new and existing staff at Deloitte.

EDUCATION

Certified Rate of Return Analyst
Society of Utility and Regulatory Financial Analysts

Certified Depreciation Professional
Society of Depreciation Professionals

Certified Public Accountant
Illinois Board of Accountancy

Chartered Professional Accountant
Chartered Professional Accountants of Alberta

Chartered Accountant
Institute of Chartered Accountants of Alberta

Bachelor of Commerce, Major in Accounting, with Great Distinction
University of Saskatchewan

Alice Napoleon

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Alice	NON-FILING PARTICIPANT L. NAME Napoleon
SERVICE PROVIDER TYPE* Analyst	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 20	HOURLY RATE 330
HST RATE CHARGED* 0.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
3.75	1,237.50	0.00	1,237.50			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	1.00	330	330.00	0.00		330.00
DISCOVERY						
Preparation of Interrogatories		330		0.00		
Review Interrogatory Responses		330		0.00		
Technical Conference Preparation		330		0.00		
Technical Conference Attendance		330		0.00		
Technical Conference Follow Up		330		0.00		
ISSUES LIST						
Preparation		330		0.00		
Attendance at Issues Conference		330		0.00		
INTERVENOR EVIDENCE						
Preparation		330		0.00		
Interrogatory Responses	2.75	330	907.50	0.00		907.50
Preparation of Witness(es) for Attendance at Hearing		330		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		0.00		
Attendance		330		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		0.00		
Attendance at Presentation to Panel		330		0.00		
ORAL HEARING						
Preparation		330		0.00		
Attendance at Oral Hearing		330		0.00		
SUBMISSIONS						
Written Submissions		330		0.00		
Oral Submissions		330		0.00		
Attendance at Oral Submissions		330		0.00		
OTHER ATTENDANCE						
Other Attendance		330		0.00		
COMMUNICATION						
With Client		330		0.00		
With Other Parties		330		0.00		
MOTIONS						
Preparation of Motion(s) Materials		330		0.00		
Prepare Submissions on the Motion(s)		330		0.00		
Attendance at Hearing on Motion(s)		330		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		0.00		
Prepare Submissions on Confidentiality		330		0.00		
Attendance at Hearing on Confidentiality		330		0.00		
DECISION						
Review		330		0.00		
RATE ORDER						
Review		330		0.00		
Prepare Submission on Rate Order		330		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	3.75		1,237.50	0.00		1,237.50

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Napoleon CV_20230712.pdf	CV	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Napoleon_TimeDocket s_20230712.pdf	Time Docket	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Napoleon CV_20230712.pdf	CV	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Napoleon_TimeDocket s_20230712.pdf	Time Docket	Hearings	

4. Booked Time by Milestone ASH

Milestone ↑	Resource ↑	Level	January 2023		February 2023		March 2023		April 2023		May 2023		June 2023		Total	
			Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount
Interrogatory responses	Alice Napolitan	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	2.75	\$907.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	19.75	\$6,517.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0.00
	Tim Wolff	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0.5	\$165.00
Preparation for oral hearing	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0.25	\$82.50
	Asa Hopkins	Analyst 20+	330	0.5	\$165.00	10.75	\$3,547.50	0	0	0	0	0	0	0	11.25	\$3,712.50
	Sol DeLeon	Analyst 20+	330	0	0	0	\$825.00	0	0	0	0	0	0	0	0	\$0.00
	Paul Rhodes	Analyst 20+	170	0	\$1,800.00	0	\$2,250.00	0	0	0	0	0	0	0	2.5	\$825.00
Preparation of interview or evidence	Alice Napolitan	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	12.98	\$4,283.40
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0.00
	Sol DeLeon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0.00
	Paul Rhodes	Analyst 20+	170	0	\$1,800.00	0	\$2,250.00	0	0	0	0	0	0	0	0	\$0.00
Review application and evidence	Alice Napolitan	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	12.98	\$4,283.40
	Asa Hopkins	Analyst 20+	330	1	\$330.00	0	\$2,475.00	5.48	\$1,642.50	0	0	0	0	0	0	\$0.00
	Asa Hopkins	Analyst 20+	330	1.25	\$412.50	0	\$495.00	0	0	0	0	0	0	0	1	\$330.00
	Sol DeLeon	Analyst 20+	330	0	\$247.50	0	\$0.00	0	0	0	0	0	0	0	0.75	\$247.50
Review interrogatory responses	Tyler Fitch	Analyst 6-10	230	1	\$230.00	0	\$0.00	0	0	0	0	0	0	0	1	\$0.00
	Asa Hopkins	Analyst 20+	330	0	0	0	\$0.00	0	0	0	0	0	0	0	2	\$660.00
Total			11.5	\$3,455.00	29.25	\$9,652.50	83.75	\$9,070.00	19	\$26,517.50	30	\$9,900.00	0.25	\$82.50	42.95	\$25,776.80

Alice Napoleon, Principal Associate

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Principal Associate*, June 2021 – Present; *Senior Associate*, June 2013 – June 2021; *Associate*, July 2008 – June 2013; *Research Associate*, April 2005 – July 2008.

- Provides expert analysis, ongoing stakeholder support, and consulting services in regulatory proceedings regarding energy efficiency program design and performance, funding and incentive mechanisms, cost-effectiveness screening, potential studies, and plans. Develops and sponsors testimony on electric and natural gas energy efficiency plans, advanced metering infrastructure (AMI) proposals, innovative programs, and regulatory structures.
- Researches policies and practices regarding ratemaking for energy efficiency, power procurement, risk management, and fuel diversity.
- Managed efforts by Synapse and subcontractors to conduct a sweeping study of the disparate impacts of electric and natural gas infrastructure on economic, social, and health outcomes, and options for improving energy equity. Conducted interviews and oversaw research, including a literature review, web meetings, and several case studies.
- Conducted extensive research on low-income energy efficiency efforts in U.S. states. Analyzed energy burden differences by income level and across factors that can impact participation in and efficacy of energy efficiency programs in order to inform program design and targeting efforts. Provided consulting services and testimony on low-income energy efficiency programs and proposals.
- Led development of a cost-effectiveness tool, program designs, and case studies to facilitate incorporating strategic energy management programs into energy efficiency program portfolios for commercial and industrial customers.
- Designed research approach and managed team that conducted a sweeping analysis of energy efficiency potential studies from utilities, states, and regions across the U.S.
- Conducted research and co-authored reports on efforts to increase resilience of the electric system, including emerging regulatory mechanisms. Designed survey instrument and oversaw interviews.
- Facilitated residential, commercial, and industrial policy working groups and managed technical analysis of working group recommendations to reduce greenhouse gas (GHG) emissions in Colorado, South Carolina, and Maryland.

Resource Insight, Inc., Arlington, MA. *Research Assistant*, 2003-2005.

Responsible for conducting research and analysis of electric, gas, steam, and water resource issues. Conducted discounted cash flow analysis for asset valuation. Developed market-price benchmarks for analysis of power-supply bids including energy, capacity, ancillary services, transmission, ISO services, losses, and adjustment for load shape. Prepared discovery responses, formal objections, comments, and testimony; collaboratively wrote and edited reports; created and formatted exhibits. Participated in drafting an Energy Plan for New York City. Edited solicitation for competitive power supply to serve aggregated municipal load.

University of Massachusetts, Amherst, MA. *Teaching Assistant*, 2001-2002.

Developed and taught lessons on applied math to a diverse group of incoming graduates; tutored students in microeconomic theory and cost benefit analysis; graded problem sets and memoranda.

International Council for Local Environmental Initiatives, Berkeley, CA. *Cities for Climate Protection Intern for the City of Northampton, MA*, 2001.

Compiled primary and secondary source data on energy consumption and solid waste generation by the municipal government, city residents, and businesses; applied emissions coefficients to calculate total GHG emissions; identified current and planned municipal policies that impact GHG emissions; researched the predicted local effects of global warming; gathered public feedback to provide acceptable and proactive policy alternatives. Composed a GHG emissions inventory describing research findings; wrote and distributed a policy report and press releases; gave newspaper and radio interviews; addressed public officials and the public during a televised meeting.

University of Massachusetts, Amherst, MA. *Research Assistant*, 2000-2001.

Located federal data sources, identified changes, and updated a research database to evaluate the Habitat Conservation Program; proofread articles and white papers; composed a literature review on land use modelling. Collaboratively administered, tested, and proposed interface enhancements for a web-based data warehouse of regional habitat change research; formally presented the system to an independent research group.

Court Square Data Group, Inc., Springfield, MA. *Administration Manager*, 1998-2000; *Project Administrator*, 1996-1998.

As Administration Manager, analysed profitability and diversity of income sources; managed cash flow, expense, and income data; created budgets; devised and implemented procedures to increase administrative efficiency; implemented new accounting system with minimal disruption to workflow.

As Project Administrator, coordinated implementation of software features; identified opportunities for future development; monitored problem resolution; wrote and coordinated production of a user's manual and questionnaires; edited technical proposals and a business plan.

EDUCATION

University of Massachusetts, Amherst, MA
Master of Public Administration, 2002

Rutgers University, New Brunswick, NJ
Bachelor of Arts in Economics, 1995

Syracuse University, Syracuse, NY, 1994

PUBLICATIONS

Hopkins, A. S., A. Napoleon, K. Schultz. 2023. *The High Cost of New York Gas Utilities' Leak- Prone Pipe Replacement Programs*. Synapse Energy Economics for Natural Resources Defense Council.

Hopkins, A. S., A. Napoleon, J. Litynski, K. Takahashi, J. Frost, S. Kwok. 2022. *Climate Policy for Maryland's Gas Utilities: Financial Implications*. Synapse Energy Economics for Maryland Office of the People's Counsel.

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Kallay, J., A. Napoleon, K. Takahashi, E. Sinclair, T. Woolf. 2021. *Opportunities for Evergy Kansas to Address Energy Equity Within its Integrated Resource Plan and Other Planning Processes*. Synapse Energy Economics for Union of Concerned Scientists.

Takahashi, K., E. Sinclair, A. Napoleon, A. Hopkins, D. Goldberg. 2021. *Evaluation of EnergyWise Low-Income Energy Efficiency Program in Mississippi – Program Performance, Design, and Implications for Low-Income Efficiency Programs*. Synapse Energy Economics for Sierra Club and Gulf Coast Community Foundation.

Kallay, J., A. Napoleon, J. Hall, B. Havumaki, A. Hopkins, M. Whited, T. Woolf, J. Stevenson, R. Broderick, R. Jeffers, B. Garcia. 2021. *Regulatory Mechanisms to Enable Investments in Electric Utility Resilience*. Synapse Energy Economics for Sandia National Laboratories.

Kallay, J., A. Napoleon, B. Havumaki, J. Hall, C. Odom, A. Hopkins, M. Whited, T. Woolf, M. Chang, R. Broderick, R. Jeffers, B. Garcia. 2021. *Performance Metrics to Evaluate Utility Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

Hopkins, A., S. Kwok, A. Napoleon, C. Roberto, K. Takahashi. 2021. *Scoping a Future of Gas Study*. Synapse Energy Economics for Conservation Law Foundation.

Kallay, J., A. Hopkins, A. Napoleon, B. Havumaki, J. Hall, M. Whited, M. Chang., R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *The Resilience Planning Landscape for Communities and Electric Utilities*. Synapse Energy Economics for Sandia National Laboratories.

Napoleon, A., E. Camp, S. Letendre, E. Sinclair. 2021. *Synapse Comments on the Pennsylvania Public Utility Commission on the Utilization of Storage Resources as Electric Distribution Assets - Docket No. M-2020-3022877*. Synapse Energy for the National Resources Defense Council.

Hopkins, A. S., A. Napoleon, K. Takahashi. 2020. *Gas Regulation for a Decarbonized New York: Recommendations for Updating New York Gas Utility Regulation*. Synapse Energy Economics for Natural Resources Defense Council.

Takahashi, K., A. Napoleon. 2020. *Synapse Comments on EfficiencyOne Performance Alignment Study - M09096*. Questions and comments regarding the EfficiencyOne Performance Alignment Study filed on April 21, 2020. Synapse Energy Economics for the Nova Scotia Utility and Review Board.

Napoleon, A., J. Hall, J. Kallay, M. Chang, P. Eash-Gates, N. L. Seidman, C. James, D. Torre, D. Brutkoski, J. Migden-Ostrander, K. Colburn, K. Maddux, D. Harlow, M. Power. 2020. *Energy Infrastructure: Sources of Inequities and Policy Solutions for Improving Community Health and Wellbeing*. Synapse Energy Economics, Regulatory Assistance Project, and Community Action Partnership for the Robert Wood Johnson Foundation.

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Kallay, J., A. Hopkins, J. Frost, A. Napoleon, K. Takahashi, J. Slason, G. Freeman, D. Grover, B. Swanson. 2019. *Net Zero Energy Roadmap for the City of Burlington, Vermont*. Synapse Energy Economics and Resource Systems Group for Burlington Electric Department.

Napoleon, A., T. Woolf, K. Takahashi, J. Kallay, B. Havumaki. 2019. *Comments in the New York Public Service Commission Case 18-M-0084: In the Matter of a Comprehensive Energy Efficiency Initiative*. Comments related to NY Utilities report regarding energy efficiency budgets and targets, collaboration,

heat pump technology, and low- and moderate-income customers and requests for approval. Prepared by Synapse Energy Economics on behalf of Natural Resources Defense Council.

Allison, A., A. Napoleon, J. Kallay. 2019. *Maine Low-Income Home Energy Burden Study*. Synapse Energy Economics for the Maine Office of the Public Advocate.

Napoleon, A., D. Goldberg, K. Takahashi, T. Woolf. 2019. *An Assessment of Prince Edward Island Energy Corporations' 2018 - 2021 Energy Efficiency and Conservation Plan*. Synapse Energy Economics for Carr, Stevenson and MacKay as Counsel to the Island Regulatory and Appeals Commission.

Takahashi, K., A. Napoleon. 2018. *Synapse Comments on EfficiencyOne's 2019 Rate and Bill Impact Analysis and Model - M09471*. Comments regarding the revised 2019 Rate and Bill Impact Analysis filed by EfficiencyOne on November 1, 2019. Synapse Energy Economics for the Nova Scotia Utility and Review Board.

Camp, E., B. Fagan, J. Frost, D. Glick, A. Hopkins, A. Napoleon, N. Peluso, K. Takahashi, D. White, R. Wilson, T. Woolf. 2018. *Phase 1 Findings on Muskrat Falls Project Rate Mitigation*. Synapse Energy Economics for Board of Commissioners of Public Utilities, Province of Newfoundland and Labrador.

Hall, J., J. Kallay, A. Napoleon, K. Takahashi, M. Whited. 2018. *Locational and Temporal Values of Energy Efficiency and other DERs to Transmission and Distribution Systems*. Synapse Energy Economics.

Ackerman, F., S. Fields, A. Napoleon, D. Bhandari. 2018. *Can Clean Energy Replace California Oil Production: Petroleum cutbacks and the California economy*. Synapse Energy Economics for the 11th Hour Project.

White, D., K. Takahashi, A. Napoleon, T. Woolf. 2018. *Value of Energy Efficiency in New York: Assessment of the Range of Benefits of Energy Efficiency Programs*. Synapse Energy Economics for Natural Resources Defense Council.

Woolf, T., A. Hopkins, M. Whited, K. Takahashi, A. Napoleon. 2018. *Review of New Brunswick Power's 2018/2019 Rate Case Application*. In the Matter of the New Brunswick Power Corporation and Section 103(1) of the Electricity Act Matter No. 375. Prepared by Synapse Energy Economics for the New Brunswick Energy and Utilities Board Staff.

Fagan, B., A. Napoleon, S. Fields, P. Luckow. 2017. *Clean Energy for New York: Replacement Energy and Capacity Resources for the Indian Point Energy Center Under New York Clean Energy Standard (CES)*. Synapse Energy Economics for Riverkeeper and Natural Resources Defense Council.

Kallay, J., A. Napoleon, M. Chang. 2016. *Opportunities to Ramp Up Low-Income Energy Efficiency to Meet States and National Climate Policy Goals*. Synapse Energy Economics.

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Napoleon, A., K. Takahashi, J. Kallay, T. Woolf. 2016. "Evaluation, Measurement, and Verification in Virginia." Memorandum prepared by Synapse Energy Economics for Clean Energy Solutions Inc., Virginia Energy Efficiency Council, and Virginia Department of Mines, Minerals and Energy.

Woolf, T., A. Napoleon, M. Whited. 2015-2016. *Comments and Reply Comments in the New York Public Service Commission Case 14-M-0101: Reforming the Energy Vision*. Comments related to Staff's (a) a benefit-costs analysis framework white paper, (b) ratemaking and utility business models white paper, and (c) Distributed System Implementation Plan guide. Prepared by Synapse Energy Economics on behalf of Natural Resources Defense Council and Pace Energy and Climate Center.

Kallay, J., K. Takahashi, A. Napoleon, T. Woolf. 2015. *Fair, Abundant, and Low-Cost: A Handbook for Using Energy Efficiency in Clean Power Plan Compliance*. Synapse Energy Economics for the Energy Foundation.

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Biewald, B., J. Daniel, J. Fisher, P. Luckow, A. Napoleon, N. R. Santen, K. Takahashi. 2015. *Air Emissions Displacement by Energy Efficiency and Renewable Energy*. Synapse Energy Economics.

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Napoleon, A., D. Schlissel. 2009. *Economic Impacts of Restricting Mountaintop/Valley Fill Coal Mining in Central Appalachia*. Synapse Energy Economics for Sierra Club, and Appalachian Center for the Economy and the Environment.

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Napoleon, A., G. Keith, C. Komanoff, D. Gutman, P. Silva, D. Schlissel, A. Sommer, C. Chen, A. Roschelle, J. Levy, P. Kinney. 2007. *Quantifying and Controlling Fine Particulate Matter in New York City*. Synapse Energy Economics for Coalition Helping Organize a Kleaner Environment, Natural Resources Defense Council (NRDC), Reliant Energy.

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Hausman, E., R. Fagan, D. White, K. Takahashi, A. Napoleon. 2007. *LMP Electricity Markets: Market Operations, Market Power, and Value for Consumers*. Synapse Energy Economics for American Public Power Association.

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Steinhurst, W., A. Napoleon, K. Takahashi. 2006. *Energy in the Northern Forest Region: A Situation Analysis*. Synapse Energy Economics for Northern Forest Center and The North Country Council.

Synapse Energy Economics. 2006. *Ensuring Delaware's Energy Future: A Response to Executive Order Number 82*. Synapse Energy Economics for Delaware Public Service Commission Staff by the Delaware Cabinet Committee on Energy and others.

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TESTIMONY

New York Public Utilities Commission (Case No. 22-E-0064 and 22-G-0065): Direct and Rebuttal Testimony of Alice Napoleon and Asa Hopkins regarding Con Edison's proposed gas-side investments as greenhouse gas mitigation strategies and gas extension allowance rule changes and the need for long-term planning for the gas system and adequacy of the company's non-pipe alternatives framework. On behalf of Natural Resources Defense Council, May 2022.

Nova Scotia Utility and Review Board (M10473): Evidence of Alice Napoleon and Kenji Takahashi regarding EfficiencyOne's 2023-2025 DSM Resource Plan, with a focus on the Settlement Plan. On behalf of Counsel to Nova Scotia Utility and Review Board, May 2022.

Pennsylvania Public Utility Commission (Docket No. M-2020-3020824): Revised Direct Testimony of Alice Napoleon and Kenji Takahashi regarding PPL Electric Utilities' proposed Act 129 Phase IV Energy Efficiency and Conservation. On behalf of the Natural Resources Defense Council. January 19, 2021.

Pennsylvania Public Utility Commission (Docket No. M-2020-3020830): Direct testimony of Alice Napoleon and Courtney Lane regarding PECO Energy Company's proposed Act 129 Phase IV Energy Efficiency and Conservation Plan. On behalf of the natural Resources Defense Council. January 14, 2021.

Nova Scotia Utility and Review Board (Matter No. M09519): Evidence of Alice Napoleon regarding Nova Scotia Power's Smart Grid Nova Scotia Project proposal. On behalf of Counsel to the Nova Scotia Utility and Review Board. February 19, 2020.

New York Public Service Commission (Cases 20-E-0380 and 20-G-0381): Direct testimony of Alice Napoleon and Kenji Takahashi regarding proposed earnings adjustment mechanisms in a proceeding on Rates, Charges, Rules, and Regulations related to Niagara Mohawk Power Corporation d/b/a National Grid for Electric Service and National Grid for Gas Service. On behalf of the Natural Resources Defense Council. November 25, 2020.

California Public Utilities Commission (Application Nos. 19-11-003, 19-11-004, 19-11-005, 19-11-006): Prepared Testimony of Alice Napoleon addressing proposals of Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company related to the Energy Savings Assistance (ESA) Program and Budgets for Program Years 2021-2026. On behalf of The Utility Reform Network. September 4, 2020.

California Public Utilities Commission (Application Nos. 19-11-003, 19-11-004, 19-11-005, 19-11-006, 19-11-007): Comments of The Utility Reform Network on the Energy Division Staff Proposal and Utility Applications. On behalf of The Utility Reform Network. July 24, 2020.

Nova Scotia Utility and Review Board (Matter No. M09096): Evidence of Alice Napoleon regarding EfficiencyOne's 2020-2022 DSM Plan. On behalf of Counsel to the Nova Scotia Utility and Review Board. May 28, 2019.

New York Public Service Commission (Cases 19-E-0065 and 19-G-0066): Direct testimony of Tim Woolf and Alice Napoleon regarding energy efficiency targets and incentives in Con Edison rate case. On behalf of the Natural Resources Defense Council. May 24, 2019.

Nova Scotia Utility and Review Board (Matter No. M08604): Evidence of Alice Napoleon regarding the 2019 Demand Side Management Resource Plan. On behalf of Counsel to the Nova Scotia Utility and Review Board. June 13, 2018.

Nova Scotia Utility and Review Board (Matter No. M08349): Evidence of Alice Napoleon regarding Nova Scotia Power's Advanced Meter Infrastructure Proposal. On behalf of Counsel to the Nova Scotia Utility and Review Board. January 18, 2018.

Nova Scotia Utility and Review Board (Case No. M07767): Direct evidence in the matter of the Nova Scotia Power Advanced Meter Infrastructure Pilot. On behalf of Counsel to the Nova Scotia Utility and Review Board. February 16, 2017.

Public Service Commission of South Carolina (Docket No. 2016-223-E): Direct Testimony of Alice Napoleon regarding South Carolina Electric and Gas Energy Efficiency Efforts. On behalf of South Carolina Coastal Conservation League. September 1, 2016.

Nova Scotia Utility and Review Board (Case No. M06247): Direct evidence in the matter of an application by Efficiency Nova Scotia Corporation for approval of its electricity demand-side management plan for 2015. On behalf of Counsel to the Nova Scotia Utility and Review Board. July 14, 2014.

TESTIMONY ASSISTANCE

Public Service Commission of South Carolina (Docket No. 2017-2-E): Direct Testimony of Thomas Vitolo, PhD regarding Avoided Cost Calculations and the Costs and Benefits of Solar Net Energy Metering for South Carolina Electric & Gas Company. On behalf of South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. March 22, 2017.

State of New Jersey Board of Public Utilities (Docket No. ER16060524): Direct testimony of Tim Woolf regarding the Petition of Rockland Electric Company for Approval of an Advanced Metering Program, and for Other Relief. On behalf of New Jersey Division of the Ratepayer Advocate. September 9, 2016.

Nova Scotia Utility and Review Board (Matter No. M06733): Direct testimony of Tim Woolf regarding EfficiencyOne's 2016-2018 demand-side management plan. On behalf of the Nova Scotia Utility and Review Board. June 2, 2015.

Missouri Public Service Commission (File No. EO-2015-0055): Rebuttal and surrebuttal of Tim Woolf on the topic of Ameren Missouri's 2016-2018 Energy Efficiency Plan. On behalf of Sierra Club. March 20, 2015 and April 27, 2015.

State of New Jersey Board of Public Utilities (Docket No. EO14080897): Direct testimony of Kenji Takahashi regarding the Petition of Public Service Electric & Gas Company to continue its Energy Efficiency Economic Extension Program on a Regulated Basis (EEE Extension II). On behalf of New Jersey Division of the Ratepayer Advocate. November 7, 2014.

Kentucky Public Service Commission (Case No. 2014-00003): Direct testimony of Tim Woolf regarding Louisville Gas and Electric Company and Kentucky Utilities Company's proposed 2015-2018 demand-side

management and energy efficiency program plan. On behalf of Wallace McMullen and the Sierra Club. April 14, 2014.

State of New Jersey Board of Public Utilities (Docket No. GO12050363): Direct testimony of Maximilian Chang regarding South Jersey Gas Company's proposal to extend and modify its energy-efficiency programs. On behalf of New Jersey Division of the Ratepayer Advocate. November 9, 2012.

State of New Jersey Board of Public Utilities (Docket No. GO12070640): Direct testimony of Robert Fagan regarding New Jersey Natural Gas Company's petition for approval of the extension of the SAVEGREEN energy efficiency programs. On behalf of the New Jersey Division of the Ratepayer Advocate. October 26, 2012.

State of New Jersey Board of Public Utilities (Docket No. GO11070399): Direct testimony of Robert Fagan regarding Elizabethtown Gas Company's Proposed Energy Efficiency Program. On behalf of New Jersey Division of the Ratepayer Advocate. December 16, 2011.

State of New Jersey Board of Public Utilities (Docket No. GR11070425): Direct testimony of Robert Fagan regarding New Jersey Natural Gas Company's petition for approval of the extension of the SAVEGREEN energy efficiency programs. On behalf of the New Jersey Division of the Ratepayer Advocate. November 16, 2011.

State of New Jersey Board of Public Utilities (Docket No. GR10030225): Direct testimony of David Nichols regarding New Jersey Natural Gas Company's Proposed Energy Efficiency Program. On behalf of New Jersey Division of the Ratepayer Advocate. July 9, 2010.

Virginia State Corporation Commission (Case No. PUE-2009-00097): Direct testimony of William Steinhurst regarding Appalachian Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq. On behalf of the Southern Environmental Law Center, Chesapeake Climate Action Network, Appalachian Voices, and the Virginia Chapter of The Sierra Club. March 23, 2010.

Delaware Public Service Commission (Docket No. 07-20): Jointly authored an expert report, with Robert Fagan, William Steinhurst, David White, and Kenji Takahashi, In the Matter of Integrated Resource Planning for the Provision of Standard Offer Service by Delmarva Power & Light Company Under 26 DEL. C. §1007 (c) & (d). On behalf of the Staff of Delaware Public Service Commission. April 2, 2009.

State of New Jersey Board of Public Utilities (BPU Docket EM05020106): Direct and surrebuttal testimony of Bruce Biewald, Robert Fagan, and David Schlissel regarding the Joint Petition Of Public Service Electric and Gas Company And Exelon Corporation For Approval of a Change in Control Of Public Service Electric and Gas Company And Related Authorizations. On behalf of New Jersey Division of the Ratepayer Advocate. November 14, 2005 and December 27, 2005.

Illinois Commerce Commission (Dockets 05-0160, 05-0161, 05-0162): Direct testimony of William Steinhurst regarding Ameren's proposed competitive procurement auction (CPA). On behalf of Illinois Citizens Utility Board. June 15, 2005 and August 10, 2005.

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Resume updated March 2023

Sol Deleon

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Sol	NON-FILING PARTICIPANT L. NAME Deleon
SERVICE PROVIDER TYPE* Analyst	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 20	HOURLY RATE 330
HST RATE CHARGED* 0.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
17.23	5,685.90	0.00	5,685.90			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	0.75	330	247.50	0.00		247.50
DISCOVERY						
Preparation of Interrogatories	2.50	330	825.00	0.00		825.00
Review Interrogatory Responses		330		0.00		
Technical Conference Preparation		330		0.00		
Technical Conference Attendance		330		0.00		
Technical Conference Follow Up		330		0.00		
ISSUES LIST						
Preparation		330		0.00		
Attendance at Issues Conference		330		0.00		
INTERVENOR EVIDENCE						
Preparation	12.98	330	4,283.40	0.00		4,283.40
Interrogatory Responses	1.00	330	330.00	0.00		330.00
Preparation of Witness(es) for Attendance at Hearing		330		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		0.00		
Attendance		330		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		0.00		
Attendance at Presentation to Panel		330		0.00		
ORAL HEARING						
Preparation		330		0.00		
Attendance at Oral Hearing		330		0.00		
SUBMISSIONS						
Written Submissions		330		0.00		
Oral Submissions		330		0.00		
Attendance at Oral Submissions		330		0.00		
OTHER ATTENDANCE						
Other Attendance		330		0.00		
COMMUNICATION						
With Client		330		0.00		
With Other Parties		330		0.00		
MOTIONS						
Preparation of Motion(s) Materials		330		0.00		
Prepare Submissions on the Motion(s)		330		0.00		
Attendance at Hearing on Motion(s)		330		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		0.00		
Prepare Submissions on Confidentiality		330		0.00		
Attendance at Hearing on Confidentiality		330		0.00		
DECISION						
Review		330		0.00		
RATE ORDER						
Review		330		0.00		
Prepare Submission on Rate Order		330		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	17.23		5,685.90	0.00		5,685.90

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_deleon CV_20230712.pdf	CV	
IGUA_EB-2022-0200_Interim CostClaim_deleon_TimeDockets_20230712. pdf	Time Docket	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_deleon CV_20230712.pdf	CV	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_deleon_TimeDockets_20230712. .pdf	Time Docket	Hearings	

4. Booked Time by Milestone ASH

Milestone ↑	Resource ↑	Level	January 2023		February 2023		March 2023		April 2023		May 2023		June 2023		Total	
			Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount
Interrogatory responses	Alice Napoleon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	2.75	\$907.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	19.75	\$6,517.50
	Tim Wolff	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Tim Wolff	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0.5	\$165.00
Preparation for oral hearing	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0.25	\$82.50
	Asa Hopkins	Analyst 20+	330	0.5	0	0	0	0	0	0	0	0	0	0	0.25	\$82.50
	Asa Hopkins	Analyst 20+	330	0	10.75	0	0	0	0	0	0	0	0	0	11.25	\$3,712.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
Preparation of interview or evidence	Asa Hopkins	Analyst 20+	330	0	2.5	0	0	0	0	0	0	0	0	0	2.5	\$825.00
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Paul Rhodes	Analyst 20+	170	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Paul Rhodes	Analyst 20+	170	0	0	0	0	0	0	0	0	0	0	0	0	\$0
Review application and evidence	Alice Napoleon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Asa Hopkins	Analyst 20+	330	1	0	0	0	0	0	0	0	0	0	0	0	\$0
	Asa Hopkins	Analyst 20+	330	1.25	0	0	0	0	0	0	0	0	0	0	1	\$330.00
	Asa Hopkins	Analyst 20+	330	0	1.5	0	0	0	0	0	0	0	0	0	2.75	\$907.50
Review interrogatory responses	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Asa Hopkins	Analyst 20+	330	0.75	0	0	0	0	0	0	0	0	0	0	0.75	\$247.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	\$0
Total			11.5	\$3,455.00	29.25	\$9,652.50	83.75	\$5,070.00	19	\$5,900.00	30	\$9,900.00	0.25	\$82.50	12.98	\$4,283.40

Dr. Maria Soledad (Sol) deLeon, D.L.S., Principal Associate

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-453-7023
sdeleon@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Principal Associate*, January 2023 – Present

- Analyzes gas utility applications, as well as studies, reports and other evidence regarding gas utility investments, business models, ratemaking, depreciation, revenue requirements, and business risk.

WGL Holdings (Washington Gas) Washington D.C. *Manager, Strategy & Innovation*, December 2019 – December 2022, *Manager, Strategy & Business Development*, March 2017 – December 2019

- Defined and successfully proposed GHG emission reduction targets. Project managed development and completion of regulator-required climate strategy reports, involving external consultants and internal subject matter experts.
- Established and implemented a governance process for strategic initiatives. Created templates for business plans, project charters, and status updates for proposed strategic projects.
- Established information capture process for regulatory and executive reporting of emission reduction initiatives, including status of budget, scope, schedule, and projected benefits.

AES Corporation, Arlington, VA. *Risk Manager*, January 2009 – January 2016, *Project Manager, Wind Development*, April 2008 – December 2008, *Risk Analyst*, March 2006 – March 2008

- Managed global Hydrology Risk Committee quantifying risks and reporting to executive leaders on hydrology and climate mitigation strategy to reduce impact on initiatives and earnings projections.
- Streamlined process for derivatives valuation and audit support, reducing quarterly reporting preparation by 400% and saving 10,000+ labor hours. Managed derivative approval process for projects in Latin America, and Asia.
- Supported business development and negotiations for greenfield wind farms and project pipelines by building and maintaining financial models.
- Mapped South American and Asian subsidiaries' structures and cash flows to identify material risks and develop interest rate and foreign exchange hedging strategies protecting enterprise value.
- Developed valuation models for futures, forwards and options for power, commodity, FX, and interest rate; identified and evaluated transaction risks, and performed ad hoc market risk analysis.

Energy and Environment Analysis, Inc., Arlington, VA. *Energy Analysis*, August 2002– March 2006

- Built first-ever demand forecasting model of U.S. propane industry, fundamentally changing strategic decision-making across the propane industry.

PG&E National Energy Group, Bethesda, MD. *Intern, Asset Management*, June 2001– December 2001

- Fixed financial models for power plant valuations and financial models for 5,000-megawatt contract portfolio; corrected errors in 5 critical models which were reinstituted for internal forecasting and reporting.

Trans Asia Power, Manila, Philippines, *Senior Project Analyst, Business Development*, March 1997 – August 2000

- Employee #4 of energy start-up. Identified projects for development. Company representative in nationwide launch of electricity spot market, implemented in company and trained other users.

EDUCATION

Georgetown University, Washington, D.C.

Doctorate in Liberal Studies, Energy Transition and Energy Justice

Master of Business Administration, McDonough School of Business

Ateneo de Manila University, Quezon City, Philippines

Bachelor of Science, Management Engineering, AB Economics

Resume updated March 2023

Paul Rhodes

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Paul	NON-FILING PARTICIPANT L. NAME Rhodes
SERVICE PROVIDER TYPE* Analyst	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 5	HOURLY RATE 170
HST RATE CHARGED* 0.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours 23.75	Hearings Subtotal (\$) 4,037.50	Hearings Total Tax (\$) 0.00	Hearings Total (\$) 4,037.50			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	11.75	170	1,997.50	0.00		1,997.50
DISCOVERY						
Preparation of Interrogatories		170		0.00		
Review Interrogatory Responses		170		0.00		
Technical Conference Preparation		170		0.00		
Technical Conference Attendance		170		0.00		
Technical Conference Follow Up		170		0.00		
ISSUES LIST						
Preparation		170		0.00		
Attendance at Issues Conference		170		0.00		
INTERVENOR EVIDENCE						
Preparation	12.00	170	2,040.00	0.00		2,040.00
Interrogatory Responses		170		0.00		
Preparation of Witness(es) for Attendance at Hearing		170		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		170		0.00		
Attendance		170		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		170		0.00		
Attendance at Presentation to Panel		170		0.00		
ORAL HEARING						
Preparation		170		0.00		
Attendance at Oral Hearing		170		0.00		
SUBMISSIONS						
Written Submissions		170		0.00		
Oral Submissions		170		0.00		
Attendance at Oral Submissions		170		0.00		
OTHER ATTENDANCE						
Other Attendance		170		0.00		
COMMUNICATION						
With Client		170		0.00		
With Other Parties		170		0.00		
MOTIONS						
Preparation of Motion(s) Materials		170		0.00		
Prepare Submissions on the Motion(s)		170		0.00		
Attendance at Hearing on Motion(s)		170		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		170		0.00		
Prepare Submissions on Confidentiality		170		0.00		
Attendance at Hearing on Confidentiality		170		0.00		
DECISION						
Review		170		0.00		
RATE ORDER						
Review		170		0.00		
Prepare Submission on Rate Order		170		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	23.75		4,037.50	0.00		4,037.50

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Rhodes_TimeDockets_20230712.pdf	Time Docket	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Rhodes CV_20230712.pdf	CV	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Rhodes_TimeDockets_20230712.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Rhodes CV_20230712.pdf	CV	Hearings	

4. Booked Time by Milestone ASH

Milestone ↑	Resource ↑	Level	January 2023		February 2023		March 2023		April 2023		May 2023		June 2023		Total	
			Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount
Interrogatory responses	Alice Napodon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tim Wilson	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Tim Wolff	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
Preparation for oral hearing	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Asa Hopkins	Analyst 20+	330	0.5	0	0	0	0	0	0	0	0	0	0	0.25	0
	Soi DeLeon	Analyst 20+	330	0	10.75	\$3,547.50	0	0	0	0	0	0	0	0	0	\$3,712.50
	Soi DeLeon	Analyst 20+	330	0	2.5	\$825.00	0	0	0	0	0	0	0	0	0	\$825.00
Preparation of interview or evidence	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soi DeLeon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soi DeLeon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soi DeLeon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
Review application and evidence	Alice Napodon	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Asa Hopkins	Analyst 20+	330	1.25	\$412.50	0	0	0	0	0	0	0	0	0	0	\$412.50
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
	Soi DeLeon	Analyst 20+	330	0.75	\$247.50	0	0	0	0	0	0	0	0	0	0	\$247.50
Review interrogatory responses	Tyler Fitch	Analyst 6-10	230	1	0	0	0	0	0	0	0	0	0	0	0	0
	Asa Hopkins	Analyst 20+	330	0	0	0	0	0	0	0	0	0	0	0	0	0
Total			11.5	\$3,455.00	29.25	\$9,652.50	83.75	\$26,537.50	19	\$5,900.00	30	\$5,070.00	0.25	\$42.50	12.98	\$4,283.40

Paul Rhodes III, Associate

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-849-8017
prhodes@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics, Inc., Cambridge, MA. *Associate*, April 2023 – Present; *Research Associate*, May 2022 – April 2023

- Performs quantitative and qualitative research and analysis on energy-sector issues including energy efficiency and building decarbonization, the future of natural gas, energy justice, electric vehicles, and rate design and utility regulation.
- Analyzes the emissions, peak load, and economic impacts of building and transportation electrification on the electric distribution grid.
- Conducts analysis with capacity expansion and production cost models to simulate future electric grid scenarios.
- Evaluates gas utility climate and energy transition plans for consistency with jurisdictional requirements and carbon reductions targets.
- Co-developed utility Strategic Transition Model to quickly assess the utility and ratepayer implications of large-scale strategic transition in the gas utility business model.
- Assists in expert testimony development and reports related to rate design and utility regulation.

kW Engineering, Salt Lake City, UT. *Engineer*, May 2021 – April 2022, *Consultant*, September 2019 – May 2021, *Intern*, May 2019 – September 2019

- Provided energy efficiency and peak shaving solutions to commercial customers across the Intermountain West within the PacifiCorp Demand-Side Management program.
- Assisted customers with meeting their electrification and decarbonization goals by analyzing feasibility of variable refrigerant flow heat pumps in buildings.
- Identified and modelled various energy efficiency measures relating to building heating, ventilation, air-conditioning, and refrigeration systems.
- Measured and verified energy efficiency measures to ensure proper installation and operation that would achieve projected energy and cost savings.

EDUCATION

Southern Utah University, Cedar City, UT: B.S. in Engineering (emphasis in Civil Engineering), 2021

- Senior Project: *Complete Streets of Cedar City*
- Engineer-in-Training Certification

SKILLS

- EnCompass power sector planning software
- Benefit-Cost Analysis
- Rate and Bill Impact Analysis
- Microsoft Office Suite
- SkySpark Analytics

PUBLICATIONS

Metz, L., M. Whited, P. Rhodes, E. Carlson. 2023. *Distribution System Investments to Enable Medium- and Heavy-Duty Vehicle Electrification*. Synapse Energy Economics for the Environmental Defense Fund.

Forthcoming. Takahashi, K., A. Hopkins, J. Smith, P. Rhodes. 2023. *Analysis of the Impacts of Electrification on Electric Distribution System Peak Loads in Maryland: Toward Net Zero Emissions from Maryland's Building and Transportation Sectors*. Synapse Energy Economics for Maryland Office of People's Counsel.

Napoleon, A., O. Griot, P. Rhodes, M. Whited. 2023. *Options for Providing Low Income Customer Support*. Synapse Energy Economics for New Mexico Office of the Attorney General.

Woolf, T., D. Goldberg, E. Borden, P. Rhodes. 2022. *Distributed Generation Successor Program in Maine*. Synapse Energy Economics for the Maine Governor's Energy Office and the Distributed Generation Stakeholder Group.

Takahashi, K., E. Sinclair, S. Chavin, E. Carlson, S. Sharaf, P. Rhodes, A. Hopkins. 2023. *Decarbonization Initiatives by Governments, Utilities, and Other Entities in the United States and Europe*. Synapse Energy Economics for the Central Research Institute of Electric Power Industry.

Kwok, S., P. Knight, J. Frost, S. Chavin, P. Rhodes. 2023. *Modeling the Benefits of Energy Storage in Maryland*. Synapse Energy Economics for American Clean Power Association.

Havumaki, B., A. Lawton, P. Rhodes, M. Whited. 2023. *Expert Report of Synapse Energy Economics, Inc. In Response to the Proposals of New Brunswick Power in Matter 529*. Synapse Energy Economics for New Brunswick Energy and Utilities Board.

Havumaki, B., E. Sinclair, P. Rhodes. 2022. *Alameda Solar*. Synapse Energy Economics for Alameda Solar I, LLC.

Taberner, J., S. Chavin, T. Fitch, D. Glick, S. Kwok, P. Rhodes. 2023. *A Clean Energy Portfolio Is Still the Best Option for TVA. Synapse Response to TVA's Environmental Impact Statement and Concentrics's Appendix Q*. Synapse Energy Economics for Sierra Club.

Resume updated June 2023

Sonia Knowlton

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Sonia	NON-FILING PARTICIPANT L. NAME Knowlton
SERVICE PROVIDER TYPE* Articling Student/Paralegal	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE*	HOURLY RATE 100
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Required	LAST CV DATE	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
3.00	300.00	39.00	339.00			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence		100		13.00		
DISCOVERY						
Preparation of Interrogatories		100		13.00		
Review Interrogatory Responses		100		13.00		
Technical Conference Preparation		100		13.00		
Technical Conference Attendance		100		13.00		
Technical Conference Follow Up		100		13.00		
ISSUES LIST						
Preparation		100		13.00		
Attendance at Issues Conference		100		13.00		
INTERVENOR EVIDENCE						
Preparation		100		13.00		
Interrogatory Responses		100		13.00		
Preparation of Witness(es) for Attendance at Hearing		100		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		100		13.00		
Attendance		100		13.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		100		13.00		
Attendance at Presentation to Panel		100		13.00		
ORAL HEARING						
Preparation		100		13.00		
Attendance at Oral Hearing		100		13.00		
SUBMISSIONS						
Written Submissions		100		13.00		
Oral Submissions		100		13.00		
Attendance at Oral Submissions		100		13.00		
OTHER ATTENDANCE						
Other Attendance	3.00	100	300.00	13.00	39.00	339.00
COMMUNICATION						
With Client		100		13.00		
With Other Parties		100		13.00		
MOTIONS						
Preparation of Motion(s) Materials		100		13.00		
Prepare Submissions on the Motion(s)		100		13.00		
Attendance at Hearing on Motion(s)		100		13.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		100		13.00		
Prepare Submissions on Confidentiality		100		13.00		
Attendance at Hearing on Confidentiality		100		13.00		
DECISION						
Review		100		13.00		
RATE ORDER						
Review		100		13.00		
Prepare Submission on Rate Order		100		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	3.00		300.00		39.00	339.00

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	Time Docket	
CostClaim_Knowlton_TimeDocket_20230712.pdf		

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	Time Docket	Hearings	
CostClaim_Knowlton_TimeDocket_20230712.pdf			

July 11, 2022
INVOICE: 19867421

Industrial Gas Users Association
Our Matter: T1029927
EGI Rebasing and IRM Application (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
OTH-ATT	2022-06-13	0.40	Ian Mondrow	Briefing S. Knowlton regarding attendance at EGI rebasing application briefing;
OTH-ATT	2022-06-15	1.00	Ian Mondrow	Review correspondence regarding Stakeholder Conference; briefing note to S. Knowlton regarding attendance and topics to listen for;
OTH-ATT	2022-06-16	2.00	Sonia Knowlton	Attended and took minutes for EGI Stakeholder Conference on Rebasing Application;
OTH-ATT	2022-06-16	1.00	Sonia Knowlton	Prepared summary e-mail from EGI Stakeholder Meeting;
OTH-ATT-0.7 COM-CL-0.2	2022-06-18	0.90	Ian Mondrow	Review <u>EGI materials from Stakeholder Conference and S. Knowlton notes</u> and <u>draft update for IGUA members</u> ;
COM-CL	2022-06-20	0.20	Ian Mondrow	Complete update note to IGUA;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Knowlton, Sonia	3.00
Mondrow, Ian	2.50
Total	5.50

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT Mondrow, Ian; +1 (416) 369-4670 ian.mondrow@gowlingwlg.com	NEW PARTICIPANT No	NON-FILING PARTICIPANT F. NAME	NON-FILING PARTICIPANT L. NAME
SERVICE PROVIDER TYPE* Legal Counsel	YEAR CALLED TO BAR* 1991	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 32	HOURLY RATE 330
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Required	LAST CV DATE	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)		Hearings Total Tax (\$)		Hearings Total (\$)	
572.60	188,958.00		24,564.54		213,522.54	
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	141.40	330	46,662.00	13.00	6,066.06	52,728.06
DISCOVERY						
Preparation of Interrogatories	20.60	330	6,798.00	13.00	883.74	7,681.74
Review Interrogatory Responses	11.90	330	3,927.00	13.00	510.51	4,437.51
Technical Conference Preparation	16.40	330	5,412.00	13.00	703.56	6,115.56
Technical Conference Attendance	32.30	330	10,659.00	13.00	1,385.67	12,044.67
Technical Conference Follow Up	0.50	330	165.00	13.00	21.45	186.45
ISSUES LIST						
Preparation	3.00	330	990.00	13.00	128.70	1,118.70
Attendance at Issues Conference	6.40	330	2,112.00	13.00	274.56	2,386.56
INTERVENOR EVIDENCE						
Preparation	75.70	330	24,981.00	13.00	3,247.53	28,228.53
Interrogatory Responses	27.80	330	9,174.00	13.00	1,192.62	10,366.62
Preparation of Witness(es) for Attendance at Hearing		330		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation	30.10	330	9,933.00	13.00	1,291.29	11,224.29
Attendance	74.30	330	24,519.00	13.00	3,187.47	27,706.47

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal	15.00	330	4,950.00	13.00	643.50	5,593.50
Attendance at Presentation to Panel		330		13.00		
ORAL HEARING						
Preparation	0.40	330	132.00	13.00	17.16	149.16
Attendance at Oral Hearing		330		13.00		
SUBMISSIONS						
Written Submissions	13.20	330	4,356.00	13.00	566.28	4,922.28
Oral Submissions		330		13.00		
Attendance at Oral Submissions		330		13.00		
OTHER ATTENDANCE						
Other Attendance	2.10	330	693.00	13.00	90.09	783.09
COMMUNICATION						
With Client	58.20	330	19,206.00	13.00	2,496.78	21,702.78
With Other Parties	41.90	330	13,827.00	13.00	1,797.51	15,624.51
MOTIONS						
Preparation of Motion(s) Materials		330		13.00		
Prepare Submissions on the Motion(s)		330		13.00		
Attendance at Hearing on Motion(s)	1.00	330	330.00	13.00	42.90	372.90
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		13.00		
Prepare Submissions on Confidentiality	0.40	330	132.00	13.00	17.16	149.16
Attendance at Hearing on Confidentiality		330		13.00		
DECISION						
Review		330		13.00		
RATE ORDER						
Review		330		13.00		
Prepare Submission on Rate Order		330		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	572.60		188,958.00		24,564.54	213,522.54

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Mondrow_TimeDockets_20230712.pdf	Time Docket	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Mondrow_TimeDockets_20230712.pdf	Time Docket	Hearings	

July 11, 2022
INVOICE: 19867421

Industrial Gas Users Association
Our Matter: T1029927
EGI Rebasing and IRM Application (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
OTH-ATT	2022-06-13	0.40	Ian Mondrow	Briefing S. Knowlton regarding attendance at EGI rebasing application briefing;
OTH-ATT	2022-06-15	1.00	Ian Mondrow	Review correspondence regarding Stakeholder Conference; briefing note to S. Knowlton regarding attendance and topics to listen for;
OTH-ATT	2022-06-16	2.00	Sonia Knowlton	Attended and took minutes for EGI Stakeholder Conference on Rebasing Application;
OTH-ATT	2022-06-16	1.00	Sonia Knowlton	Prepared summary e-mail from EGI Stakeholder Meeting;
OTH-ATT-0.7 COM-CL-0.2	2022-06-18	0.90	Ian Mondrow	<u>Review EGI materials from Stakeholder Conference and S. Knowlton notes and draft update for IGUA members;</u>
COM-CL	2022-06-20	0.20	Ian Mondrow	Complete update note to IGUA;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Knowlton, Sonia	3.00
Mondrow, Ian	2.50
Total	5.50

August 18, 2022
INVOICE: 19889138

Industrial Gas Users Association
Our Matter: T1029927
**EGI Rebasing and IRM Application (IGUA22-ON-
EGI-8)**

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
RAE	2022-07-29	1.30	Ian Mondrow	Review EGI Stakeholder Conference follow-up material; review IGUA's ROE evidence from the Régie proceeding;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Mondrow, Ian	1.30
Total	1.30

September 28, 2022

INVOICE: 19911756

Industrial Gas Users Association
Our Matter: T1029927
EGI Rebasing and IRM Application (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-CL	2022-08-09	0.60	Ian Mondrow	Discussion with S. Rahbar regarding rebasing application cost expectations; expert retainer approaches and additional issues;
IEP	2022-08-11	0.90	Ian Mondrow	Review IGUA expert (Synapse) evidence from Régie ROE regarding utility business risk.

Total Fees for Professional Services**SUMMARY OF FEES**

TK Name	Hours
Mondrow, Ian	1.50
Total	1.50

November 30, 2022

INVOICE: 19950299

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
<u>COM-OP-0.5</u> <u>COM-CL-0.2</u>	2022-09-21	0.70	Ian Mondrow	<u>Review EGI e-mail regarding Stakeholder Day 2 and list of external experts retained; note to S. Rahbar; note to intervenor representatives with A. Hopkins Regie utility business risk evidence;</u>
COM-CL	2022-09-22	0.90	Ian Mondrow	Discussion with S. Rahbar regarding procedural expectations and potential external experts;
COM-CL	2022-09-27	0.20	Ian Mondrow	Correspondence with intervenor and IGUA regarding topic of abandonment provisions for consideration in upcoming proceeding;
COM-OP	2022-09-28	0.40	Ian Mondrow	Correspondence regarding intervenor co-ordination meeting and inquiries of OEB Staff;
<u>COM-OP-1.0</u> <u>COM-CL-1.1</u>	2022-09-28	2.10	Ian Mondrow	<u>Call with OEB Staff regarding potential experts and process approach; call with S. Rahbar and potential utility risk expert;</u>
RAE	2022-10-13	0.30	Ian Mondrow	Commence review of EGI Net Zero Pathways report;
<u>RAE-0.3</u> <u>COM-OP-0.2</u>	2022-10-14	0.50	Ian Mondrow	<u>Continue review of Guidehouse Net Zero Pathways report; discussion with EGI regarding upcoming application and potential approaches to process;</u>
RAE	2022-10-17	0.40	Ian Mondrow	Continue review of Guidehouse Pathways report;
<u>COM-OP-2.0</u> <u>COM-CL-0.3</u>	2022-10-17	2.30	Ian Mondrow	<u>Attend intervenor co-ordination meeting and follow-up discussion with S. Rahbar;</u>
RAE	2022-10-18	0.40	Ian Mondrow	Continue review of Guidehouse Pathways report;
	2022-10-19	1.60	Ian Mondrow	Review Stakeholder Conference materials provided; briefing note on materials to and discussion with S. Rahbar;
	2022-10-20	4.80	Ian Mondrow	Attend Stakeholder Conference;
COM-OP	2022-10-24	0.10	Ian Mondrow	Correspondence regarding further intervenor discussions;
RAE	2022-10-25	0.40	Ian Mondrow	Continue review of Guidehouse Pathways report;
RAE	2022-10-26	1.00	Ian Mondrow	Continue review of Guidehouse report;
RAE	2022-10-27	0.40	Ian Mondrow	Continue review of Guidehouse Pathways report; review correspondence regarding Quebec ROE decision;
COM-OP	2022-10-31	0.80	Ian Mondrow	Discussion with M. Rubenstein (SEC) regarding approach to issues and experts; review IGUA summaries of Régie ROE decision;

Total Fees for Professional Services

Terms: payment due within 30 days of invoice date
Interest at the rate of 2.8% per annum will be charged on all amounts not paid within 30 days of invoice date
Errors and omissions excluded

November 30, 2022

INVOICE: 19950299

SUMMARY OF FEES**TK Name**

Mondrow, Ian

Hours10.9 ~~17.30~~**Total**~~17.30~~

December 21, 2022

INVOICE: 19967765

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
<u>COM-CL-2.4</u> <u>RAE-0.4</u>	2022-11-01	2.80	Ian Mondrow	<u>Discussion with S. Rahbar regarding initial view on application issues and potential expert advisors; review EGI transmittal letter/hearing process and schedule proposal;</u>
COM-OP	2022-11-02	1.00	Ian Mondrow	Review OEB OPG ruling regarding intervenor experts and further consider approach to coordination on expert retainers in instant proceeding;
<u>IEP-0.5</u> <u>COM-OP-0.2</u>	2022-11-03	0.70	Ian Mondrow	<u>Conclude review of translated Quebec cost of capital (L. Booth) transcripts; note to K. Virany regarding expert retainer considerations;</u>
COM-OP	2022-11-04	0.30	Ian Mondrow	Intervenor correspondence regarding issues and set up issues tracking list;
<u>COM-CL-0.2</u> <u>COM-OP-0.3</u>	2022-11-07	0.50	Ian Mondrow	<u>Discussion with S. Rahbar and e-mail to intervenor group regarding cost of capital expertise;</u>
RAE	2022-11-08	0.40	Ian Mondrow	Commence review of application materials;
RAE	2022-11-09	1.90	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-11-09	0.40	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2022-11-10	3.00	Ian Mondrow	Attend Staff/Intervenor discussion regarding process and potential experts; correspondence with ED/GED counsel relating to potential expert scoping;
RAE	2022-11-11	0.20	Ian Mondrow	Continue review of materials;
RAE	2022-11-14	1.40	Ian Mondrow	Continue review of materials;
RAE	2022-11-15	2.40	Ian Mondrow	Continue review of pre-filed materials;
COM-CL	2022-11-15	0.30	Ian Mondrow	Discussion with S. Rahbar regarding outcomes of Staff/Intervenor meeting and her discussions with OEB personnel;
COM-CL	2022-11-16	0.30	Ian Mondrow	Discussion with S. Rahbar regarding Regie comments on climate risk evidence and relating to ongoing discussions with ED/GEC to co-ordinate expert proposals;
<u>RAE-0.6</u> <u>COM-OP-0.2</u>	2022-11-17	0.80	Ian Mondrow	<u>Continue review of pre-filed material; intervenor correspondence regarding co-ordination of potential experts;</u>
COM-CL	2022-11-17	0.40	Ian Mondrow	Correspondence with S. Rahbar regarding discussions with OEB Staff on expert retainers;
COM-OP	2022-11-21	0.20	Ian Mondrow	Intervenor correspondence regarding experts;
<u>COM-OP-0.3</u> <u>ILP-0.3</u>	2022-11-24	0.60	Ian Mondrow	<u>Correspondence regarding intervenor issues/potential experts; work on issues tracking list;</u>
COM-OP	2022-11-25	0.20	Ian Mondrow	Intervenor correspondence regarding issues for

December 21, 2022
INVOICE: 19967765

				consideration;
<u>RAE-0.2</u>	2022-11-28	0.40	Ian Mondrow	<u>Continue review of pre-filed evidence; review and revise</u>
<u>SUB-0.2</u>				<u>intervention letter;</u>
SUB	2022-11-28	0.30	Ian Mondrow	Review and revise draft intervention letter;
COM-OP	2022-11-28	0.10	Ian Mondrow	Intervenor correspondence regarding issues and experts;
RAE	2022-11-29	0.50	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-11-29	0.50	Ian Mondrow	Interim report on filing and major themes to Ontario Caucus; member correspondence regarding Enerline delivery reporting concerns and inquiry to determine extent of the issue;
RAE	2022-11-30	1.40	Ian Mondrow	Retrieve Phase 2 filing and continue review of pre-filed evidence;
COM-OP	2022-11-30	0.50	Ian Mondrow	Correspondence with potential expert and with other parties regarding issues;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Mondrow, Ian	21.50
Total	21.50

December 31, 2022

INVOICE: 19990224

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-OP	2022-12-01	2.10	Ian Mondrow	Intervenor meeting to continue discussion of issues and potential experts;
COM-CL	2022-12-01	0.60	Ian Mondrow	Discussion with S. Rahbar regarding IGUA issues/potential experts and work plan;
SUB	2022-12-02	0.10	Ian Mondrow	Review and finalize intervention letter;
SUB	2022-12-05	0.20	Cathy Galler	Formatting and filing intervention request letter;
COM-OP	2022-12-05	0.40	Ian Mondrow	Review intervenor correspondence and consolidated working issues list incorporating additional topics;
RAE	2022-12-06	0.50	Ian Mondrow	Continue review of pre-filed material;
RAE	2022-12-08	2.80	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-08	1.00	Ian Mondrow	Interim note to IGUA on EGI evidence regarding energy transition business risk and potential impact on expert evidence under consideration' discussion with S. Rahbar regarding experts and other application issues;
IEP	2022-12-09	0.10	Ian Mondrow	Correspondence with potential expert regarding materials to review;
RAE	2022-12-09	1.00	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-12	2.30	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-13	0.70	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-13	0.10	Ian Mondrow	Correspondence with S. Rahbar regarding package from pre-filed material for expert input;
<u>COM-CL-2.0</u> <u>RAE-0.2</u>	2022-12-14	2.20	Ian Mondrow	<u>Review correspondence from external advisors and assemble information packages for them; discussion with S. Rahbar regarding timing and next steps on application issues definition and summary report for planning; review reference materials regarding previous equity thickness consideration for EGI;</u>
RAE	2022-12-15	2.40	Ian Mondrow	Continue review of pre-filed materials;
IEP	2022-12-15	1.10	Ian Mondrow	Discussion with potential external advisor;
COM-OP	2022-12-16	1.30	Ian Mondrow	Call with intervenor representatives regarding various issues/expertise/co-ordination;
RAE	2022-12-16	1.50	Ian Mondrow	Continue review of pre-filed materials; review Procedural Order No. 1;
COM-CL	2022-12-16	0.30	Ian Mondrow	Interim update to IGUA regarding Procedural Order, dates for expert proposals and main drivers of revenue deficiency in 2024;

December 31, 2022

INVOICE: 19990224

RAE	2022-12-17	1.50	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-19	3.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-20	2.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-21	3.70	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-22	2.30	Ian Mondrow	Call with S. Rahbar and follow-up note summarizing revenue requirement impact of the application, over the term of the proposed rate plan; call with S. Rahbar and A. Hopkins (Synapse); discussion with intervenor regarding cost of capital issue and approach;
COM-OP	2022-12-26	1.20	Ian Mondrow	E-mail inquiries of SEC counsel and others on equity thickness topic; evaluation of EGI position and alternative approaches;
IEP	2022-12-27	2.10	Ian Mondrow	Background reading on cost of capital topic (OEB policy and evidence from recent Quebec inquiry) and notes for further discussion with potential expert;
COM-OP	2022-12-27	0.20	Ian Mondrow	Correspondence with D. Quinn regarding concerns on storage vs. delivered supply and ICF report;
COM-OP	2022-12-28	0.20	Ian Mondrow	Further correspondence with SMEs regarding cost of capital issues/approach;
COM-CL	2022-12-29	2.50	Ian Mondrow	Call with IGUA and potential expert to review issues; call with contact regarding additional potential experts;
COM-OP	2022-12-30	1.80	Ian Mondrow	Correspondence with other intervenors regarding various issues of interest and current thinking; correspondence with potential experts regarding possible scopes of work; note to K. Elson and D. Poch to share current thinking on energy transition work and co-ordinate;
COM-CL	2022-12-30	0.40	Ian Mondrow	Update note to IGUA regarding communications with respect to potential experts to date and follow-up considerations;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	0.20
Mondrow, Ian	42.60
Total	42.80

February 17, 2023
INVOICE: 20005427

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
RAE	2023-01-08	2.10	Ian Mondrow	Continue review of pre-filed materials;
ILP	2023-01-08	0.50	Ian Mondrow	Review draft Issues List comments circulated among intervenors in preparation for Issues Conference;
AIC	2023-01-09	6.40	Ian Mondrow	Attend Issues Conference;
IEP	2023-01-09	0.50	Ian Mondrow	Review correspondence with IGUA and potential experts regarding issues and possible work scopes;
RAE	2023-01-10	0.50	Ian Mondrow	Continue review of pre-filed materials;
ILP	2023-01-10	0.10	Ian Mondrow	Correspondence among parties further to Issues List resolution;
IEP	2023-01-10	2.70	Ian Mondrow	Conferences with S. Rahbar and potential experts regarding work scopes and workplan and follow-up correspondence;
ILP	2023-01-10	0.50	Ian Mondrow	Review and comment on revised draft Issues List;
COM-CL-1.0 SUB-4.0	2023-01-11	5.00	Ian Mondrow	Call with IGUA and potential expert; follow-up discussion with IGUA regarding all potential experts and how to balance/determine proposal to advance to OEB for approval; consider and draft IGUA expert evidence sponsorship proposal and circulate to client and co-ordinating intervenors for review and comment; review OEB Staff letter regarding extension to procure expert proposals and consider and first draft of responding letter and transmission to client for review and consideration;
RAE	2023-01-11	0.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2023-01-12	0.70	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-12	6.70	Ian Mondrow	Continue work on expert proposals, including detailed review with S. Rahbar regarding individual expert discussions and work scopes;
SUB	2023-01-13	5.10	Ian Mondrow	Continue work on expert proposal submission and conference with S. Rahbar and N. Sebaa to discuss and finalize; develop IGUA/expert work plan;
ILP-0.3 COM-CL-0.2	2023-01-13	0.50	Ian Mondrow	Review revised draft Issues List and draft transmittal letter and comments from Issues Conference participants; review OEB response to OEB Staff letter regarding expert retainer status and dates and update note to IGUA;
COM-OP	2023-01-14	0.30	Ian Mondrow	Review J.C. Shepherd letter regarding support for proposed expert witnesses and provide note of clarification regarding scope for proposed IGUA evidence;
SUB	2023-01-16	0.40	Cathy Galler	Formatting and filing Proposal to File Expert Evidence and

February 17, 2023
INVOICE: 20005427

				Comment on Issues List;
<u>SUB-2.5</u> <u>IEP-0.7</u>	2023-01-16	3.20	Ian Mondrow	<u>Review and finalize work on expert evidence proposal, including workplan and budgets; review submissions of other parties; update to experts with workplan;</u>
ILP	2023-01-16	1.20	Ian Mondrow	Review OEB Staff submission on Issues List and draft comment for filing; review issues submissions from others;
IEP	2023-01-17	3.60	Ian Mondrow	Working with IGUA on final expert retainer arrangements;
ILP	2023-01-17	0.10	Ian Mondrow	Review balance of Issues submissions filed;
COM-CL	2023-01-17	1.50	Ian Mondrow	Briefing IGUA Caucus regarding status and Issues identified;
RAE	2023-01-19	0.40	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-19	1.00	Ian Mondrow	Further correspondence/discussions with experts to finalize detailed engagement terms;
IEP	2023-01-20	0.30	Ian Mondrow	Further correspondence to resolve terms of expert retainers;
COM-CL	2023-01-20	0.60	Ian Mondrow	Review OEB Staff letter regarding progress on proposed expert retainers and update to client and IGUA's proposed experts;
RAE	2023-01-23	2.80	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-24	1.30	Ian Mondrow	Work with IGUA on finalizing expert retainers;
RAE	2023-01-24	2.20	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2023-01-24	1.10	Ian Mondrow	Consideration of, correspondence with other parties regarding PDO "double payment" issue and formulating interrogatory approach to the issue;
COM-CL	2023-01-24	0.40	Ian Mondrow	Client update for report to members;
RAE	2023-01-25	1.60	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2023-01-25	0.20	Ian Mondrow	Intervenor group e-mail regarding rate harmonization proposals;
COM-CL	2023-01-25	0.10	Ian Mondrow	Further communication internally regarding expert work plans;
<u>COM-OP-0.3</u> <u>COM-CL-0.4</u>	2023-01-26	0.70	Ian Mondrow	<u>Further intervenor correspondence regarding rate harmonization proposal; notes to IGUA cost allocation advisor regarding rate harmonization discussion and further information on Panhandle/St. Clair allocation issue;</u>
RAE	2023-01-26	1.00	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-01-27	1.10	Ian Mondrow	Continue review of materials;
COM-CL	2023-01-27	0.60	Ian Mondrow	Update client and experts regarding decision on evidence proposals and note interrogatory delivery date in workplan;
RAE	2023-01-27	0.50	Ian Mondrow	Review P.O. No. 2 regarding issues and expert evidence proposal determinations;
RAE	2023-01-28	3.10	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-01-30	3.40	Ian Mondrow	Continue review of pre-filed materials;

February 17, 2023
INVOICE: 20005427

COM-OP	2023-01-30	0.30	Ian Mondrow	Discussion with other parties regarding upcoming process;
IRP	2023-01-30	0.60	Ian Mondrow	Communciations with experts regarding interrogatory formatting and with R. Knecht relating to rate design issues;
COM-CL	2023-01-31	0.90	Ian Mondrow	Correspondence with experts regarding issues and interrogatories; review N. Sebaa revisions to schedule regarding expert and IGUA Caucus; discussions; review OEB Staff letter relating to scope of depreciation evidence and note to D. Madsen regarding degree of potential overlap;
RAE	2023-01-31	0.60	Ian Mondrow	Continue review of pre-filed material;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	0.40
Mondrow, Ian	66.60
Total	67.00

March 20, 2023
INVOICE: 20021710

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
RAE	2023-02-01	0.40	Ian Mondrow	Continue review of materials; review EGI filing regarding Phase 2 evidence allocation against approved issues list;
COM-CL	2023-02-01	3.90	Ian Mondrow	Client member communications regarding EGI consultations and rate harmonization proposals; call with S. Rahbar and N. Sebaa relating to expert and IGUA Caucus co-ordination;
COM-OP	2023-02-01	0.10	Ian Mondrow	Intervenor correspondence regarding issues phasing and IRs;
RAE	2023-02-02	0.30	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-02-03	1.30	Ian Mondrow	Review and finalize updated expert work plan and circulate with covering note to experts; review A. Hopkins note regarding approach to modelling and provide input in response; further correspondence with experts regarding work and IRs;
COM-CL	2023-02-03	2.30	Ian Mondrow	Discussions with IGUA members regarding services (current and harmonized);
COM-CL	2023-02-03	0.40	Ian Mondrow	Call with S. Rahbar regarding topics for further consideration;
COM-CL	2023-02-05	0.20	Ian Mondrow	Review client communications regarding service harmonization details/feedback;
IEP	2023-02-05	1.10	Ian Mondrow	Communications with experts;
COM-OP	2023-02-05	0.30	Ian Mondrow	Correspondence with intervenor representatives regarding common issues and interrogatory topics/further discussion;
IRP	2023-02-06	2.50	Ian Mondrow	Review and clean up draft IRs from experts;
IEP	2023-02-06	1.50	Ian Mondrow	Call with A. Hopkins and IGUA to review scope of work and co-ordination with other experts;
COM-CL	2023-02-06	0.20	Ian Mondrow	Client update note for members;
RAE	2023-02-07	0.60	Ian Mondrow	Continue review of pre-filed materials;
COM-CL	2023-02-07	1.30	Ian Mondrow	Call with D. Quinn and IGUA member regarding storage issues (and Phase 1 - Phase 2 division/overlap);
IEP	2023-02-07	0.20	Ian Mondrow	Review correspondence between experts regarding approach to modelling in support of business risk analysis;
IRP	2023-02-08	3.90	Ian Mondrow	Discussion with IGUA regarding IRs and review and clean-up draft IRs from experts;
IRP	2023-02-09	4.30	Ian Mondrow	Continue review and clean-up draft IRs;
IRP	2023-02-10	4.80	Ian Mondrow	Continue work on reviewing, revising and consolidating expert IRs; drafting additional IRs based on previous notes;

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				drafting IR filing covering letter; correspondence with counsel for EGI to confirm approach to deferral to Phase 2 of cost allocator-related questions as applicable to proposed harmonized rates; initial review of incoming IR filings regarding areas of potential IGUA interest;
RAE	2023-02-13	0.30	Ian Mondrow	Continue review of pre-filed materials;
COM-CL	2023-02-13	0.40	Ian Mondrow	Update call with N. Sebaa (IGUA); review and extract modified RNG proposal evidence for N. Sebaa;
COM-CL	2023-02-13	0.30	Ian Mondrow	Review sample invoice from customer regarding components of monthly charges;
IRR	2023-02-13	0.60	Ian Mondrow	Review OEB Staff IRs and share with IGUA experts regarding cost of capital and depreciation proposal topics;
RAE	2023-02-14	3.90	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2023-02-14	1.00	Ian Mondrow	Briefing note to IGUA regarding EGI low-carbon proposals;
COM-OP	2023-02-14	0.60	Ian Mondrow	Intervenor correspondence regarding hearing issues;
RAE	2023-02-15	0.70	Ian Mondrow	Continue review of materials;
COM-OP	2023-02-15	0.30	Ian Mondrow	Intervenor correspondence regarding issues for expert consideration;
COM-CL	2023-02-15	1.80	Ian Mondrow	Discussion with IGUA member regarding rate harmonization concerns; call with IGUA team regarding positions on RNG and Hydrogen initiatives;
COM-OP	2023-02-16	0.40	Ian Mondrow	Review correspondence with M. Rubenstein and associated materials from 2020 ESM VA regarding disposition at rebasing of integration capital (and associated accelerated CCA);
RAE	2023-02-16	1.90	Ian Mondrow	Continue review of pre-filed material;
IEP	2023-02-16	0.10	Ian Mondrow	Review correspondence among IGUA experts regarding Canadian vs. US utility tax treatment and EGI approach;
COM-CL	2023-02-16	0.30	Ian Mondrow	Correspondence with IGUA regarding energy transition cost responsibility position;
COM-OP	2023-02-17	0.10	Ian Mondrow	Review intervenor correspondence regarding various issues of interest;
RAE	2023-02-17	4.20	Ian Mondrow	Continue review of pre-filed materials;
RAE	2023-02-21	6.10	Ian Mondrow	Continue review of pre-filed evidence;
RAE	2023-02-22	4.60	Ian Mondrow	Continue review of pre-filed material; note to B. Knecht regarding features/merits of rate harmonization/cost allocation proposal (for discussion);
COM-OP	2023-02-22	0.40	Ian Mondrow	E-mail exchanges with other intervenors regarding transmission (and general rate) harmonization parameters;
RAE	2023-02-23	1.80	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-02-24	1.20	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2023-02-24	0.50	Ian Mondrow	Call with B. Yauch (APPRO) regarding issues of interest;

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RAE	2023-02-27	0.40	Ian Mondrow	Correspondence on issues with R.D. Knecht (cost allocation/rate design expert);
RAE	2023-02-27	1.70	Ian Mondrow	Continue review of pre-filed materials;
RAE	2023-02-28	1.90	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2023-02-28	0.60	Ian Mondrow	Call with S. Rahbar regarding various issues and progress through the evidence and considering questions for expert input;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Mondrow, Ian	65.70
Total	65.70

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Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
RAE	2023-03-01	5.30	Ian Mondrow	Continue review of pre-filed materials;
COM-CL	2023-03-01	1.30	Ian Mondrow	Draft mapping of current to proposed harmonized rates for provision to IGUA members along with harmonized rate proposal description for review and comment; supplemental note providing details on proposed 2024 current and harmonized rates and how to apply the details to calculate individual rate impacts;
RAE	2023-03-02	3.80	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-03-03	3.70	Ian Mondrow	Continue review of pre-filed materials;
COM-CL	2023-03-03	1.70	Ian Mondrow	Correspondence with various IGUA members regarding rate harmonization proposal and extent to which their concerns are thereby addressed; complete briefing note to IGUA relating to derivation of customer specific 2024 and 2026 rate impacts based on rate evidence filed;
RAE	2023-03-06	2.70	Ian Mondrow	Continue review of pre-filed material; review and sort working issues list;
IEP	2023-03-06	0.40	Ian Mondrow	Draft note to experts regarding upcoming deliverables and discussions in preparation for Technical Conference and evidence outlines;
IEP	2023-03-06	0.40	Ian Mondrow	Review expert evidence outlines received;
COM-CL	2023-03-06	0.20	Ian Mondrow	Supplemental note for circulation to IGUA members for feedback in EGI's proposal for interruptible rates;
RAE	2023-03-07	5.30	Ian Mondrow	Review and revision/consolidation of working issues list;
IEP	2023-03-08	2.60	Ian Mondrow	Review expert evidence outlines and provide initial comments;
COM-CL	2023-03-08	0.20	Ian Mondrow	Review and supplement IGUA member briefing note regarding 2024 and harmonized rate changes;
RAE	2023-03-08	0.40	Ian Mondrow	Review EGI covering letter with GSP Update; GSP Update introduction, and OEB Rebasing issues determination regarding GSP filing nexus with rebasing application;
RAE	2023-03-09	1.70	Ian Mondrow	Gather and commence review of updated evidence filing and EGI IRRs;
TCP	2023-03-10	1.50	Ian Mondrow	Correspondence with experts regarding incomplete IRRs and next steps in preparation for Technical Conference; message for EGI counsel to inquire regarding excel models;
COM-CL	2023-03-10	3.00	Ian Mondrow	Discussions with S. Rahbar regarding expert evidence outlines and various substantive issues as well as budget

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				status; review S. Rahbar comments on Synapse evidence outline and comment;
IEP	2023-03-13	3.50	Ian Mondrow	Call with IGUA experts to review evidence outlines, and discuss IRRs;
COM-OP	2023-03-13	1.50	Ian Mondrow	Call with M. Rubenstein and T. Ladanyi to review O/H Capitalization and other issues;
IEP	2023-03-13	0.90	Ian Mondrow	Review draft Declarations and Undertakings and OEB Staff undertakings and letter submitted; draft note to S. Cleary regarding review of relevant OEB procedural materials and execution of declaration and undertaking;
COM-OP	2023-03-13	0.20	Ian Mondrow	Review intervenor correspondence regarding systems expansion projects and attendant risks;
IRR	2023-03-14	3.80	Ian Mondrow	Review IRRs; transmit confidentiality undertakings to S. Cleary;
IRR	2023-03-15	1.30	Ian Mondrow	Continue review of IRRs;
TCP	2023-03-15	0.90	Ian Mondrow	Technical Conference preparation including letter providing topic areas and time estimates and review of other letters filed for areas of focus by other parties;
TCP	2023-03-16	0.40	Ian Mondrow	Correspondence regarding Technical Conference time estimates and witnesses;
IRR	2023-03-17	1.50	Ian Mondrow	Continue review of IRRs;
RAE	2023-03-17	0.50	Ian Mondrow	Review EGI evidence updates and forward relevant updates to experts;
TCP	2023-03-17	1.10	Ian Mondrow	Review correspondence and Procedural Order regarding Technical Conference; call with D. O'Leary and correspondence with D. Madsen regarding obtaining cost allocation data;
COM-CL	2023-03-17	0.10	Ian Mondrow	Client update note;
RAE	2023-03-20	3.40	Ian Mondrow	Review R. Knecht preliminary cost allocation and rate design report and conference to discuss;
IRR	2023-03-20	2.50	Ian Mondrow	Complete review of IRRs;
COM-CL	2023-03-20	0.20	Ian Mondrow	Client communications regarding R. Knecht work update and member rate impact inquiries;
TCP	2023-03-20	0.90	Ian Mondrow	Technical Conference: review supplementary depreciation IRR information from EGI and forward to D. Madsen; review D. Madsen note regarding reconciliation of updated cost allocation evidence; review Technical Conference schedule and correspondence with EGI and OEB Staff regarding conflict and potential solution;
SUB-CONF	2023-03-21	0.40	Ian Mondrow	Draft covering letter for filing confidentiality undertakings and requesting information from EGI; note to A. Hopkins to confirm that access to confidential filings not required at this time;
TCP	2023-03-21	3.80	Ian Mondrow	Review Technical Conference preparation notes and refine

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				questions;
TCA	2023-03-22	6.60	Ian Mondrow	Attend Technical Conference;
RAE	2023-03-22	0.50	Ian Mondrow	Review EGI and Guidehouse letters regarding confidentiality of pathways model and review OEB responding letter; review EGI letter regarding updated evidence and IRRs;
TCA	2023-03-23	6.40	Ian Mondrow	Attend Technical Conference;
COM-OP	2023-03-24	0.20	Ian Mondrow	Review intervenor correspondence regarding various issues;
COM-OP	2023-03-24	0.20	Ian Mondrow	Review correspondence regarding Guidehouse disclosure discussions;
TCA	2023-03-24	2.00	Ian Mondrow	Attend Technical Conference;
TCP	2023-03-24	3.30	Ian Mondrow	Review and revise Technical Conference questions and compile compendium contents for assembly; circulate compendium; correspondence with J.C. Sheppard and M. Rubenstein regarding asking IGUA questions;
COM-CL	2023-03-24	0.30	Ian Mondrow	Update note to IGUA regarding Technical Conference status and approach;
IEP	2023-03-24	0.50	Ian Mondrow	Review status of expert workplan and meeting schedule and communicate required adjustments to meeting schedule and proposed dates;
<u>RAE-3.1</u> <u>IEP-2.0</u>	2023-03-25	5.10	Ian Mondrow	<u>Review cost allocation/rate design notes from B. Knecht and note to B. Knecht regarding further work/next steps; commence review of D. Madsen draft evidence;</u>
IEP	2023-03-26	0.20	Ian Mondrow	Review recent correspondence from experts regarding work progress;
TCP	2023-03-26	1.00	Ian Mondrow	Review notes and prepare for Technical Conference;
TCA	2023-03-27	7.40	Ian Mondrow	Attend Technical Conference;
TCP	2023-03-27	1.20	Ian Mondrow	Call with B. Knecht regarding Technical Conference clarification questions and updated retainer terms; correspondence with EGI and OEB Staff regarding arrangements for IGUA clarification questions for balance of proceeding; note to B Knecht to confirm updated retainer and arrangements for Technical Conference on cost allocation topic;
TCP	2023-03-27	0.50	Ian Mondrow	Call with S. Rahbar to provide update and confirm instructions for B. Knecht and balance of Technical Conference participation;
TCP	2023-03-27	0.80	Ian Mondrow	Review Technical Conference transcript and excerpt to D. Madsen to consider;
TCA	2023-03-28	1.80	Ian Mondrow	Attend Technical Conference;
TCP	2023-03-28	0.70	Ian Mondrow	Review and revise Technical Conference follow-up questions and correspondence with B. Knecht to arrange/guide Friday attendance;
IRR	2023-03-29	0.50	Ian Mondrow	Review IRRs not yet read;

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TCA	2023-03-31	3.80	Ian Mondrow	Technical Conference; review transcript in lieu of attendance;
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Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Mondrow, Ian	104.10
Total	104.10

May 31, 2023
INVOICE: 20064841

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-CL	2023-04-01	0.20	Ian Mondrow	Ensure experts workplan dates are current and fees update to IGUA;
COM-OP	2023-04-01	0.30	Ian Mondrow	Review EGI letter responding to ED letter regarding additional evidence on carbon footprint of blue hydrogen; review intervenor correspondence regarding Panhandle/St. Clair system cost allocation;
TCA	2023-04-01	0.20	Ian Mondrow	Review B. Knecht reports on Friday's Technical Conference; review S. Cleary input on IRR follow-up;
TCA	2023-04-03	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-03	5.00	Ian Mondrow	Complete review of D. Madsen draft evidence and provide comments/questions for further consideration; review Synapse draft evidence and provide comments/considerations;
IEP	2023-04-04	2.40	Ian Mondrow	Review Synapse modelling description document; call with IGUA and experts to review draft evidence; review notes from experts regarding work updates and additional comments;
RAE	2023-04-04	0.40	Ian Mondrow	Review EGI letter regarding updated Guidehouse pathways study and impact on filing of ED/GEC pathways evidence, and note to A. Hopkins to consider and advise of any concerns;
COM-CL	2023-04-05	0.40	Ian Mondrow	Update to S. Rahbar and IGUA Ontario Caucus chair;
TCA	2023-04-05	0.60	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
COM-OP	2023-04-05	0.30	Ian Mondrow	Review Procedural Order 4; intervenor correspondence;
TCA	2023-04-06	0.40	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
IEP	2023-04-06	0.60	Ian Mondrow	Discussion with C. Hummel regarding equity thickness OEB policy questions for response and provide guidance note;
COM-OP	2023-04-06	0.30	Ian Mondrow	Correspondence with M. Rubenstein regarding EGI proposal on Guidehouse update and Neme evidence filing;
COM-OP	2023-04-07	0.30	Ian Mondrow	Correspondence with D. Poch regarding motions and EGI proposal regarding pathways/C. Neme evidence;
COM-CL	2023-04-07	0.70	Ian Mondrow	Retrieve Technical Conference undertaking responses and forward to IGUA experts; review recent correspondence with IGUA experts;

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RAE	2023-04-07	0.60	Ian Mondrow	Review EGI/Guidehouse update filing;
IEP	2023-04-08	2.90	Ian Mondrow	Review S. Cleary draft evidence and provide comments;
TCA	2023-04-10	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-10	1.10	Ian Mondrow	Correspondence with experts to clarify cross-references in draft evidence and regarding evidence revision and finalization; correspondence with experts regarding potential revised schedule and response to OEB Staff;
COM-CL	2023-04-10	1.20	Ian Mondrow	Review e-mail inquiries from members regarding rate changes, provide preliminary responses, and inquiry of B. Knecht for assistance in validating rate impacts;
COM-OP	2023-04-10	1.00	Ian Mondrow	Review ED and SEC motions day letters and share with IGUA business risk experts;
IEP	2023-04-11	4.60	Christopher Hummel	Prepared and circulated Expert Form A for A. Hopkins, S. Cleary, and D. Madsen; researched history of OEB's equity thickness test and drafted analysis on rationale for I. Mondrow;
TCA	2023-04-11	0.40	Ian Mondrow	Continue review of Technical Conference transcripts in lieu of attendance;
COM-OP	2023-04-11	1.70	Ian Mondrow	Correspondence/discussions with parties regarding proposed updated schedule;
COM-CL	2023-04-11	0.50	Ian Mondrow	Update notes to client and experts on evolving rescheduling discussions and revision of expert work plan timing to finalize evidence and prepare for IRs;
IEP	2023-04-12	0.70	Ian Mondrow	Reviewing C. Hummel reporting note on cost of capital policy research and interim note to A. Hopkins with relevant OEB materials;
IEP	2023-04-12	1.50	Ian Mondrow	Correspondence with experts and discussion with S. Rahbar regarding status of work and finalizing evidence;
COM-OP	2023-04-12	0.40	Ian Mondrow	Review EGI response to motions day submissions and consider;
IEP	2023-04-13	0.30	Ian Mondrow	Review recent IGUA expert correspondence;
RAE	2023-04-13	0.50	Ian Mondrow	Review EGI filing updates;
IEP	2023-04-13	1.20	Ian Mondrow	Review Procedural Order No. 5 and revised experts work plan accordingly; circulate revised work plan with covering note highlighting next steps;
AHM	2023-04-14	1.00	Ian Mondrow	Review Motions Day transcript in lieu of attendance;
COM-OP	2023-04-14	0.70	Ian Mondrow	Discussion with D.R. Quinn regarding T2 cost allocation issue;
IEP	2023-04-16	3.00	Ian Mondrow	Full review and additional comment on S. Cleary draft evidence;
IEP	2023-04-17	2.80	Ian Mondrow	Final review of S. Cleary evidence changes and instructions for assembly; review D. Madsen revised draft evidence;

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IEP	2023-04-18	4.80	Ian Mondrow	Continued detailed review and comment on expert evidence;
TC-FOL-UP	2023-04-18	0.50	Ian Mondrow	Review EGI updated Technical Conference responses for IGUA cost allocation matters; note to B. Knecht regarding status and next steps on cost allocation and rate design work;
COM-CL	2023-04-19	0.80	Ian Mondrow	Update to Ontario Caucus;
IEP	2023-04-19	0.20	Ian Mondrow	Review additional revisions to D. Madsen evidence;
IEP	2023-04-20	1.90	Ian Mondrow	Final review of S. Cleary evidence as formatted for filing and filing directions provided; correspondence with other experts regarding work status/finalizing evidence;
COM-CL-0.7 COM-OP-0.7	2023-04-20	1.40	Ian Mondrow	Review and consider note from intervenor regarding load balancing cost allocation, review associated evidence, and forward to B. Knecht for consideration; review IGUA approach to calculation of member rate impacts; call with A. Vachon (IGUA) to review approach to rate impact calculations;
IEP	2023-04-21	1.00	Cathy Galler	Formatting and filing expert evidence;
IEP	2023-04-21	1.90	Ian Mondrow	Review and final instructions for compilation and filing of IGUA sponsored evidence; drafting evidence transmittal letter;
RAE	2023-04-21	2.00	Ian Mondrow	Review EGI gas supply plan update regarding relevance to IGUA members and rebasing application topics; review EGI updates and parties' evidence filed;
COM-CL	2023-04-21	1.00	Ian Mondrow	Call with IGUA Ontario Caucus chairs (outgoing and incoming) regarding next update to Caucus and Board of Directors;
RAE	2023-04-21	0.60	Ian Mondrow	Review Guidehouse update and related EGI filing; note to A. Hopkins regarding next steps in finalizing Synapse evidence;
RAE	2023-04-22	2.80	Ian Mondrow	Review LEI evidence filed by OEB Staff and note to IGUA cost of capital experts with observations and request for input;
RAE	2023-04-23	1.20	Ian Mondrow	Review AGA/CGA study report referred to in LEI evidence;
RAE	2023-04-23	0.60	Ian Mondrow	Reading OPI and FRPO evidence;
RAE-1.0 IRP-1.4	2023-04-24	2.40	Ian Mondrow	Continue review of intervenor evidence filed and related correspondence with IGUA experts; drafting proposed IRs on intervenor/Staff evidence;
COM-OP	2023-04-24	0.50	Ian Mondrow	Intervenor correspondence regarding various issues;
RAE	2023-04-25	0.80	Ian Mondrow	Review ED and GEC Technical Conference (P2NZ Update) filings and related materials and update note to A. Hopkins regarding energy transition discussions anticipated;
IEP	2023-04-25	1.20	Ian Mondrow	Review and revise experts work plan and update note to experts and client group regarding upcoming steps and schedule;

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IRP	2023-04-25	0.80	Ian Mondrow	Review and revise IRs for LEI based on S. Cleary input; correspondence with D. Madsen regarding potential IRs for Intergroup;
IEP	2023-04-26	0.30	Ian Mondrow	Correspondence with experts regarding work plan;
COM-CL	2023-04-26	0.20	Ian Mondrow	Update note to IGUA;
RAE	2023-04-26	2.20	Ian Mondrow	Review Intergroup depreciation evidence;
TCP	2023-04-26	0.30	Ian Mondrow	Review correspondence regarding scope of Technical Conference (and ED materials filed);
IRP	2023-04-26	0.60	Ian Mondrow	Review and supplement IRs for LEI based on input from IGUA experts;
RAE	2023-04-26	0.60	Ian Mondrow	Continue review of Intergroup depreciation evidence and question to D. Madsen; correspondence with K. Elson (ED) regarding implications of further Guidehouse report discovery;
IRP	2023-04-27	0.30	Cathy Galler	Formatting and filing IRs to LEI;
RAE	2023-04-27	3.10	Ian Mondrow	Complete review of Intergroup evidence;
TCA	2023-04-27	1.30	Ian Mondrow	Attend Technical conference continuation;
IRP	2023-04-27	0.30	Ian Mondrow	Final review and revision to IRs for LEI;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Review transcripts in lieu of attendance;
IE-IRR	2023-04-28	0.10	Ian Mondrow	Review IRs received on IGUA evidence and distribute to experts for consideration and response;
IRP	2023-04-28	1.40	Ian Mondrow	Review comments from D. Madsen and draft IRs for Intergroup;
IE-IRR	2023-04-28	1.00	Ian Mondrow	Continue review of IRs received and distribute to experts for response;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Continue review of transcript in lieu of attendance;
COM-OP	2023-04-28	0.20	Ian Mondrow	Correspondence with K. Elson regarding issues of common interest;
IE-IRR	2023-04-29	1.70	Ian Mondrow	Review IRs received and dispatch to experts for drafting responses as appropriate;

Total Fees for Professional Services

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SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	1.30
Hummel, Christopher	4.60
Mondrow, Ian	73.70
Total	79.60

June 16, 2023
INVOICE: 20071238

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
IE-IRR	2023-05-01	0.50	Ian Mondrow	Correspondence with experts and intervenor regarding IRs received and parameters for expected response;
COM-CL	2023-05-01	0.80	Ian Mondrow	Call with S. Rahbar regarding update and discussion of various issues related to the application; fees update to IGUA;
COM-CL-0.5 COM-OP-0.4	2023-05-01	0.90	Ian Mondrow	<u>Review notes between IGUA and B. Knecht regarding cost allocation issues; note to D. Stevens regarding timing on promised cost allocation continuity mapping;</u>
COM-CL-0.9 COM-OP-0.2	2023-05-02	1.10	Ian Mondrow	<u>Call with B. Knecht to review status of work, issues for further work and timing; correspondence with D. Stevens regarding cost allocation filing anticipated in further undertaking responses;</u>
SCP	2023-05-05	0.70	Ian Mondrow	Discussion with M. Millar regarding process for Settlement Conference; message to D. Stevens and e-mail to intervenor colleagues regarding process for Settlement Conference; review recent hearing related correspondence;
IEP	2023-05-08	3.30	Ian Mondrow	Review A. Hopkins final draft evidence and provide final comments and instructions for formatting in preparation for filing
RAE	2023-05-08	0.60	Ian Mondrow	Review draft of C. Neme evidence shared;
COM-CL	2023-05-09	0.40	Ian Mondrow	Update to IGUA for distribution to members;
IEP	2023-05-09	1.80	Ian Mondrow	Final review of A. Hopkins' evidence; draft transmittal letter including request for confidential treatment of model to be filed;
IEP	2023-05-10	0.60	Ian Mondrow	Review formatted Synapse evidence and transmittal letter and provide final instructions for preparation for filing;
IEP	2023-05-11	0.90	Ian Mondrow	Final review of A. Hopkins evidence filing and transmittal letter; retrieve other parties' filings and distribute to IGUA/experts;
IE-IRR	2023-05-11	0.80	Ian Mondrow	Commence review of draft IRRs from S. Cleary;
RAE	2023-05-11	0.60	Ian Mondrow	Review ED/GEC evidence;
IE-IRR	2023-05-12	5.50	Ian Mondrow	Continue review and comment on S. Cleary draft IRRs; commence review and comment on D. Madsen draft IRRs;
IE-IRR	2023-05-13	2.40	Ian Mondrow	Continue review of, and comment on, D. Madsen draft IRRs;
IE-IRR	2023-05-15	5.70	Ian Mondrow	Review expert comments on draft IRRs and work on compilation for filing;

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RAE	2023-05-15	0.10	Ian Mondrow	Review EGI letter regarding additional evidence in response to ED (Hydrogen);
IRR	2023-05-15	0.20	Ian Mondrow	Review IRR filings by other parties;
IE-IRR	2023-05-15	0.70	Ian Mondrow	Complete review of assembled IRRs on IGUA evidence and final instructions to finalize and file;
IE-IRR	2023-05-16	1.90	Ian Mondrow	Final instructions regarding filing of IGUA IRRs; further consideration and correspondence regarding circulation of filings in manageable pieces;
IEP	2023-05-16	0.50	Ian Mondrow	Review S. Cleary interim invoice against retainer terms and review legal fees budget update;
IEP	2023-05-17	0.60	Ian Mondrow	Draft filing letter and provide instructions for Cleary evidence update;
IE-IRR	2023-05-17	1.00	Ian Mondrow	Review incoming IRs on energy transition evidence; transmit applicable IRs to Synapse with additional background information;
COM-CL	2023-05-17	0.30	Ian Mondrow	Review expert retainers and correspondence requesting updates on hours worked; note to N. Sebaa with cost:budget update;
COM-CL	2023-05-18	0.50	Ian Mondrow	Call with S. Rahbar regarding status update;
IE-IRR	2023-05-18	1.40	Ian Mondrow	Review incoming IRs and forward to A. Hopkins for response;
SCP	2023-05-18	0.40	Ian Mondrow	Intervenor correspondence and correspondence with D. Madsen regarding information for Settlement Conference;
RAE	2023-05-19	2.40	Ian Mondrow	Review updated cost allocation and rate design filing and note to B. Knecht with updated materials and questions;
SCP	2023-05-19	0.20	Ian Mondrow	Intervenor correspondence regarding Settlement Conference preparation;
SCP	2023-05-19	0.50	Ian Mondrow	Review recent correspondence with B. Knecht and A. Vachon (IGUA) regarding cost allocation and rate design questions and IGUA member impacts;
SCP	2023-05-20	3.00	Ian Mondrow	Commence detailed review of B. Knecht report on cost allocation and rate design issues;
SCP	2023-05-22	0.30	Ian Mondrow	Review D. Madsen calculations regarding adjusted net salvage parameters;
IE-IRR	2023-05-22	3.70	Ian Mondrow	Review Synapse draft IRRs and provide comments;
SCP	2023-05-22	0.20	Ian Mondrow	Review D. Madsen response to request for calculation of revenue requirement impact of net salvage recommendations and correspondence for discussion with M. Rubenstein (SEC) and D. Madsen to review;
COM-OP	2023-05-23	2.80	Ian Mondrow	Intervenor Settlement Conference co-ordination meeting;
SCP	2023-05-23	3.30	Ian Mondrow	Meeting with M. Rubenstein and D. Madsen to review depreciation calculation issues; drafting note to EGI requesting alternative depreciation parameter calculations in preparation for settlement discussions; review OEB letter

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				regarding energy transition considerations for Settlement Conference; review EGI letter regarding green hydrogen responding evidence intent;
IE-IRR	2023-05-23	0.20	Ian Mondrow	Correspondence regarding Synapse IRRs;
COM-CL	2023-05-23	0.90	Ian Mondrow	Update and issues discussion with S. Rahbar;
IRR	2023-05-24	0.50	Ian Mondrow	Review LEI IRRs;
IE-IRR	2023-05-24	1.20	Ian Mondrow	Review revised Synapse IRRs and provide further comments/clarifications and provide final filing instructions;
IRR	2023-05-25	0.60	Ian Mondrow	Complete review of LEI IRRs; review OPI IRRs;
IRR	2023-05-25	0.40	Ian Mondrow	Review recent filings (IRRs and EGI correspondence);
COM-OP	2023-05-25	4.10	Ian Mondrow	Intervenor subgroup call regarding energy transition; review B. Knecht materials regarding cost allocation and discussion with City of Kitchener concerning common interests; correspondence with B. Yauch for APPrO regarding T2 rate impacts issues; correspondence with M. Rubenstein relating to PDO "double recovery" issue;
SCP	2023-05-26	0.20	Ian Mondrow	Correspondence regarding requested depreciation figures for Settlement Conference;
SCP	2023-05-26	1.20	Ian Mondrow	Review pre-Settlement Conference correspondence (questions and positions circulated); conference with APPrO (B. Yauch) regarding potential common issues;
SCP	2023-05-26	2.80	Ian Mondrow	Call with B. Knecht and IGUA to review cost allocation and rate design topics;
SCP	2023-05-27	3.30	Ian Mondrow	Review pre-Settlement Conference intervenor correspondence and position summaries circulated;
SCP	2023-05-28	0.20	Ian Mondrow	Correspondence with S. Rahbar regarding settlement discussion issues;
SCP	2023-05-28	2.80	Ian Mondrow	Review correspondence between parties in preparation for Settlement Conference;
SCA	2023-05-29	7.00	Ian Mondrow	Attend Settlement Conference;
COM-CL	2023-05-29	0.10	Ian Mondrow	Update note to S. Rahbar;
SCP	2023-05-30	2.50	Ian Mondrow	Correspondence with other intervenors regarding issues/settlement discussions;
SCA	2023-05-30	7.70	Ian Mondrow	Attend Settlement Conference;
SCA	2023-05-31	7.20	Ian Mondrow	Attend Settlement Conference;
SCP	2023-05-31	0.30	Ian Mondrow	Review correspondence with client/expert regarding cost allocation issues;
SCP	2023-05-31	1.60	Ian Mondrow	Intervenor correspondence regarding settlement discussions formulating proposal to resolve certain issues;

Total Fees for Professional Services

Terms: payment due within 30 days of invoice date
Interest at the rate of 4.8% per annum will be charged on all amounts not paid within 30 days of invoice date
Errors and omissions excluded

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SUMMARY OF FEES

TK Name	Hours
Mondrow, Ian	95.40
Total	95.40



As of July-11-23 12:22:00 AM

Client Code 190123
Client Name Industrial Gas Users Association
Nature of Client Business Oil & Gas

Matter Code T1029927
Matter Name EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)
Client Reference Code
Practice Area of Work Energy (SA10)
Status Open Open and Active

Close Date
Billing Professional Mondrow, Ian (1760)

WIP Fees Detail

All Timekeepers



	Date	Timekeeper	Remarks	Hours
SCP	Jun 1, 2023	Mondrow, Ian 1760	Review materials in preparation for Settlement Conference; correspondence with OEB Staff and M. Rubenstein regarding OEB approach to indigenous related regulatory obligations; review and comment on intervenor material circulated in support of settlement proposal;	1.2
SCA	Jun 1, 2023	Mondrow, Ian 1760	Attend Settlement Conference;	6.4
SCA	Jun 2, 2023	Mondrow, Ian 1760	Attend Settlement Conference;	7.6
SCP	Jun 3, 2023	Mondrow, Ian 1760	Correspondence with D. Madsen regarding input in support of Settlement Conference discussions (and related confidentiality requirements);	0.7
SCP	Jun 4, 2023	Mondrow, Ian 1760	Review Settlement Conference-related correspondence among intervenors;	0.7
SCA	Jun 5, 2023	Mondrow, Ian 1760	Attend Settlement Conference and continue review of materials and intervenor correspondence regarding settlement issues;	9.0
COM-CL	Jun 6, 2023	Mondrow, Ian 1760	Update discussion with S. Rhabar and update note for members;	1.3
SCA	Jun 6, 2023	Mondrow, Ian 1760	Attend Settlement Conference and continue work with intervenors on settlement issues/proposals;	7.9
SCA	Jun 7, 2023	Mondrow, Ian 1760	Attend Settlement Conference;	7.9
COM-CL	Jun 8, 2023	Mondrow, Ian 1760	Response to A. Hopkins on hearing scheduling expectations and fees update to IGUA;	0.2
SCP	Jun 8, 2023	Mondrow, Ian 1760	Correspondence with intervenors regarding settlement positions;	0.6
SCP	Jun 8, 2023	Mondrow, Ian 1760	Intervenor correspondence regarding clarification of settlement proposal and reconvening;	0.6
SCP	Jun 8, 2023	Mondrow, Ian 1760	Reviewing material on 2024 rate changes in preparation for reconvening of settlement conference;	0.9
SCA	Jun 8, 2023	Mondrow, Ian 1760	Attend Settlement Conference;	4.2
SCA	Jun 9, 2023	Mondrow, Ian 1760	Attend Settlement Conference;	4.0
COM-CL	Jun 12, 2023	Mondrow, Ian 1760	Interim update to client and experts regarding conclusion of Settlement Conference; timing for further settlement details; and preparation for the oral hearing;	0.3
PSP	Jun 12, 2023	Mondrow, Ian 1760	Review proposed EGI communication to OEB Staff regarding issues settled; discussions with M. Rubenstein relating to proposed communication, and consider whether changes required to provide formal response to OEB's late day letter requesting public filing;	1.7
PSP	Jun 13, 2023	Mondrow, Ian 1760	Review additional intervenor correspondence on settlement confirmation and associated filing requested by the OEB; review and comment on draft EGI settlement advice letter to the OEB;	0.4
COM-CL	Jun 14, 2023	Mondrow, Ian 1760	Discussion with S. Rhabar regarding various issues for hearing;	0.7
RAE	Jun 15, 2023	Mondrow, Ian 1760	Review IRP material in context of rebasing issues;	0.4
PSP	Jun 15, 2023	Mondrow, Ian 1760	Review intervenor correspondence and discussions regarding ongoing settlement discussions and hearing logistics;	1.8
SUB	Jun 16, 2023	Mondrow, Ian 1760	Drafting OEB letter regarding in-person hearing and interim cost awards;	1.0
SCA	Jun 16, 2023	Mondrow, Ian 1760	Attend continuation of Settlement Conference;	3.8

	Date	Timekeeper	Remarks	Hours
PSP	Jun 17, 2023	Mondrow, Ian 1760	Reviewing intervenor correspondence regarding settlement discussions issues;	0.4
RAE	Jun 17, 2023	Mondrow, Ian 1760	Review transmittal letter for EGI capital plan update; attempts to download and open document; note to intervenors regarding apparent scope of update and concerns;	0.6
PSP	Jun 18, 2023	Mondrow, Ian 1760	Complete review of, and comment on, draft Settlement Agreement;	2.5
RAE	Jun 19, 2023	Mondrow, Ian 1760	Review capital update;	0.5
PSP	Jun 19, 2023	Mondrow, Ian 1760	Review intervenor correspondence and Settlement Agreement mark-ups and additional notes regarding revisiting potential settlement on particular issue; intervenor conference to discuss;	2.6
RAE	Jun 20, 2023	Mondrow, Ian 1760	Continue review of EGI capital update filing;	0.3
PSP	Jun 20, 2023	Mondrow, Ian 1760	Further intervenor correspondence regarding review of draft Settlement Agreement;	1.1
PSP	Jun 21, 2023	Mondrow, Ian 1760	Intervenor correspondence regarding ongoing work to write up Settlement Proposal;	0.1
COM-OP	Jun 21, 2023	Mondrow, Ian 1760	Review intervenor correspondence regarding need for follow-on updates to capital update;	0.3
RAE	Jun 21, 2023	Mondrow, Ian 1760	Conclude review of capital update filing;	0.8
COM-OP	Jun 22, 2023	Mondrow, Ian 1760	Review additional intervenor correspondence regarding capital update and hearing implications;	0.1
RAE	Jun 22, 2023	Mondrow, Ian 1760	Review EGI letter advising of intention for further capital update evidence and hearing presentation scheduling;	0.2
COM-CL	Jun 22, 2023	Mondrow, Ian 1760	Report to IGUA and member on reference in EGI "blue hydrogen" reply evidence to member's work on hydrogen production;	0.3
RAE	Jun 22, 2023	Mondrow, Ian 1760	Review EGI reply evidence regarding Blue Hydrogen;	0.4
COM-OP	Jun 23, 2023	Mondrow, Ian 1760	Party correspondence regarding capital update additional filings and "Phase 3" timing;	0.4
COM-CL	Jun 23, 2023	Mondrow, Ian 1760	Discussion with S. Rahbar to update and discuss upcoming process;	0.5
COM-CL	Jun 23, 2023	Mondrow, Ian 1760	Review P.O. No. 6 and update to client; directions regarding preparation of interim cost award;	0.5
OHP	Jun 24, 2023	Mondrow, Ian 1760	Update note regarding hearing process and schedule to IGUA experts;	0.4
PSP	Jun 24, 2023	Mondrow, Ian 1760	Full review of Settlement Proposal draft 2 and draft accounting orders;	1.6
COM-CL	Jun 24, 2023	Mondrow, Ian 1760	Develop hearing and argument phase fees forecast (legal and expert) and provide to S. Rahbar; instructions for preparation of interim cost claim;	2.3
PSP	Jun 26, 2023	Mondrow, Ian 1760	Review intervenor comments/notes on draft two of Settlement Proposal;	0.4
SCP	Jun 26, 2023	Mondrow, Ian 1760	Reporting note to S. Rahbar regarding settlement discussions on issue 4 and discussion to obtain instructions;	0.6
SCP	Jun 26, 2023	Mondrow, Ian 1760	Intervenor correspondence regarding outstanding Settlement Proposal issues;	1.3
SCA	Jun 27, 2023	Mondrow, Ian 1760	Participate in reconvened intervenor discussion regarding Settlement Proposal and further correspondence;	1.6
PSP	Jun 28, 2023	Mondrow, Ian 1760	Review further settlement correspondence regarding finalizing discussions and proposal;	0.7
COM-CL	Jun 28, 2023	Mondrow, Ian 1760	Discussion with S. Rahbar regarding update on forecast work/budget and develop updated forecast summary for IGUA review;	1.3
PSP	Jun 28, 2023	Mondrow, Ian 1760	Further correspondence regarding finalization of Settlement Proposal;	1.7
			TOTAL	86.8

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	NEW PARTICIPANT No	NON-FILING PARTICIPANT F. NAME	NON-FILING PARTICIPANT L. NAME
SERVICE PROVIDER TYPE* Articling Student/Paralegal	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE*	HOURLY RATE 100
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Required	LAST CV DATE	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
1.90	190.00	24.70	214.70			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence		100		13.00		
DISCOVERY						
Preparation of Interrogatories	0.30	100	30.00	13.00	3.90	33.90
Review Interrogatory Responses		100		13.00		
Technical Conference Preparation		100		13.00		
Technical Conference Attendance		100		13.00		
Technical Conference Follow Up		100		13.00		
ISSUES LIST						
Preparation		100		13.00		
Attendance at Issues Conference		100		13.00		
INTERVENOR EVIDENCE						
Preparation	1.00	100	100.00	13.00	13.00	113.00
Interrogatory Responses		100		13.00		
Preparation of Witness(es) for Attendance at Hearing		100		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		100		13.00		
Attendance		100		13.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		100		13.00		
Attendance at Presentation to Panel		100		13.00		
ORAL HEARING						
Preparation		100		13.00		
Attendance at Oral Hearing		100		13.00		
SUBMISSIONS						
Written Submissions	0.60	100	60.00	13.00	7.80	67.80
Oral Submissions		100		13.00		
Attendance at Oral Submissions		100		13.00		
OTHER ATTENDANCE						
Other Attendance		100		13.00		
COMMUNICATION						
With Client		100		13.00		
With Other Parties		100		13.00		
MOTIONS						
Preparation of Motion(s) Materials		100		13.00		
Prepare Submissions on the Motion(s)		100		13.00		
Attendance at Hearing on Motion(s)		100		13.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		100		13.00		
Prepare Submissions on Confidentiality		100		13.00		
Attendance at Hearing on Confidentiality		100		13.00		
DECISION						
Review		100		13.00		
RATE ORDER						
Review		100		13.00		
Prepare Submission on Rate Order		100		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	1.90		190.00		24.70	214.70

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	Time Docket	
CostClaim_Galler_TimeDockets_20230712.pdf		

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	Time Docket	Hearings	
CostClaim_Galler_TimeDockets_20230712.pdf			

December 31, 2022

INVOICE: 19990224

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-OP	2022-12-01	2.10	Ian Mondrow	Intervenor meeting to continue discussion of issues and potential experts;
COM-CL	2022-12-01	0.60	Ian Mondrow	Discussion with S. Rahbar regarding IGUA issues/potential experts and work plan;
SUB	2022-12-02	0.10	Ian Mondrow	Review and finalize intervention letter;
SUB	2022-12-05	0.20	Cathy Galler	Formatting and filing intervention request letter;
COM-OP	2022-12-05	0.40	Ian Mondrow	Review intervenor correspondence and consolidated working issues list incorporating additional topics;
RAE	2022-12-06	0.50	Ian Mondrow	Continue review of pre-filed material;
RAE	2022-12-08	2.80	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-08	1.00	Ian Mondrow	Interim note to IGUA on EGI evidence regarding energy transition business risk and potential impact on expert evidence under consideration' discussion with S. Rahbar regarding experts and other application issues;
IEP	2022-12-09	0.10	Ian Mondrow	Correspondence with potential expert regarding materials to review;
RAE	2022-12-09	1.00	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-12	2.30	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-13	0.70	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-13	0.10	Ian Mondrow	Correspondence with S. Rahbar regarding package from pre-filed material for expert input;
COM-CL-2.0 RAE-0.2	2022-12-14	2.20	Ian Mondrow	Review correspondence from external advisors and assemble information packages for them; discussion with S. Rahbar regarding timing and next steps on application issues definition and summary report for planning; review reference materials regarding previous equity thickness consideration for EGI;
RAE	2022-12-15	2.40	Ian Mondrow	Continue review of pre-filed materials;
IEP	2022-12-15	1.10	Ian Mondrow	Discussion with potential external advisor;
COM-OP	2022-12-16	1.30	Ian Mondrow	Call with intervenor representatives regarding various issues/expertise/co-ordination;
RAE	2022-12-16	1.50	Ian Mondrow	Continue review of pre-filed materials; review Procedural Order No. 1;
COM-CL	2022-12-16	0.30	Ian Mondrow	Interim update to IGUA regarding Procedural Order, dates for expert proposals and main drivers of revenue deficiency in 2024;

December 31, 2022

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RAE	2022-12-17	1.50	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-19	3.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-20	2.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2022-12-21	3.70	Ian Mondrow	Continue review of pre-filed material;
COM-CL	2022-12-22	2.30	Ian Mondrow	Call with S. Rahbar and follow-up note summarizing revenue requirement impact of the application, over the term of the proposed rate plan; call with S. Rahbar and A. Hopkins (Synapse); discussion with intervenor regarding cost of capital issue and approach;
COM-OP	2022-12-26	1.20	Ian Mondrow	E-mail inquiries of SEC counsel and others on equity thickness topic; evaluation of EGI position and alternative approaches;
IEP	2022-12-27	2.10	Ian Mondrow	Background reading on cost of capital topic (OEB policy and evidence from recent Quebec inquiry) and notes for further discussion with potential expert;
COM-OP	2022-12-27	0.20	Ian Mondrow	Correspondence with D. Quinn regarding concerns on storage vs. delivered supply and ICF report;
COM-OP	2022-12-28	0.20	Ian Mondrow	Further correspondence with SMEs regarding cost of capital issues/approach;
COM-CL	2022-12-29	2.50	Ian Mondrow	Call with IGUA and potential expert to review issues; call with contact regarding additional potential experts;
COM-OP	2022-12-30	1.80	Ian Mondrow	Correspondence with other intervenors regarding various issues of interest and current thinking; correspondence with potential experts regarding possible scopes of work; note to K. Elson and D. Poch to share current thinking on energy transition work and co-ordinate;
COM-CL	2022-12-30	0.40	Ian Mondrow	Update note to IGUA regarding communications with respect to potential experts to date and follow-up considerations;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	0.20
Mondrow, Ian	42.60
Total	42.80

February 17, 2023
INVOICE: 20005427

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
RAE	2023-01-08	2.10	Ian Mondrow	Continue review of pre-filed materials;
ILP	2023-01-08	0.50	Ian Mondrow	Review draft Issues List comments circulated among intervenors in preparation for Issues Conference;
AIC	2023-01-09	6.40	Ian Mondrow	Attend Issues Conference;
IEP	2023-01-09	0.50	Ian Mondrow	Review correspondence with IGUA and potential experts regarding issues and possible work scopes;
RAE	2023-01-10	0.50	Ian Mondrow	Continue review of pre-filed materials;
ILP	2023-01-10	0.10	Ian Mondrow	Correspondence among parties further to Issues List resolution;
IEP	2023-01-10	2.70	Ian Mondrow	Conferences with S. Rahbar and potential experts regarding work scopes and workplan and follow-up correspondence;
ILP	2023-01-10	0.50	Ian Mondrow	Review and comment on revised draft Issues List;
COM-CL-1.0 SUB-4.0	2023-01-11	5.00	Ian Mondrow	Call with IGUA and potential expert; follow-up discussion with IGUA regarding all potential experts and how to balance/determine proposal to advance to OEB for approval; consider and draft IGUA expert evidence sponsorship proposal and circulate to client and co-ordinating intervenors for review and comment; review OEB Staff letter regarding extension to procure expert proposals and consider and first draft of responding letter and transmission to client for review and consideration;
RAE	2023-01-11	0.60	Ian Mondrow	Continue review of pre-filed materials;
RAE	2023-01-12	0.70	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-12	6.70	Ian Mondrow	Continue work on expert proposals, including detailed review with S. Rahbar regarding individual expert discussions and work scopes;
SUB	2023-01-13	5.10	Ian Mondrow	Continue work on expert proposal submission and conference with S. Rahbar and N. Sebaa to discuss and finalize; develop IGUA/expert work plan;
ILP-0.3 COM-CL-0.2	2023-01-13	0.50	Ian Mondrow	Review revised draft Issues List and draft transmittal letter and comments from Issues Conference participants; review OEB response to OEB Staff letter regarding expert retainer status and dates and update note to IGUA;
COM-OP	2023-01-14	0.30	Ian Mondrow	Review J.C. Shepherd letter regarding support for proposed expert witnesses and provide note of clarification regarding scope for proposed IGUA evidence;
SUB	2023-01-16	0.40	Cathy Galler	Formatting and filing Proposal to File Expert Evidence and

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				Comment on Issues List;
<u>SUB-2.5</u> <u>IEP-0.7</u>	2023-01-16	3.20	Ian Mondrow	<u>Review and finalize work on expert evidence proposal, including workplan and budgets; review submissions of other parties; update to experts with workplan;</u>
ILP	2023-01-16	1.20	Ian Mondrow	Review OEB Staff submission on Issues List and draft comment for filing; review issues submissions from others;
IEP	2023-01-17	3.60	Ian Mondrow	Working with IGUA on final expert retainer arrangements;
ILP	2023-01-17	0.10	Ian Mondrow	Review balance of Issues submissions filed;
COM-CL	2023-01-17	1.50	Ian Mondrow	Briefing IGUA Caucus regarding status and Issues identified;
RAE	2023-01-19	0.40	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-19	1.00	Ian Mondrow	Further correspondence/discussions with experts to finalize detailed engagement terms;
IEP	2023-01-20	0.30	Ian Mondrow	Further correspondence to resolve terms of expert retainers;
COM-CL	2023-01-20	0.60	Ian Mondrow	Review OEB Staff letter regarding progress on proposed expert retainers and update to client and IGUA's proposed experts;
RAE	2023-01-23	2.80	Ian Mondrow	Continue review of pre-filed materials;
IEP	2023-01-24	1.30	Ian Mondrow	Work with IGUA on finalizing expert retainers;
RAE	2023-01-24	2.20	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2023-01-24	1.10	Ian Mondrow	Consideration of, correspondence with other parties regarding PDO "double payment" issue and formulating interrogatory approach to the issue;
COM-CL	2023-01-24	0.40	Ian Mondrow	Client update for report to members;
RAE	2023-01-25	1.60	Ian Mondrow	Continue review of pre-filed materials;
COM-OP	2023-01-25	0.20	Ian Mondrow	Intervenor group e-mail regarding rate harmonization proposals;
COM-CL	2023-01-25	0.10	Ian Mondrow	Further communication internally regarding expert work plans;
<u>COM-OP-0.3</u> <u>COM-CL-0.4</u>	2023-01-26	0.70	Ian Mondrow	<u>Further intervenor correspondence regarding rate harmonization proposal; notes to IGUA cost allocation advisor regarding rate harmonization discussion and further information on Panhandle/St. Clair allocation issue;</u>
RAE	2023-01-26	1.00	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-01-27	1.10	Ian Mondrow	Continue review of materials;
COM-CL	2023-01-27	0.60	Ian Mondrow	Update client and experts regarding decision on evidence proposals and note interrogatory delivery date in workplan;
RAE	2023-01-27	0.50	Ian Mondrow	Review P.O. No. 2 regarding issues and expert evidence proposal determinations;
RAE	2023-01-28	3.10	Ian Mondrow	Continue review of pre-filed material;
RAE	2023-01-30	3.40	Ian Mondrow	Continue review of pre-filed materials;

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COM-OP	2023-01-30	0.30	Ian Mondrow	Discussion with other parties regarding upcoming process;
IRP	2023-01-30	0.60	Ian Mondrow	Communciations with experts regarding interrogatory formatting and with R. Knecht relating to rate design issues;
COM-CL	2023-01-31	0.90	Ian Mondrow	Correspondence with experts regarding issues and interrogatories; review N. Sebaa revisions to schedule regarding expert and IGUA Caucus; discussions; review OEB Staff letter relating to scope of depreciation evidence and note to D. Madsen regarding degree of potential overlap;
RAE	2023-01-31	0.60	Ian Mondrow	Continue review of pre-filed material;

Total Fees for Professional Services

SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	0.40
Mondrow, Ian	66.60
Total	67.00

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Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-CL	2023-04-01	0.20	Ian Mondrow	Ensure experts workplan dates are current and fees update to IGUA;
COM-OP	2023-04-01	0.30	Ian Mondrow	Review EGI letter responding to ED letter regarding additional evidence on carbon footprint of blue hydrogen; review intervenor correspondence regarding Panhandle/St. Clair system cost allocation;
TCA	2023-04-01	0.20	Ian Mondrow	Review B. Knecht reports on Friday's Technical Conference; review S. Cleary input on IRR follow-up;
TCA	2023-04-03	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-03	5.00	Ian Mondrow	Complete review of D. Madsen draft evidence and provide comments/questions for further consideration; review Synapse draft evidence and provide comments/considerations;
IEP	2023-04-04	2.40	Ian Mondrow	Review Synapse modelling description document; call with IGUA and experts to review draft evidence; review notes from experts regarding work updates and additional comments;
RAE	2023-04-04	0.40	Ian Mondrow	Review EGI letter regarding updated Guidehouse pathways study and impact on filing of ED/GEC pathways evidence, and note to A. Hopkins to consider and advise of any concerns;
COM-CL	2023-04-05	0.40	Ian Mondrow	Update to S. Rahbar and IGUA Ontario Caucus chair;
TCA	2023-04-05	0.60	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
COM-OP	2023-04-05	0.30	Ian Mondrow	Review Procedural Order 4; intervenor correspondence;
TCA	2023-04-06	0.40	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
IEP	2023-04-06	0.60	Ian Mondrow	Discussion with C. Hummel regarding equity thickness OEB policy questions for response and provide guidance note;
COM-OP	2023-04-06	0.30	Ian Mondrow	Correspondence with M. Rubenstein regarding EGI proposal on Guidehouse update and Neme evidence filing;
COM-OP	2023-04-07	0.30	Ian Mondrow	Correspondence with D. Poch regarding motions and EGI proposal regarding pathways/C. Neme evidence;
COM-CL	2023-04-07	0.70	Ian Mondrow	Retrieve Technical Conference undertaking responses and forward to IGUA experts; review recent correspondence with IGUA experts;

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RAE	2023-04-07	0.60	Ian Mondrow	Review EGI/Guidehouse update filing;
IEP	2023-04-08	2.90	Ian Mondrow	Review S. Cleary draft evidence and provide comments;
TCA	2023-04-10	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-10	1.10	Ian Mondrow	Correspondence with experts to clarify cross-references in draft evidence and regarding evidence revision and finalization; correspondence with experts regarding potential revised schedule and response to OEB Staff;
COM-CL	2023-04-10	1.20	Ian Mondrow	Review e-mail inquiries from members regarding rate changes, provide preliminary responses, and inquiry of B. Knecht for assistance in validating rate impacts;
COM-OP	2023-04-10	1.00	Ian Mondrow	Review ED and SEC motions day letters and share with IGUA business risk experts;
IEP	2023-04-11	4.60	Christopher Hummel	Prepared and circulated Expert Form A for A. Hopkins, S. Cleary, and D. Madsen; researched history of OEB's equity thickness test and drafted analysis on rationale for I. Mondrow;
TCA	2023-04-11	0.40	Ian Mondrow	Continue review of Technical Conference transcripts in lieu of attendance;
COM-OP	2023-04-11	1.70	Ian Mondrow	Correspondence/discussions with parties regarding proposed updated schedule;
COM-CL	2023-04-11	0.50	Ian Mondrow	Update notes to client and experts on evolving rescheduling discussions and revision of expert work plan timing to finalize evidence and prepare for IRs;
IEP	2023-04-12	0.70	Ian Mondrow	Reviewing C. Hummel reporting note on cost of capital policy research and interim note to A. Hopkins with relevant OEB materials;
IEP	2023-04-12	1.50	Ian Mondrow	Correspondence with experts and discussion with S. Rahbar regarding status of work and finalizing evidence;
COM-OP	2023-04-12	0.40	Ian Mondrow	Review EGI response to motions day submissions and consider;
IEP	2023-04-13	0.30	Ian Mondrow	Review recent IGUA expert correspondence;
RAE	2023-04-13	0.50	Ian Mondrow	Review EGI filing updates;
IEP	2023-04-13	1.20	Ian Mondrow	Review Procedural Order No. 5 and revised experts work plan accordingly; circulate revised work plan with covering note highlighting next steps;
AHM	2023-04-14	1.00	Ian Mondrow	Review Motions Day transcript in lieu of attendance;
COM-OP	2023-04-14	0.70	Ian Mondrow	Discussion with D.R. Quinn regarding T2 cost allocation issue;
IEP	2023-04-16	3.00	Ian Mondrow	Full review and additional comment on S. Cleary draft evidence;
IEP	2023-04-17	2.80	Ian Mondrow	Final review of S. Cleary evidence changes and instructions for assembly; review D. Madsen revised draft evidence;

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IEP	2023-04-18	4.80	Ian Mondrow	Continued detailed review and comment on expert evidence;
TC-FOL-UP	2023-04-18	0.50	Ian Mondrow	Review EGI updated Technical Conference responses for IGUA cost allocation matters; note to B. Knecht regarding status and next steps on cost allocation and rate design work;
COM-CL	2023-04-19	0.80	Ian Mondrow	Update to Ontario Caucus;
IEP	2023-04-19	0.20	Ian Mondrow	Review additional revisions to D. Madsen evidence;
IEP	2023-04-20	1.90	Ian Mondrow	Final review of S. Cleary evidence as formatted for filing and filing directions provided; correspondence with other experts regarding work status/finalizing evidence;
COM-CL-0.7 COM-OP-0.7	2023-04-20	1.40	Ian Mondrow	Review and consider note from intervenor regarding load balancing cost allocation, review associated evidence, and forward to B. Knecht for consideration; review IGUA approach to calculation of member rate impacts; call with A. Vachon (IGUA) to review approach to rate impact calculations;
IEP	2023-04-21	1.00	Cathy Galler	Formatting and filing expert evidence;
IEP	2023-04-21	1.90	Ian Mondrow	Review and final instructions for compilation and filing of IGUA sponsored evidence; drafting evidence transmittal letter;
RAE	2023-04-21	2.00	Ian Mondrow	Review EGI gas supply plan update regarding relevance to IGUA members and rebasing application topics; review EGI updates and parties' evidence filed;
COM-CL	2023-04-21	1.00	Ian Mondrow	Call with IGUA Ontario Caucus chairs (outgoing and incoming) regarding next update to Caucus and Board of Directors;
RAE	2023-04-21	0.60	Ian Mondrow	Review Guidehouse update and related EGI filing; note to A. Hopkins regarding next steps in finalizing Synapse evidence;
RAE	2023-04-22	2.80	Ian Mondrow	Review LEI evidence filed by OEB Staff and note to IGUA cost of capital experts with observations and request for input;
RAE	2023-04-23	1.20	Ian Mondrow	Review AGA/CGA study report referred to in LEI evidence;
RAE	2023-04-23	0.60	Ian Mondrow	Reading OPI and FRPO evidence;
RAE-1.0 IRP-1.4	2023-04-24	2.40	Ian Mondrow	Continue review of intervenor evidence filed and related correspondence with IGUA experts; drafting proposed IRs on intervenor/Staff evidence;
COM-OP	2023-04-24	0.50	Ian Mondrow	Intervenor correspondence regarding various issues;
RAE	2023-04-25	0.80	Ian Mondrow	Review ED and GEC Technical Conference (P2NZ Update) filings and related materials and update note to A. Hopkins regarding energy transition discussions anticipated;
IEP	2023-04-25	1.20	Ian Mondrow	Review and revise experts work plan and update note to experts and client group regarding upcoming steps and schedule;

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IRP	2023-04-25	0.80	Ian Mondrow	Review and revise IRs for LEI based on S. Cleary input; correspondence with D. Madsen regarding potential IRs for Intergroup;
IEP	2023-04-26	0.30	Ian Mondrow	Correspondence with experts regarding work plan;
COM-CL	2023-04-26	0.20	Ian Mondrow	Update note to IGUA;
RAE	2023-04-26	2.20	Ian Mondrow	Review Intergroup depreciation evidence;
TCP	2023-04-26	0.30	Ian Mondrow	Review correspondence regarding scope of Technical Conference (and ED materials filed);
IRP	2023-04-26	0.60	Ian Mondrow	Review and supplement IRs for LEI based on input from IGUA experts;
RAE	2023-04-26	0.60	Ian Mondrow	Continue review of Intergroup depreciation evidence and question to D. Madsen; correspondence with K. Elson (ED) regarding implications of further Guidehouse report discovery;
IRP	2023-04-27	0.30	Cathy Galler	Formatting and filing IRs to LEI;
RAE	2023-04-27	3.10	Ian Mondrow	Complete review of Intergroup evidence;
TCA	2023-04-27	1.30	Ian Mondrow	Attend Technical conference continuation;
IRP	2023-04-27	0.30	Ian Mondrow	Final review and revision to IRs for LEI;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Review transcripts in lieu of attendance;
IE-IRR	2023-04-28	0.10	Ian Mondrow	Review IRs received on IGUA evidence and distribute to experts for consideration and response;
IRP	2023-04-28	1.40	Ian Mondrow	Review comments from D. Madsen and draft IRs for Intergroup;
IE-IRR	2023-04-28	1.00	Ian Mondrow	Continue review of IRs received and distribute to experts for response;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Continue review of transcript in lieu of attendance;
COM-OP	2023-04-28	0.20	Ian Mondrow	Correspondence with K. Elson regarding issues of common interest;
IE-IRR	2023-04-29	1.70	Ian Mondrow	Review IRs received and dispatch to experts for drafting responses as appropriate;

Total Fees for Professional Services

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SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	1.30
Hummel, Christopher	4.60
Mondrow, Ian	73.70
Total	79.60

Sean Cleary

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Sean	NON-FILING PARTICIPANT L. NAME Cleary
SERVICE PROVIDER TYPE* Consultant	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 34	HOURLY RATE 330
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
105.00	34,650.00	4,504.50	39,154.50			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	18.70	330	6,171.00	13.00	802.23	6,973.23
DISCOVERY						
Preparation of Interrogatories	14.30	330	4,719.00	13.00	613.47	5,332.47
Review Interrogatory Responses	6.00	330	1,980.00	13.00	257.40	2,237.40
Technical Conference Preparation		330		13.00		
Technical Conference Attendance		330		13.00		
Technical Conference Follow Up		330		13.00		
ISSUES LIST						
Preparation		330		13.00		
Attendance at Issues Conference		330		13.00		
INTERVENOR EVIDENCE						
Preparation	63.50	330	20,955.00	13.00	2,724.15	23,679.15
Interrogatory Responses	2.50	330	825.00	13.00	107.25	932.25
Preparation of Witness(es) for Attendance at Hearing		330		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		13.00		
Attendance		330		13.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		13.00		
Attendance at Presentation to Panel		330		13.00		
ORAL HEARING						
Preparation		330		13.00		
Attendance at Oral Hearing		330		13.00		
SUBMISSIONS						
Written Submissions		330		13.00		
Oral Submissions		330		13.00		
Attendance at Oral Submissions		330		13.00		
OTHER ATTENDANCE						
Other Attendance		330		13.00		
COMMUNICATION						
With Client		330		13.00		
With Other Parties		330		13.00		
MOTIONS						
Preparation of Motion(s) Materials		330		13.00		
Prepare Submissions on the Motion(s)		330		13.00		
Attendance at Hearing on Motion(s)		330		13.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		13.00		
Prepare Submissions on Confidentiality		330		13.00		
Attendance at Hearing on Confidentiality		330		13.00		
DECISION						
Review		330		13.00		
RATE ORDER						
Review		330		13.00		
Prepare Submission on Rate Order		330		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	105.00		34,650.00	4,504.50		39,154.50

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim	CV	
CostClaim_Cleary CV_20230712.pdf		
IGUA_EB-2022-0200_Interim	Time Docket	
CostClaim_Cleary TimeDockets_20230712.pdf		
IGUA_EB-2022-0200_Interim	Invoice	
CostClaim_Cleary_Invoice_20230712.pdf		

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Cleary CV_20230712.pdf	CV	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Cleary_TimeDockets_20230712 .pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Cleary_Invoice_20230712.pdf	Invoice	Hearings	

Sean Cleary
Time Sheet for UCA
February 1 - May 15, 2023

<u>Date</u>	<u>Hours</u>	<u>Task(s)</u>	<u>Categories</u>	
02-Feb	3	Review Concentric and EGI Evidence and Prepare IRs	RAE - 1.5	IR - 1.5
03-Feb	4	Review Concentric and EGI Evidence and Prepare IRs	RAE - 2.0	IR - 2.0
04-Feb	5.5	Review Concentric and EGI Supporting Schedules in detail for IRs	RAE	
05-Feb	9.5	Review Concentric and EGI Evidence and Prepare IRs	RAE - 4.5	IR - 5.0
06-Feb	8.5	Review Concentric and EGI Evidence and Prepare IRs	RAE - 4.0	IR - 4.5
07-Feb	1	Review Concentric and EGI Evidence and Prepare IRs	RAE - 0.5	IR - 0.5
10-Feb	1	Review Concentric and EGI Evidence and Prepare IRs	RAE - 0.5	IR - 0.5
13-Feb	0.5	Review Concentric and EGI Evidence and Prepare IRs	RAE - 0.2	IR - 0.3
02-Mar	1.5	Preparing Outline of evidence	IEP	
06-Mar	1.5	Preparing Outline of evidence	IEP	
09-Mar	3.5	Review IR Responses from Concentric and EGI and Prepare Notes for follow up	RIR	
10-Mar	2.5	Review IR Responses from Concentric and EGI and Prepare Notes for follow up	RIR	
13-Mar	2.5	Prep for call re IR responses (0.5) and Call re IR responses (2.0)	IRR	
14-Mar	4	Preparing Evidence	IEP	
15-Mar	4.5	Preparing Evidence	IEP	
16-Mar	8	Preparing Evidence	IEP	
17-Mar	5	Preparing Evidence	IEP	
26-Mar	3.5	Preparing Evidence	IEP	
28-Mar	11.5	Preparing Evidence	IEP	
29-Mar	14.5	Preparing Evidence	IEP	
31-Mar	9.5	Preparing Evidence	IEP	
01-Apr	4	Preparing Evidence	IEP	
02-Apr	7.5	Preparing Evidence	IEP	
03-Apr	6	Preparing Evidence	IEP	
05-Apr	2.5	Call to discuss evidence (2.25) and review transcript (0.25)	IEP - 2.25	TCA - .25
08-Apr	1.5	Review undertakings and adjust evidence table	IEP	
09-Apr	3	Respond to comments on evidence	IEP	
10-Apr	1	Review and respond to emails re my evidence and others evidence	IEP	
13-Apr	0.75	Review and respond to emails re Chris Huwel summary etc.	IEP	
17-Apr	0.75	Final evidence review	IEP	
23-Apr	0.5	Read emails and browse LEI evidence	IRP	
24-Apr	5	Review LEI evidence and prepare IRs (4.25) plus call with Ian to discuss (0.75)	IRP	
25-Apr	0.5	Review and respond to Ian's comments re IRs on LEI evidence	IRP	
01-May	1	Download and browse IRs on evidence	IRR	
04-May	1	Prepare IR responses	IRR	
07-May	6.5	Prepare IR responses	IRR	
08-May	9.25	Prepare IR responses	IRR	
09-May	4	Prepare IR responses	IRR	
12-May	1	Review Asa's and Chris Nime's evidence	RAE	
13-May	1.5	Respond to Ian's Comments re IR responses	IRR	
15-May	0.25	Respond to Ian's Comments re IR responses	IRR	
Total	162.5			

DR. SEAN CLEARY, CFA

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4014 Bath Road
Kingston, Ontario
K7M 4Y4
M [\(613\) 539-5627](tel:6135395627)

Areas of Interest

Research: Empirical studies in corporate finance and investments.

Teaching: Investments, Business Finance and Corporate Finance. I have also taught numerous courses and delivered seminars in many preparatory programs designed to prepare students to write exams for all three levels of the CFA program and the CSC for over 10 years.

Education

University of Toronto	Ph.D., Finance, 1993 - January, 1998
Saint Mary's University	M.B.A., Finance, 1987-1989
Saint Francis Xavier University	B.Ed., Secondary, 1983-84
Acadia University	B.A., Economics, 1979-1983

Career Experience

Queen's University	Professor of Finance Chair, Institute of Sustainable Finance (July 2018-present) Director of Master of Finance (July 2008 – June 2014; January 2017- December 2022)
Saint Mary's University	Associate Dean and Pengrowth Nova Scotia Professor in Petroleum Financial Management: (July 2007 – June 2008) Professor: (September 2006 – June 2007) Associate Professor: Finance (September 2000 - June 2001, July 2002 – August 2006) Assistant Professor: Finance (July 1998 - August 2000) Lecturer: Finance and Statistics, (1990-1993, Full Time)
York University	Assistant Professor: Finance (July 2001 – June 2002)

The University of Lethbridge

Assistant Professor: Finance (1997- 1998, Full Time)

The University of Toronto

Lecturer: Business Finance (Undergraduate and MBA)
(1994-1997, Part Time)

Ryerson University
Time)

Lecturer: Investment Finance (1994-1997, Full

WSC Investment Services

Instructor for CSC and CFA Seminars and
Prepare Course Materials and Deliver Seminars for various
professional organizations; (1996-present, Part Time)

Royal Bank of Canada

Commercial Lender; (1989-1990, Full Time)

Expert Witness Experience:

September 2019-April 2020 – Utilities Consumer Advocate (UCA) of Alberta
Prepared evidence regarding an appropriate ROE and capital structure for regulated Alberta utilities.

July-November 2018 – Newfoundland Consumer Advocate
Prepared evidence regarding an appropriate capital structure for Newfoundland Power.

September 2017-June 2018 – Utilities Consumer Advocate (UCA) of Alberta
Prepared and testified regarding an appropriate ROE and capital structure for regulated Alberta utilities.

April 2017-September 2018 – Utilities Consumer Advocate (UCA) of Alberta
Preparing evidence and testifying regarding appropriate risk margins for commodity risk for regulated Alberta utilities.

July-October 2016 – Manitoba Public Insurance
Prepared a report and testified regarding interest rate forecasts.

September 2015-July 2016 – Utilities Consumer Advocate (UCA) of Alberta
Prepared and testified regarding an appropriate ROE and capital structure for regulated Alberta utilities.

December 2015-June 2016 – Newfoundland Consumer Advocate
Prepared and testified regarding an appropriate capital structure for Newfoundland Power.

April-November 2014 – Utilities Consumer Advocate (UCA) of Alberta
Prepared and testified regarding appropriate risk margins for commodity risk for regulated Alberta utilities.

December 2013-August 2014 – Utilities Consumer Advocate (UCA) of Alberta
Prepared and testified regarding an appropriate ROE and capital structure for regulated Alberta utilities.

Publications:

Academic Journals:

“The Cost of Delaying to Invest: A Canadian Perspective,” 2022, Forthcoming, Finance Research Letters. Co-authored with Neal Willcott, Smith School of Business, Queen’s University.

“Post-Crisis M&As and the Impact of Financial Constraints” 2020. Journal of Financial Research, Vol 43 No. 2, 407-454. Co-authored with Ashrafee Hossain, Memorial University. Recipient of “Outstanding Article Award” for 2020.

“Institutional Investors, Monitoring and Corporate Finance Policies,” 2017. International Journal of Managerial Finance, Vol. 13, Issue No. 2, 186-212. Co-authored with Jun Wang, The University of Western Ontario. Outstanding Paper Award.

“The Cash Effect and Market Reaction over Three Decades,” 2016. Journal of Accounting and Finance, December 2016, 93-115. Co-authored with Fatma Sonmez, Queen’s University.

“An Efficient and Functional Model for Predicting Bank Distress: In and Out of Sample Evidence,” 2016. Co-authored with Greg Hebb, Dalhousie University. Journal of Banking and Finance, Vol. 64, March 2016, 101–111.

“Managerial Practices and Corporate Social Responsibility,” 2015. Co-authored with Najah Attig, Saint Mary’s University. Journal of Business Ethics, Vol. 131 (No. 1), 121-136.

“Organization Capital and Investment Cash Flow Sensitivity: The Effect of Management Quality Practices,” 2014. Co-authored with Najah Attig, Saint Mary’s University. Lead Article - Financial Management, Vol. 43 (No. 3), 473-504.

“Corporate Legitimacy and Investment-Cash Flow Sensitivity,” 2014. Co-authored with Najah Attig, Saint Mary’s University, Sadok El Ghoul, University of Alberta, and Omrane Guedhami, South Carolina University. Journal of Business Ethics, Vol. 121 (No. 2), 297-314.

“Debt Rating Initiations: Natural Evolution or Opportunistic Behavior?” 2013. Co-authored with Laurence Booth, University of Toronto, and Lynnette Purda, Queen’s University. Journal of Modern Accounting and Auditing, Vol. 9 (No. 12), 1574-1595.

“Institutional Investment Horizons and the Cost of Equity Capital,” 2013, Co-authored with

Najah Attig, Saint Mary's University, Sadok El Ghouli, University of Alberta, and Omrane Guedhami, South Carolina University. Financial Management, Vol. 42 (No.2), 2013, 441-477. Selected as one of 8 papers (since 2005) that was included in a Special Virtual edition on "Monitoring Management," 2018.

"Institutional Investment Horizon and Investment-Cash Flow Sensitivity." Co-authored with Najah Attig, Saint Mary's University, Sadok El Ghouli, University of Alberta, and Omrane Guedhami, South Carolina University. Journal of Banking & Finance, Vol. 36, (No. 4), 2012, 1164-1180.

"Capital Market Developments in the Post-October 1987 Period: A Canadian Perspective." Co-authored with Laurence Booth from the University of Toronto. Review of Accounting and Finance, Vol. 8 (No.2), 2009, 155-175.

"Cash Flow Volatility, Financial Slack and Investment Decisions," 2008, China Finance Review, Number 1, Vol 2, 63-86. Co-authored with Laurence Booth from the University of Toronto.

"The Investment Nature of Income Trusts and Their Role in Diversified Portfolios," Canadian Journal of Administrative Sciences. Co-authored with Greg MacKinnon from Saint Mary's University, (Vol 24(4)), 2007, 314-325.

"The U-Shaped Investment Curve: Theory and Evidence." Co-authored with Paul Povel, University of Minnesota, and Michael Raith, University of Southern California, Lead article, Journal of Financial and Quantitative Analysis, Vol. 42 (No. 1), March 2007, 1-39.

"Financial Constraints and Investment: An Alternative Empirical Framework." Co-authored with Bert D'Espallier, Hasselt University, Anales de Estudios Economicos y Empresariales, Vol. 17, 2007, 9-41.

"Dividend Smoothing and Debt Ratings." Co-authored with Laurence Booth and Varouj Aivazian, both from the University of Toronto. Lead article, Journal of Financial and Quantitative Analysis, Vol. 41(No. 2), June 2006, 439-452.

"International Corporate Investment and the Relationships between Financial Constraint Measures," Journal of Banking and Finance, Volume 30 (5), 2006, 1559-1580.

"Are U.S. Variables Good Predictors of Foreign Equity Risk Premiums?" 2006. Co-authored with John Schmitz, President, Sci-Vest Capital Management Inc., The Cyprus Journal of Sciences.

"Income Trusts: Past Performance and Future Prospects." Co-authored with Greg MacKinnon of Saint Mary's University. Canadian Investment Review, Winter 2005, 53-54.

"Dividend Policy and the Role of Contracting Environments" FSR Forum, December 2005, 13-20. Co-authored with Laurence Booth and Varouj Aivazian, both from the University of Toronto.

"Corporate Investment and Financial Slack: International Evidence," The International Journal of Managerial Finance, 2005, 140-163.

“Industry Affects Do Not Explain Momentum in Canadian Stock Returns,” Investment Management and Financial Innovations, 2005(2), 49-60. Co-authored with John Schmitz, President, Sci-Vest Capital Management Inc., and David Doucette, Saint Mary’s University.

“Do Emerging Market Firms Follow Different Dividend Policies from U.S. Firms?” The Journal of Financial Research, Fall 2003, 371-387. Co-authored with Laurence Booth and Varouj Aivazian, both from the University of Toronto.

“Dividend Policy and the Organization of Capital Markets.” Journal of Multinational Financial Management, Spring 2003, 101-121. Co-authored with Laurence Booth and Varouj Aivazian, both from the University of Toronto.

“The Risk-Adjusted Performance of Closed-End Funds and the Impact of Discounts.” Journal of Today, December 2002, 119-133. Co-authored with Greg Hebb of Dalhousie University and Greg MacKinnon from Saint Mary’s University.

“Transactions Costs for TSE-Listed Stocks,” Canadian Investment Review, Spring 2002, 20-26. Co-authored with John Schmitz, President, Sci-Vest Capital Management Inc., and Kevin Kerr, TD Securities, Toronto.

“What Has Worked on Bay Street,” Canadian Investment Review, Winter 2001, 25-34. Co-authored with John Schmitz, President, Sci-Vest Capital Management Inc.

“The Sensitivity of Canadian Corporate Investment to Liquidity,” Canadian Journal of Administrative Sciences, September 2000, 217-232.

“Diversification with Canadian Stocks: How Much is Enough?” Canadian Investment Review, Fall 1999, 21-25. Co-authored with David Copp, Mount Allison University.

“The Relationship Between Firm Investment and Financial Status,” Journal of Finance, April 1999, 673-692. Received at least one vote from the editorial board for the top Corporate Finance Paper Award during the year of publication.

“Momentum in Canadian Stock Returns,” Canadian Journal of Administrative Sciences, September 1998, 279-291. Co-authored with Michael Inglis, University of Toronto.

One of five nominations for “best 1998 CJAS paper.”

Books and Book Chapters:

Introduction to Corporate Finance, first five editions, John Wiley & Sons Canada Limited. The first three editions were co-authored with Laurence Booth from the University of Toronto (2007, 2010, 2013), and the fourth and fifth editions (2016, 2020) co-authored with Laurence Booth and Ian Rakita from Concordia University. This is an Introductory Canadian Finance text that was written from “scratch.”

Corporate Finance, First US Edition. Co-authored with Laurence Booth from the University of Toronto and Pamela (Petersen) Drake) from Virginia Commonwealth University. John Wiley & Sons. In progress – publication date 2013.

Investments: Analysis and Management, First, Second and Third Canadian Editions, co-authored with Charles P. Jones of North Carolina State University, John Wiley & Sons Canada Limited (1999, 2004, 2008). I was solely responsible for the development of all three Canadian editions, the first being based on an adaptation of the sixth U.S. edition, authored by Professor Jones.

The Canadian Securities Exam Fast Track Study Guide, First, Second, Third and Fourth Editions (2001, 2006, 2009, 2013) – sole author. Published by John Wiley & Sons Canada Limited.

Finance in a Canadian Setting, Sixth Edition, co-authored with Peter Lusztig and Bernard Schwab, both of the University of British Columbia, John Wiley & Sons Canada Limited, March, 2001. I was solely responsible for the development of this edition of the text, based on an adaptation of the fifth edition, authored by Professors Lusztig, Schwab and Randall Morck of University of Alberta.

Market Efficiency, a chapter in the CFA Institute Investment Series book entitled Investments: Principles of Portfolio and Equity Analysis (Wiley, 2011), which is currently used as CFA Level 1 material within the Candidate Body of Knowledge.

“Introduction to Financial Markets,” (on-line course). Developed all seven modules for the Bourse de Montreal, 2002.

“Derivatives for the Retail Investor,” (on-line course). Developed two modules (Forwards and Future, and Options) for the Bourse de Montreal, 2002.

“Derivatives for the Institutional Investor,” (on-line course). Developed two modules (Options and Derivatives for Equity and Index Products) for the Bourse de Montreal, 2002.

“Investment Strategies and Asset Allocation,” Chapter 5, Investment Management Techniques, The Canadian Securities Institute, 1999.

“Equity Securities,” Chapter 12, Investment Management Techniques, The Canadian Securities Institute, 1999.

Cases:

“Time Value of Money: The Buy versus Rent Decision,” with Stephen Foerster. Ivey Publishing, August 2014.

Conference Proceedings:

I have published numerous articles in conference proceedings, as summarized below:

European Financial Management Association annual conference, 2008, 2006, 2005, 2002.

Hawaii International Conference on Business, 2002.

Multinational Finance Society annual conference, 2001.

Atlantic Schools of Business annual conferences, 2000, 1998.

ASAC annual conferences, 2006, 2001, 2000.

Conference Best Paper Awards:

“The Information Content of Institutional Investment Horizon: Evidence from Firms’ Implied Cost of Equity,” 2012, Working Paper, Co-authored with Najah Attig, Saint Mary’s University, Sadok El Ghoul, University of Alberta, and Omrane Guedhami, South Carolina University. Chosen Best Paper in Banking and Finance – 2012 European Business Research Conference.

“Income Trusts: Why All the Fuss and What About the Future?” 2006. Co-authored with Greg MacKinnon from Saint Mary’s University. Chosen as the best paper in the Finance division for the 2006 ASAC Conference in Banff, Alberta.

“The U-Shaped Investment Curve: Theory and Evidence” 2004. Co-authored with Paul Povel, University of Minnesota, and Michael Raith, Rochester University. Presented at the 2004 NFA Conference and received award as the “Best Paper in Managerial Finance.”

“The Sensitivity of Canadian Corporate Investment to Liquidity.” Published in conference proceedings for the 1999 ASAC Conference in Saint John, New Brunswick.

Chosen as the best paper in the Finance division for this conference.

Conference Presentations:

Keynote Speaker (Finance Area) – ASAC 2012 Annual Conference.

I have presented papers at numerous conferences, as summarized below:

World Finance Conference, 2015, 2014, 2013, 2011, 2010.

Paris Financial Management Conference, 2014.

Northern Finance Association annual conferences, 2022, 2013, 2011, 2010, 2008, 2005, 2004, 2002, 2000, 1996.

Multinational Finance Society annual conferences, 2010, 2001, 1999.

European Financial Management Association annual conference, 2008, 2006, 2005, 2002.

Hawaii International Conference on Business, 2002.

Eastern Finance Association annual conferences, 2003, 2000.

Atlantic Schools of Business annual conferences, 2000, 1998, 1996.

ASAC annual conferences, 2006, 2000, 1999.

Financial Management Association annual conferences, 2013, 2011, 2010, 2008, 2005, 2004, 2001, 1999, 1996.

Southern Finance Association annual conference, 2022, 2016, 2008.

Finance Workshops (invited presentations):

Atlantic Canada CFA Society, 2006.

Melbourne Centre for Financial Studies, 2006.

Melbourne CFA Society, 2006.

Monash University (Caulfield), 2006.

University of Melbourne, 2006.

University of New South Wales, 2006.

University of Sydney, 2006.

University of Manitoba CGA Finance Conference 2005

Wilfred Laurier University, 2002.

University of Western Ontario, 2001.

York University, 2001, 2010.

Dalhousie University, 2001, 2013.

Queen's University, 2000.

Saint Mary's University, 2002, 2001, 2000, 1999.

Schulich School of Business, 2010.

Concordia University, 2013.

The University of Waterloo, 2015.

Research Grants

Co-investigator for an Insight Development Grant in the amount of \$55,626 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 2016 to 2018 period (Principal investigator – Jun Wang of the University of Western Ontario).

Co-investigator for a Standard Research Grant in the amount of \$129,980 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 2013 to 2017 period (Principal investigator - Najah Attig of Saint Mary's University).

Awarded four Research Grants of \$90,000 each over three years from the Smith School of Business at Queen's University (2008-11; 2011-14; 2014-17; 2018-2020).

Principal investigator for a Standard Research Grant in the amount of \$60,500 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 2008 to 2011 period.

Co-investigator for a Standard Research Grant in the amount of \$111,000 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 2006 to 2009 period (Principal investigator - Najah Attig of Saint Mary's University).

Principal investigator for a Standard Research Grant in the amount of \$70,118 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 2003 to 2006 period.

Awarded a Research Grant of \$25,000 per year for three years from the Schulich School of Business at York University (July 2001).

Principal investigator for a Standard Research Grant in the amount of \$61,530 from the Social Sciences and Humanities Research Council of Canada (SSHRC) for the 1999 to 2002 period.

Awarded Research Grant for \$1,500 from Saint Mary's University (2003-2004).

Awarded Research Grant for 2,500 from Saint Mary's University (2002-2003).

Awarded Research Grant for \$2,500 from Saint Mary's University (2000-2001).

Awarded Research Grant for \$3,030 from Saint Mary's University (1999-2000).

Awarded Research Grant for \$2,000 from Saint Mary's University (1998-99).

Research Grant in the amount of \$20,000 from the Intellectual Infrastructure Partnership Program (IIPP) at the University of Lethbridge (1997-98).

Research Grant from the University of Lethbridge Research Fund for \$4,500 (1997-98).

Work-in Progress

"The Leverage-Profitability Puzzle Revisited," 2018, Working Paper. Co-authored with Alan Douglas, and Tu Nguyen, both from the University of Waterloo.

"Does Dual Holdings by Institutional Investors Make a Big Difference?" 2018, Working Paper.

Co-authored with Jun Wang, the University of Western Ontario, and Keke Song, University of Melbourne.

Professional Activities

Member - CFA Society Toronto Advisory Council (January 2018-present)
Editorial Board – *Managerial Finance* (July 2017-present)
Associate Editor (Finance area) for the *Canadian Journal of Administrative Sciences* (2017-present);
Editor (Finance area) (2014-2016).
Associate Editor for the *European Journal of Finance* (2008-present).
Editorial Advisory Board – Investor Lit (2013-present)
Senior Advisor – Toronto CFA Professional Development Committee (2014-2021); Chair (2013-14);
Vice-Chair (2012-13)
Chair – Awards Committee – CFA Toronto Board of Directors (2008-2011)
President - Board of Directors for the Atlantic Canada CFA Society (2007-2008). Served on the board from 2001 to 2008.
Editorial Board – *Canadian Investment Review* (2008-2011).
Served as a reviewer for the *Review of Financial Studies*, the *Journal of Financial and Quantitative Analysis*, *Journal of Business*, *Financial Management*, *Journal of Money, Credit and Banking*, the *Journal of Banking and Finance*, the *European Journal of Finance*, the *Journal of Corporate Finance*, the *Journal of Applied Economics*, the *Multinational Finance Journal*, *Financial Review*, *Journal of International Financial Management*, the *International Review of Economics and Finance*, the *Canadian Journal of Administrative Sciences*, the *Review of Financial Economics*, the *Journal of Risk Finance*, and for the *Journal of Management and Governance*.
Reviewer for several SSHRC grant applications.
External reviewer/examiner for several tenure and renewal applications received for professors at other universities, as well as for Ph.D. dissertations.
Conference chair for 2001 Northern Finance Association Annual Meeting, held in Halifax.
Conference organizing committee and Reviewer for several conferences.
Completed the Chartered Financial Analyst (CFA) program, and awarded the CFA designation.
Completed the Professional Financial Planning Course offered by the Canadian Securities Institute, as well as the Canadian Securities Course (CSC).

Completed the Investment Funds Institute of Canada’s Mutual Fund Course.

Prepared course materials for several “on-line” finance courses.

Instructor for Canadian Securities Course Seminars.

Prepared Course Materials for the Canadian Securities Institute.

Delivered Seminars for the Canadian Securities Institute on the Canadian Securities

Course (CSC), Fixed Income Securities and Portfolio Management Techniques.

Student Supervision

External Examiner for several PhD students.

Supervisor, Queen’s PhD Finance Students, Neal Willcott 2019-present, and Dhruv Baswal 2022-present.

Supervisor, Queen’s MSc Finance Students, Aashray Kaudinya 2022-present, Dhruv Baswal 2022, Ehsan Dehghanizadeh 2019, Wayne Charles 2010.

Served as co-director for the Investment Management of Portfolios in Atlantic Canada Training Program (IMPACT) at Saint Mary’s University. This innovative program has students manage a portfolio of over \$150,000 of “real” money (2005-2008).

Served as faculty advisor to several MBA students preparing their Management Research Project (MRP) in finance (FIN 669) to satisfy their MBA requirements:

Robert March, "Using Canadian and US Macroeconomic Variables to Predict Canadian Equity Risk Premiums" (1999).

Simon Sagar, "Do Canadian Investors Overreact?" (2000). Simon also presented his paper at the 1999 Atlantic Schools of Business (ASB) conference in Halifax.

Kevin Kerr, "Bid-Ask Spreads and Commissions on the TSE" (2000).

Scott LeBlanc, "An Investigation of Derivative Use: A Case Study of Cambior Inc." (2000).

David Doucette, "Industry Momentum in Canadian Stock Returns" (2001).

Balakrishna Murty, "The Effect of Board Composition on Firm Value: Some Canadian Evidence" (2003).

Bashir Jallow, "US Economic Factors and International Equity Risk Premia Predictability" (2005).

Kathy Isnor, "The Effect of Corporate Governance Policies on the Corporate Bond Rating" (2005).

References

Dr. Laurence Booth

Professor of Finance

University of Toronto

105 St. George Street

Toronto, Ontario M5S 3E6

Phone: [\(416\) 978-6311](tel:4169786311)

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University of Toronto

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Toronto, Ontario M5S 3E6

Phone: [\(416\) 978-5703](tel:4169785703)

Email : Halper@Rotman.utoronto.ca

Dr. Gordon Sick

Professor of Finance
Haskayne School of Business
University of Calgary
Calgary, Alberta T5N 1N4
Phone : [\(403\) 220-7165](tel:4032207165)
E-mail: gordon.sick@haskayne.ucalgary.ca

539 Golfview Court
Oakville, ON
L6M4W6

May 15, 2023

Industrial Gas Users Association

Re: Invoice # IGUA-1 - for Work Completed for the Industrial Gas Users Association (IGUA)

To Whom It May Concern:

Please consider this as my invoice for services rendered over the February 1 – May 15, 2023 period to IGUA as per the contract dated February 10, 2023, which expires June 1, 2024, for work associated with the EB-2022-0200 proceedings before the Ontario Energy Board.

I have now completed all of the tasks associated with Milestone 1 of this contract, as outlined in Schedule A of that contract.

I have attached an accompanying detailed worksheet of hours worked for IGUA:



Maximum Payable after Milestone 1	(before HST)	=	\$34,650.00
	HST (@ 13%)	=	<u>\$ 4,504.50</u>
Maximum Payable		=	\$39,154.50

TOTAL PAYABLE = \$39,154.50

Please send a cheque for \$39,154.50 to me at the following address:

539 Golfview Court
Oakville, ON
L6M4W6

Do not hesitate to contact me by email (sean.cleary@queensu.ca) or by phone (613-539-5627) if you have any additional questions.

Thank you.

Yours truly,

A handwritten signature in black ink, appearing to be "Sean Cleary".

Dr. Sean Cleary, CFA

Asa Hopkins

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Asa	NON-FILING PARTICIPANT L. NAME Hopkins
SERVICE PROVIDER TYPE* Analyst	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 22	HOURLY RATE 330
HST RATE CHARGED* 0.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours 64.73	Hearings Subtotal (\$) 21,360.90	Hearings Total Tax (\$) 0.00	Hearings Total (\$) 21,360.90			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	17.00	330	5,610.00	0.00		5,610.00
DISCOVERY						
Preparation of Interrogatories	11.25	330	3,712.50	0.00		3,712.50
Review Interrogatory Responses	2.00	330	660.00	0.00		660.00
Technical Conference Preparation		330		0.00		
Technical Conference Attendance		330		0.00		
Technical Conference Follow Up		330		0.00		
ISSUES LIST						
Preparation		330		0.00		
Attendance at Issues Conference		330		0.00		
INTERVENOR EVIDENCE						
Preparation	12.98	330	4,283.40	0.00		4,283.40
Interrogatory Responses	19.75	330	6,517.50	0.00		6,517.50
Preparation of Witness(es) for Attendance at Hearing		330		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		0.00		
Attendance		330		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		0.00		
Attendance at Presentation to Panel		330		0.00		
ORAL HEARING						
Preparation	0.25	330	82.50	0.00		82.50
Attendance at Oral Hearing		330		0.00		
SUBMISSIONS						
Written Submissions		330		0.00		
Oral Submissions		330		0.00		
Attendance at Oral Submissions		330		0.00		
OTHER ATTENDANCE						
Other Attendance		330		0.00		
COMMUNICATION						
With Client	1.50	330	495.00	0.00		495.00
With Other Parties		330		0.00		
MOTIONS						
Preparation of Motion(s) Materials		330		0.00		
Prepare Submissions on the Motion(s)		330		0.00		
Attendance at Hearing on Motion(s)		330		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		0.00		
Prepare Submissions on Confidentiality		330		0.00		
Attendance at Hearing on Confidentiality		330		0.00		
DECISION						
Review		330		0.00		
RATE ORDER						
Review		330		0.00		
Prepare Submission on Rate Order		330		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	64.73		21,360.90	0.00		21,360.90

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Hopkins CV_20230712.pdf	CV	
IGUA_EB-2022-0200_Interim CostClaim_Hopkins_TimeDockets_20230712.pdf	Time Docket	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Hopkins_Invoices_20230712.pdf	Invoice	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Hopkins CV_20230712.pdf	CV	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Hopkins_TimeDockets_202307 12.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Hopkins_Invoices_20 230712.pdf	Invoice	Hearings	

4. Booked Time by Milestone ASH

End Date →				January 2023		February 2023		March 2023		April 2023		May 2023		June 2023		Total	
Milestone: ↑	Resource: ↑	Level		Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount
Interrogatory responses	Alice Napoleon	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2.75	\$907.50	0	\$0.00	2.75	\$907.50
	Asa Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	19.75	\$6,517.50	0	\$0.00	19.75	\$6,517.50
	Sol Deleon	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	1	\$330.00	0	\$0.00	1	\$330.00
Preparation for oral hearing	Tim Woolf	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0.5	\$165.00	0	\$0.00	0.5	\$165.00
	Asa Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0.25	\$82.50	0.25	\$82.50
	Asa Hopkins	Analyst 20+	330	0.5	\$165.00	10.75	\$3,547.50	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	11.25	\$3,712.50
Preparation of interrogatories	Sol Deleon	Analyst 20+	330	0	\$0.00	2.5	\$825.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2.5	\$825.00
	Asa Hopkins	Analyst 20+	330	5.5	\$1,815.00	7	\$2,310.00	4.8	\$1,626.00	9.5	\$3,135.00	6	\$1,980.00	0	\$0.00	12.98	\$4,283.40
	Paul Rhodes	Analyst 0-5	170	0	\$0.00	0	\$0.00	4.5	\$765.00	7.5	\$1,275.00	0	\$0.00	0	\$0.00	12	\$2,040.00
Preparation of intervenor evidence	Sol Deleon	Analyst 20+	330	0	\$0.00	7.5	\$2,475.00	5.48	\$1,662.56	2	\$660.00	0	\$0.00	0	\$0.00	12.98	\$4,283.40
	Alice Napoleon	Analyst 20+	330	1	\$330.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	1	\$330.00
	Asa Hopkins	Analyst 20+	330	1.25	\$412.50	1.5	\$495.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2.75	\$907.50
Review application and evidence	Paul Rhodes	Analyst 0-5	170	1.5	\$255.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	1.5	\$255.00
	Sol Deleon	Analyst 20+	330	0.75	\$247.50	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0.75	\$247.50
	Tyler Fitch	Analyst 6-10	230	1	\$230.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	1	\$230.00
Review interrogatory responses	Asa Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	2	\$660.00	0	\$0.00	0	\$0.00	0	\$0.00	2	\$660.00
Total				11.5	\$3,455.00	29.25	\$9,652.50	83.75	\$26,917.50	19	\$5,070.00	30	\$9,900.00	0.25	\$82.50	173.75	\$25,776.80

Invoice Support Detail

Rpt Billed

As of 2023-01-11 15:15:35 Eastern
Standard Time/EST • Generated
by Michelle Marquis

Filtered By

Show: All timecards
Billable equals True
Billed equals True
Project: Invoicing equals ,Standard
T&M,Fixed Fee Monthly,Fixed Fee
Milestone,T&M Milestone
Billing,Other Non-Standard
Schedule,Upfront Payment then
T&M,Multi-funder,Yet to be
Determined
Project: Active equals True
Start Date greater or equal
12/1/2022
End Date less or equal 12/31/2022
Total Billable Amount not equal to
USD 0
Project contains 22-130
Invoiced equals True

Project: Project Name ↑	Resource ↑	End Date	Total Hours	Bill Rate	Total Billable Amount	Week Notes
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22-130 Screen Enbridge filing	Asa Hopkins	12/16/2022	3.75			begin review of EGI filing (Concentric study) review EGI filing (Concentric report, survey of other sections); coordinate review with Kenji	RAE
						review/catalog filing documents review P2NZ report assumptions review coordination w/ Paul; set up notes document; analyze risk, depreciation Concentric report review Concentric report review EGI filing (ETO and safe bets); confer w/ Paul re: his takeaways from scenario analysis; call w/ IGUA + Ian	RAE
		12/30/2022	1.5			prep for and attend call with IGUA and counsel	COM-CL

							Internal meeting on initial steps, begin review Reviewing forecast filings reviewing scenarios, two energy transition studies Finish review, review notes and relay findings to Asa
	Paul Rhodes	12/23/2022	10.25				
Total			26				

RAE

Asa S. Hopkins, Ph.D., Vice President

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-661-3248
ahopkins@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Vice President*, April 2019 – present, *Principal Associate*, January 2017 – March 2019.

Conducts research and writes expert testimony and reports related to state energy policy and planning, energy efficiency, strategic electrification, deep decarbonization, and the present and future of electric and gas utility regulatory and business models.

Vermont Public Service Department, Montpelier, VT. *Director of Energy Policy and Planning*, October 2011 – December 2016

State energy planning and utility regulation

- Directed the year-long development of the 2016 Vermont Comprehensive Energy Plan, including stakeholder meetings, public forums, and coordination of contributions from other departments and the Governor's office. Primary author of the executive summary and five chapters.
- Led the Department's approach to establishing budgets and performance targets for energy efficiency utilities. Oversaw staff conducting program evaluation and savings verification.
- Submitted testimony and conducted analysis in support of public advocacy and negotiation in prominent litigated regulatory proceedings.

Policy development, analysis, and advocacy

- Developed the structure of Vermont's 2015 Renewable Energy Standard, including its novel "energy transformation" requirement. Worked with stakeholders to develop support for the policy and with the legislature to shepherd it to passage. This policy will result in more reduction of Vermont's GHG emissions than any others passed in the last 15 years.
- Led execution of Vermont's Total Energy Study, which examined technology and policy pathways for Vermont to meet GHG emission and renewable energy goals.
- Led cost-benefit analysis of Vermont's existing net metering structure and led the development of departmental proposals for a new structure.
- Prepared and delivered public, stakeholder, and interagency presentations, including to agency and business leaders, legislative committees, and the governor.
- Oversaw programs providing financing, technical, and process assistance to clean energy projects.

During tenure, Vermont rose in the rankings on national clean energy state scorecards: ACEEE State Energy Efficiency Scorecard from 5th to 3rd and U.S. Clean Tech Leadership Index from 10th to 3rd.

U.S. Department of Energy, Washington, DC. *Special Advisor to the Under Secretary for Science / AAAS Science and Technology Policy Fellow*, September 2010 – August 2011

Dr. Hopkins served as the assistant project director for the Department of Energy’s first Quadrennial Technology Review. In this role, he coordinated a team that solicited input from Department of Energy and National Laboratory staff and scientists, ran a series of public workshops, facilitated coordination with the White House, developed a set of technology assessments, and ultimately drafted the Report on the First QTR, published Sept. 27, 2011.

Lawrence Berkeley National Laboratory, Berkeley, CA. *Environmental Energy Policy Postdoctoral Fellow*, January 2009 – August 2010

Conducted technical and economic analysis to support the Department of Energy in setting the energy efficiency standards that appliances must meet in order to be sold in the United States.

California Institute of Technology, Pasadena, CA. *Graduate Research Fellow*, 2002 – 2008

Los Alamos National Laboratory, Los Alamos, NM. *Post-Baccalaureate Researcher, Theoretical Division*, June 2001 – June 2002

EDUCATION

California Institute of Technology, Pasadena, CA

Doctor of Philosophy in Physics, 2008

Master of Science in Physics, 2007

Haverford College, Haverford, PA

Bachelor of Science *summa cum laude*, in Physics with minors in Computer Science and Growth and Structure of Cities, 2001

SELECTED PROJECTS

The Future of Gas Utilities – Dr. Hopkins leads Synapse’s work in the area of the future of gas utilities. He and his team are assisting a number of clients to understand the future of gas utilities in the context of deep building decarbonization objectives. This work includes assisting Conservation Law Foundation in Massachusetts Department of Public Utilities Docket 20-80 (an investigation into “the role of gas local distribution companies as the Commonwealth achieves its target 2050 climate goals”); Natural Resources Defense Council in New York and Nevada’s regulatory proceedings regarding the future of gas; the Colorado Energy Office regarding approaches to decision-making in the face of uncertainty, in the context of Colorado’s regulatory proceedings regarding gas utility Clean Heat plans and building decarbonization; the County of San Diego (with the University of California San Diego) in developing the buildings and utilities portion of its Regional Decarbonization Framework; the Maryland Office of People’s Counsel in modeling the impact of the state’s decarbonization objectives on utility sales and

finances; and the District of Columbia Department of Energy and Environment in assessing Washington Gas Light's Climate Business Plan.

Puerto Rico Energy Bureau – Synapse has provided extensive support to Puerto Rico's electricity regulator since 2015. Dr. Hopkins has coordinated the engagement since 2018. Dr. Hopkins has led or substantially contributed to the development of Puerto Rico's first energy efficiency and demand response regulations; emergency microgrid regulations; and the review of the island's second Integrated Resource Plan and subsequent processes to optimize resilience using both transmission and distributed generation resources.

Massachusetts Comprehensive Energy Plan – On behalf of the Massachusetts Department of Energy Resources (the state energy office), Synapse and Sustainable Energy Advantage assisted DOER and its sister agencies in the development of Massachusetts's first Comprehensive Energy Plan. Dr. Hopkins assisted DOER leadership in defining the scope and approach for the CEP, to distinguish it from other state planning processes. He worked with Pat Knight to develop an approach to modeling energy transformations toward low-carbon alternatives in electricity, buildings, and transportation that are consistent with state policy and approaches while being grounded in stock turnover rates and feasible policies and programs.

Northeastern Regional Assessment of Strategic Electrification – On behalf of the Northeast Energy Efficiency Partnerships, Synapse and Meister Consultants Group identified the opportunity, costs, and benefits available if strategic electrification is adopted as a key strategy for decarbonization in New York and New England. Dr. Hopkins, Kenji Takahashi, and Pat Knight are primary authors of the resulting report, published in July 2017, which characterizes the current markets for efficiency electrification technologies (such as heat pumps and electric vehicles), identifies policies to overcome market barriers, assesses the state of electrification technologies, and models the extent of electrification both possible given market dynamics and required to meet regional greenhouse gas emission goals.

2016 Vermont Comprehensive Energy Plan – Directed the year-long development of the 2016 plan, including setting its strategic approach to current Vermont energy planning challenges and grounding it in quantitative analysis. Developed the public engagement process, then hosted expert stakeholder meetings and public forums. Adapted the results of the 2014 Total Energy Study to produce scenarios that illustrate the proposed pathways identified in the plan. Coordinated contributions from staff and leaders in other departments, and from the Governor's office. Wrote the executive summary and 5 of the 14 chapters.

Total Energy Study – Scoped and led a legislatively-mandated report on policy and technology pathways to meet Vermont's renewable energy and greenhouse gas emission goals. Designed and facilitated a focus-group-based stakeholder engagement process to identify technology and policy visions for analysis. Retained outside modeling consultant, then worked closely with them to build credible business-as-usual and policy case models of Vermont's energy economy to the year 2050 using the TIMES/FACETS integrated assessment model. Translated those model results to make REMI PI+

calculations of impact on Vermont GDP and jobs. Synthesized qualitative and quantitative results into intermediate and final reports identifying key outcomes for policy design.

Demand Resources Plan Proceedings – In each of three, three-year cycles, led the development of the Department of Public Service’s positions regarding appropriate budgets, rate and bill impacts, and performance targets for Vermont’s energy efficiency utilities. Analyzed current efficiency utility performance to calibrate expected future performance. Negotiated performance metrics that reflect policy priorities. Developed new regulatory and budget treatment of research and development for behavioral energy efficiency programs.

Quadrennial Technology Review – As Assistant Project Director, managed the project activities of the eight-person core team for the U.S. Department of Energy’s first Quadrennial Technology Review. This review of DOE’s energy technology activities established a robust framework and codified principles used to build DOE’s energy technology portfolio (including identifying the appropriate and highest-leverage activities for DOE relative to the private sector and other government actors). Extensive collaboration and discussions within DOE, as well the public through a series of workshops with industry, government, national laboratory, and academic participation, culminated in the publication of the first DOE-QTR report in September 2011. Coordinated successful stakeholder workshops; facilitated focus groups. Drafted discussion papers that served as the basis for extensive intra- and inter-agency and White House coordination and negotiation. Primary author of the final report’s section on building and industrial energy efficiency. Project was completed on schedule and on budget, and met its critical milestones.

REPORTS

Hopkins, A. S., A. Napoleon, K. Schultz. 2023. *The High Cost of New York Gas Utilities’ Leak- Prone Pipe Replacement Programs*. Synapse Energy Economics for Natural Resources Defense Council.

Carlson, E., P. Eash-Gates, B. Fagan, A. Hopkins. 2023. *Review of Northwest Natural Gas 2022 Integrated Resource Plan—Final Report: Assessing Compliance with the Oregon IRP Guidelines and the Greenhouse Gas Reduction Requirements from the Climate Protection Program*. Synapse Energy Economics for Staff of Oregon Public Utilities Commission.

Hopkins, A. S., A. Napoleon, J. Litynski, K. Takahashi, J. Frost, S. Kwok. 2022. *Climate Policy for Maryland’s Gas Utilities: Financial Implications*. Synapse Energy Economics for Maryland Office of the People’s Counsel.

Kwok, S., K. Takahashi, J. Litynski, A. S. Hopkins. 2022. Memo: Massachusetts DPU Docket-2080: Proposed “Common Regulatory Framework.” Synapse Energy Economics for Conservation Law Foundation.

Hopkins, A. S. S. Kwok, J. Litynski, A. Napoleon, K. Takahashi. 2022. Memo: Evaluation of Draft Consultant Reports in Massachusetts DPU Docket 20-80. Synapse Energy Economics for Conservation Law Foundation.

Hopkins, A. S., A. Napoleon, S. Kwok. 2022. *Factsheet: Hydrogen & Low-Carbon Gases in New York's Electricity Future*. Synapse Energy Economics for Sierra Club.

Hopkins A. S., P. Eash-Gates, J. Frost, S. Kwok, J. Litynski, K. Takahashi. 2022. "Decarbonization of Buildings." In *San Diego Regional Decarbonization Framework*, edited by SDG Policy Initiative, School of Global Policy and Strategy, University of California San Diego. San Diego.

Frost, J. S. Kwok, K. Takahashi, A.S. Hopkins, A. Napoleon. 2021. *New York Heat Pump Trajectory Analysis*. Synapse Energy Economics for NRDC.

Hopkins, A. S., A. Napoleon, K. Takahashi. 2021. *A Framework for Long-Term Gas Utility Planning in Colorado*. Synapse Energy Economics for the Colorado Energy Office.

Woolf, T., A. Napoleon, A. Hopkins, K. Takahashi. 2021. *Long-Term Planning to Support the Transition of New York's Gas Utility Industry*. Synapse Energy Economics for Natural Resources Defense Council.

Frost, J., J. Litynski, S. Letendre, A. S. Hopkins. 2021. *Economic Impacts of Climate Change on Cape Cod*. Synapse Energy Economics for Eastern Research Group and the Cape Cod Commission.

Hopkins, A.S., P. Knight, J. Frost. 2021. *Rhode Island Carbon Pricing Study*. Synapse Energy Economics and the Cadmus Group for the Rhode Island Office of Energy Resources.

Kallay, J., A.S. Hopkins, C. Odom, J. Ramey, J. Stevenson. R. Broderick, R. Jeffers, B. Garcia. 2021. *The Quest for Public Purpose Microgrids for Resilience: Considerations for Regulatory Approval*. Synapse Energy Economics for Sandia National Labs.

Takahashi, K., E. Sinclair, A. Napoleon, A. S. Hopkins, D. Goldberg. 2021. *Evaluation of EnergyWise Low-Income Energy Efficiency Program in Mississippi – Program Performance, Design, and Implications for Low-Income Efficiency Programs*. Synapse Energy Economics for Sierra Club and Gulf Coast Community Foundation.

Kallay, J., A. Napoleon, J. Hall, B. Havumaki, A. S. Hopkins, M. Whited, T. Woolf, J. Stevenson, R. Broderick, R. Jeffers, B. Garcia. 2021. *Regulatory Mechanisms to Enable Investments in Electric Utility Resilience*. Synapse Energy Economics for Sandia National Laboratories.

Kallay, J., A. Napoleon, B. Havumaki, J. Hall, C. Odom, A. S. Hopkins, M. Whited, T. Woolf, M. Chang, R. Broderick, R. Jeffers, B. Garcia. 2021. *Performance Metrics to Evaluate Utility Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

Kallay, J., S. Letendre, T. Woolf, B. Havumaki, S. Kwok, A. S. Hopkins, R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *Application of a Standard Approach to Benefit-Cost Analysis for Electric Grid Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

Hopkins, A. S., S. Kwok, A. Napoleon, C. Roberto, K. Takahashi. 2021. *Scoping a Future of Gas Study*. Synapse Energy Economics for Conservation Law Foundation.

Kallay, J., A. S. Hopkins, A. Napoleon, B. Havumaki, J. Hall, M. Whited, M. Chang., R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *The Resilience Planning Landscape for Communities and Electric Utilities*. Synapse Energy Economics for Sandia National Laboratories.

Shipley, J., A. S. Hopkins, K. Takahashi, D. Farnsworth, 2021. *Renovating Regulation to Electrify Buildings: A Guide for the Handy Regulator*. Regulatory Assistance Project.

Letendre, S., E. Camp, J. Hall, B. Havumaki, A. S. Hopkins, C. Odom, S. Hackel, M. Koolbeck, M. Lord, L. Shaver, X. Zhou. 2020. *Energy Storage in Iowa: Market Analysis and Potential Economic Impact*. Prepared by Synapse Energy Economics and Slipstream for Iowa Economic Development Authority.

Eash-Gates, P., K. Takahashi, D. Goldberg, A. S. Hopkins, S. Kwok. 2021. *Boston Building Emissions Performance Standard: Technical Methods Overview*. Synapse Energy Economics for the City of Boston.

Camp, E., C. Odom, A. S. Hopkins. 2020. *Cost-Effectiveness of Proposed New Mexico Environment Department Oil and Gas Emissions Reduction Rules: Impacts and Co-Benefits of Reduced Volatile Organic Compound Emissions from the Oil and Gas Industry*. Synapse Energy Economics for Environmental Defense Fund.

Camacho, J., K. Takahashi, A. S. Hopkins, D. White. 2020. *Assessment of Proposed Energize Eastside Project*. Synapse Energy Economics and MaxETA Energy for the City of Newcastle, WA.

Takahashi, K., J. Frost, D. Goldberg, A. S. Hopkins, K. Nishio, K. Nakano. 2020. *Survey of U.S. State and Local Building Decarbonization Policies and Programs*. Presented at the 2020 ACEEE Summer Study of Energy Efficiency in Buildings.

Hopkins, A. S., A. Napoleon, K. Takahashi. 2020. *Gas Regulation for a Decarbonized New York: Recommendations for Updating New York Gas Utility Regulation*. Synapse Energy Economics for Natural Resources Defense Council.

Takahashi, K., A. S. Hopkins, J. Rosenkrantz, D. White, S. Kwok, N. Garner. 2020. *Assessment of National Grid's Long-Term Capacity Report*. Synapse Energy Economics for the Eastern Environmental Law Center.

Camp, E., N. Garner, A. S. Hopkins. 2019. *Cost-Effectiveness of Comprehensive Oil and Gas Emissions Reduction Rules in New Mexico: Impacts of Reduced Methane and Volatile Organic Compound Emissions from the Oil and Gas Industry*. Synapse Energy Economics for the Environmental Defense Fund.

Camp, E., A. S. Hopkins, D. Bhandari, N. Garner, A. Allison, N. Peluso, B. Havumaki, D. Glick. 2019. *The Future of Energy Storage in Colorado: Opportunities, Barriers, Analysis, and Policy Recommendations*. Synapse Energy Office for the Colorado Energy Office.

Kallay, J., A. S. Hopkins, J. Frost, A. Napoleon, K. Takahashi, J. Slason, G. Freeman, D. Grover, B. Swanson. 2019. *Net Zero Energy Roadmap for the City of Burlington, Vermont*. Synapse Energy Economics and Resource Systems Group for Burlington Electric Department.

Camp, E., B. Fagan, J. Frost, D. Glick, A. S. Hopkins, A. Napoleon, N. Peluso, K. Takahashi, D. White, R. Wilson, T. Woolf. 2018. *Phase 1 Findings on Muskrat Falls Project Rate Mitigation*. Synapse Energy Economics for Board of Commissioners of Public Utilities, Province of Newfoundland and Labrador.

Hopkins, A. S., P. Knight, N. Peluso. 2018. *Massachusetts Comprehensive Energy Plan: Commonwealth and Regional Demand Analysis*. Synapse Energy Economics, Sustainable Energy Advantage, and MA DOER for the Massachusetts Department of Energy Resources.

Knight, P., D. Goldberg, E. Malone, A. S. Hopkins, D. Hurley. 2018. *Getting SMART: Making sense of the Solar Massachusetts Renewable Target (SMART) program*. Synapse Energy Economics for Cape Light Compact.

Hopkins, A. S., K. Takahashi, D. Glick, M. Whited. 2018. *Decarbonization of Heating Energy Use in California Buildings: Technology, Markets, Impacts, and Policy Solutions*. Synapse Energy Economics for the Natural Resources Defense Council.

Woolf, T., A. S. Hopkins, M. Whited, K. Takahashi, A. Napoleon. 2018. *Review of New Brunswick Power's 2018/2019 Rate Case Application*. In the Matter of the New Brunswick Power Corporation and Section 103(1) of the Electricity Act Matter No. 375. Prepared by Synapse Energy Economics for the New Brunswick Energy and Utilities Board Staff.

Hopkins, A. S., K. Takahashi. 2017. *Alternatives to Building a New Mt. Vernon Substation in Washington, DC*. Synapse Energy Economics for the District of Columbia Department of Energy and Environment.

Hopkins, A. S., S. Fields, T. Vitolo. 2017. *Policies to Cost-Effectively Retain Existing Renewables in New York*. Synapse Energy Economics for the Alliance for Clean Energy New York.

Vitolo, T., A. S. Hopkins. 2017. *The Mounting Losses at CWLP's Dallman Station: A Study of the Relative Costs of Operating Each of the Four Dallman Units*. Synapse Energy Economics for the Sierra Club.

Hopkins, A. S., A. Horowitz, P. Knight, K. Takahashi, T. Comings, P. Kreycik, N. Veilleux, J. Koo. 2017. *Northeast Regional Assessment of Strategic Electrification*. Synapse Energy Economics and Meister Consultants Group for the Northeast Energy Efficiency Partnerships.

Vermont Public Service Department. 2016. *Vermont Comprehensive Energy Plan*.

Vermont Public Service Department. 2016. *Act 199 Study on Manufacturing Competitiveness and Energy*.

Vermont Public Service Department. 2014. *Total Energy Study: Final Report on a Total Energy Approach to Meeting the State's Greenhouse Gas and Renewable Energy Goals*.

Vermont Public Service Department. 2014. *Evaluation of Net Metering in Vermont Conducted Pursuant to Act 99 of 2014*.

Vermont Public Service Department. 2013. *Total Energy Study: Report to the Vermont General Assembly on Progress Toward a Total Energy Approach to Meeting the State's Greenhouse Gas and Renewable Energy Goals*.

Vermont Public Service Department. 2013. *Evaluation of Net Metering in Vermont Conducted Pursuant to Act 125 of 2012*.

U.S. Department of Energy. 2011. *Report on the First Quadrennial Technology Review*. DOE/S-0001.

ARTICLES

Hopkins, A. S., K. Takahashi, S. Nadel. 2020. "Keep warm and carry on: Electrification and efficiency meet the 'polar vortex'." Proceedings of the 2020 ACEEE Summer Study of Energy Efficiency in Buildings.

Hopkins, A. S., K. Takahashi, L. David. 2018. "Challenges and Opportunities for Deep Decarbonization through Strategic Electrification under the Utility Regulatory Structures of the Northeast". Proceedings of the 2018 ACEEE Summer Study on Energy Efficiency in Buildings, August 2018.

Hopkins, A. S. Review of *Burn Out*, by Dieter Helm, *Science* 356, Issue 6339 (May 2017): 709, <https://doi.org/10.1126/science.aam8696>

Dunsky, P., A. S. Hopkins, K. Vaillancourt, M. Fabbri. 2016. "Achieving an Ultra-Low Carbon Future: Technology and Policy Pathways to Meet Vermont's GHG Goals," *ACEEE Summer Study on Energy Efficiency in Buildings*.

Greenblatt, J., A. S. Hopkins, V. Letchert, M. Blasnik. 2012. "Energy Use of U.S. Residential Refrigerators and Freezers: Function Derivation Based on Household and Climate Characteristics," *Energy Efficiency*. 10.1007/s12053-012-9158-6.

Hopkins, A. S., L. Gu, A. Lekov, J. Lutz, G. Rosenquist. 2011. "Simulating a Nationally Representative Housing Sample Using EnergyPlus," Lawrence Berkeley National Laboratory Report, LBNL-4420E.

Lutz, J.D., A. S. Hopkins, V. Letschert, V.H. Franco, A. Sturges. 2011. "Using National Survey Data to Estimate Lifetimes of Residential Appliances," *HVAC&R Research*.

Alvarez, R.M., A. S. Hopkins, B. Sinclair. 2010. "Mobilizing Pasadena Democrats: Measuring the Effects of Partisan Campaign Contacts," *The Journal of Politics* 72, 31.

Nielsen, A.E.B., A. S. Hopkins, H. Mabuchi. 2009. "Quantum Filter Reduction for Measurement-Feedback Control Via Unsupervised Manifold Learning," *New Journal of Physics* 11, 105043.

Hopkins, A. S., B. Lev, H. Mabuchi. 2004. "Proposed Magnetoelectrostatic Ring Trap for Neutral Atoms," *Physical Review A* 70, 053616.

Hopkins, A. S., K. Jacobs, S. Habib, K. Schwab. 2003. "Feedback Cooling of a Nanomechanical Resonator," *Physical Review B* 68, 235328.

TESTIMONY

Washington DC Public Service Commission (FC 1169): Provided direct and rebuttal expert testimony regarding Washington Gas's application for an increase in rates, from the standpoint of the District of Columbia's climate and clean energy policies. On behalf of the District of Columbia Government, November 2022 and January 2023.

New York Public Utilities Commission (Case No. 22-E-0064 and 22-G-0065): Direct and Rebuttal Testimony of Alice Napoleon and Asa Hopkins regarding Con Edison's proposed gas-side investments as greenhouse gas mitigation strategies and gas extension allowance rule changes and the need for long-term planning for the gas system and adequacy of the company's non-pipe alternatives framework. On behalf of Natural Resources Defense Council, May 2022.

Régie de l'énergie du Québec (R-4156-2021): Testified as an expert on the business risk facing Quebec's natural gas utilities related to the energy transition, as part of a proceeding to set the utilities' cost of capital and capital structure. On behalf of the Industrial Gas Users Association.

Vermont Public Utility Commission (Case No. 21-1107-PET and 21-1109-PET): Addressed the impact of GlobalFoundries proposed "self-managed utility" on the general good of the state and Vermont's energy policy, with particular focus on the impact on environmental soundness and greenhouse gas emissions mitigation. On behalf of Conservation Law Foundation, June 2021.

Public Service Commission of Wisconsin (Docket No. 5-CG-106): Addressed the need for a pair of liquified natural gas facilities in light of the fossil fuel use reductions required to meet state and federal goals for mitigating climate change and the potential for cost-effective demand-side alternatives. On behalf of the Sierra Club, June 2021.

Vermont Senate Finance Committee: Provided expert testimony in the form of a presentation entitled "Updating Vermont's Renewable Energy Standard" to the Vermont Senate Finance Committee in January of 2020. Dr. Hopkins presented on the history of the standard, what has changed since 2015, and future potential.

Vermont Public Utility Commission (Case No. 17-1247-NMP): Addressed the consistency of a proposed solar generation facility with the Vermont Comprehensive Energy Plan. On behalf of Derby GLC Solar LLC, January 2018.

Washington DC Public Service Commission (FC 1142): Provided expert testimony regarding the merits of the proposed merger of Washington Gas and AltaGas, Ltd. with respect to the impact on environmental quality, with particular emphasis on the impact of utility management and its approach to climate change on the ability of the District to achieve its climate change mitigation goals. On behalf of the District of Columbia Government.

Régie de l'énergie du Québec (R-3986-2016): Provided an expert report and testimony regarding best practices in utility demand response programs, in the context of Hydro Québec Distribution's ten-year

Supply Plan. On behalf of the Regroupement national des conseils régionaux de l'environnement du Québec (RNCREQ).

Vermont Public Service Board (Dockets No. 8586 and 8685): Addressed the need for a proposed solar PV generator and its associated contract under PURPA rates, its economic impact on the state, and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, July 2016.

Vermont Public Service Board (Docket No. 8684): Proposed avoided energy and capacity cost rates for use in Rule 4.100, Vermont's implementation of PURPA. On behalf of the Vermont Department of Public Service, October 2015 and May 2016.

Vermont Public Service Board (Docket No. 8600): Addressed the need for a proposed solar PV generator, its economic impact on the state, and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, March 2016.

Vermont Public Service Board (Docket No. 8525): Introduced a memorandum of understanding between the DPS and Green Mountain Power regarding a proposed rate design, with particular focus on new critical peak price rates to be available and marketed. On behalf of the Vermont Department of Public Service, November 2015.

Vermont Public Service Board (Docket No. 7970): Addressed whether increases in the expected cost of a gas pipeline expansion project were sufficient to warrant reopening the underlying proceeding, particularly with respect to the need for the project, the economic impact on the state, and consistency with the general good of the state and the Vermont Comprehensive Energy Plan. On behalf of the Vermont Department of Public Service, May 2015.

Vermont Public Service Board (Docket No. 8311): Addressed how statutory criteria for the use of electric energy efficiency funds for electrification measures (such as heat pumps) might be met. On behalf of the Vermont Department of Public Service, January 2015.

Vermont Public Service Board (Docket No. 7862): Presented the Department's positions regarding whether Entergy Vermont Yankee should be granted a continued certificate of public good, with particular focus on the need for the plant, the economic benefit of continued operation, consistency with the Vermont Electric Plan, and whether continued operation by Entergy was in the general good of the state. On behalf of the Vermont Department of Public Service, October 2012 and April 2013.

Vermont Public Service Board (Docket No. 7833): Addressed the need for a proposed biomass electric generator and its consistency with the Vermont Electric Plan. On behalf of the Vermont Department of Public Service, October and November 2012; February and September 2013.

Vermont Public Service Board (Docket No. 7770): Addressed a number of topics related to the merger of Green Mountain Power and Central Vermont Public Service, most particularly the disposition of a windfall repayment due to ratepayers. On behalf of the Vermont Department of Public Service, January and March 2012.

Vermont Public Service Board (Docket No. 7815): Addressed consistency of a proposed long-term PPA with the Vermont Electric Plan and the utility’s integrated resource plan. On behalf of the Vermont Department of Public Service, January 2012.

SELECTED PRESENTATIONS

Hopkins, A. S. “IIJA, IRA, and the Growing Federal Role in Transmission—and Why States Should Care,” presented at the National Association of State Energy Officials Annual Meeting, October 2022.

Hopkins, A. S., J. Litynski, A. Takasugi. “Policy approaches to increasing electricity affordability in California,” presented to various California stakeholders on behalf of Natural Resources Defense Council, February 2022.

Shipley, J., Hopkins, A. S., Takahashi, K., & Farnsworth, D. “Renovating regulation to electrify buildings: A guide for the handy regulator,” presented with Regulatory Assistance Project, January 2021.

Hopkins, A. S. 2019. “Efficiency, Electrification, and Renewables in New England and Puerto Rico” at 2019 ACEEE Energy Efficiency as a Resource Conference, October 2019.

Hopkins, A. S. 2019. “Strategic electrification and winter cold snaps: A resource and a challenge” at 2019 ACEEE Energy Efficiency as a Resource Conference, October 2019.

Panelist on “Deep Dive Session on State and Local Electrification Roadmaps” at Electric Power Research Institute (EPRI)/Northeast Energy Efficiency Partnerships (NEEP) Electrification Summit, August 2019.

Hopkins, A. S., K. Takahashi, D. Lis. 2018. “Decarbonization through Strategic Electrification Meets Utilities and Regulation in the Northeast” at the 2018 ACEEE Summer Study on Energy Efficiency in Buildings, August 2018.

Hopkins, A. S. 2019. “Strategic Electrification: Impacts and approaches to meeting decarbonization goals in the northeastern states (and elsewhere)” at Lawrence Berkeley National Laboratory, Energy Technologies Area, August 2018.

Hopkins, A. S. 2017. “Utility Performance Regulation” at the Western States Regional Meeting of the National Association of State Energy Officials, April 2017.

Panelist on “A Regulatory Perspective of Grid Transformation” at the IEEE Innovative Smart Grid Technologies Conference, September 2016.

Panelist on the “Comprehensive Energy Plan Update” at the Renewable Energy Vermont Conference, October 2015.

Hopkins, A. S. 2015. “Vermont’s Total Energy Study.” Presentation at the National Association of State Energy Officials Energy Policy Outlook Conference, February 2015.

Panelist on “The Role of Energy Efficiency in Mitigating Winter Peak Issues” at the Association of Energy Services Professionals (Northeast Chapter) & Northeast Energy Efficiency Council, November 2014.

Hopkins, A. S. 2014. "Total Energy Study." Presentation at the Renewable Energy Vermont Conference, October 2014.

Panelist on "State Energy & Economic Policy Impacts on Industry Transformation" at the Power Industry Transformation Summit, April 2014.

Hopkins, A. S. 2008. "Mobilizing Pasadena Democrats: Measuring the Effects of Partisan Campaign Contacts." Presentation at the American Political Science Association Annual Meeting, August 2008.

HONORS, AWARDS, AND FELLOWSHIPS

Certified Public Manager, 2014

AAAS Science and Technology Policy Fellowship, 2010 – 2011

Dean's Award for Community Service, 2009

Delegate to the 2004 Democratic National Convention

NSF Graduate Research Fellow, 2002 – 2005

Los Alamos National Laboratory Student Distinguished Performance Award, 2002

Two-time first-team Academic All American, 2000 and 2001

Barry M. Goldwater Scholar, 1999 – 2001

OTHER ACTIVITIES

NASEO - Electricity Committee: Affiliate Co-Chair, 2020-present

Newton, MA Citizens Commission on Energy, Member 2017-present

Guest on Synapse Energy Economics, Inc.'s *Energy Nerd Show*, Aug 6, 2020

Board Member, National Association of State Energy Officials, 2015-16

Industrial Advisory Board for ARPA-E-funded project "Packetized Energy Management," 2016

Burlington, VT Public Works Commission: Member 2012 –2014, Chair 2015

Resume updated May 2023



Synapse
Energy Economics, Inc.

BILL TO

Industrial Gas Users
Association
PO Box 30
851 Industrial Avenue
Ottawa, Ontario K1G 4L3 CA

INVOICE 22-130-01

DATE 01/11/2023 **TERMS** Net 30

DUE DATE 02/10/2023

DESCRIPTION	QTY	RATE	AMOUNT
Vice President [REDACTED]	15.75	[REDACTED]	[REDACTED]
Research Associate [REDACTED]	10.25	[REDACTED]	[REDACTED]

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Synapse Energy Economics
485 Massachusetts Ave, Suite 3
Cambridge, MA 02139

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TOTAL DUE [REDACTED]

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E-mail: finance@synapse-energy.com
Phone: 617-661-3248

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Synapse
Energy Economics, Inc.

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PO Box 30
Ottawa, ON K1G 4L3

INVOICE 23-003-01-REVISED

DATE 06/12/2023 **TERMS** Net 30

DUE DATE 07/12/2023

DESCRIPTION	QTY	RATE	AMOUNT
interrogatory responses on the evidence are filed	1	18,950.00	18,950.00

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Synapse Energy Economics
485 Massachusetts Ave, Suite 3
Cambridge, MA 02139

TOTAL DUE **\$18,950.00**

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Tim Woolf**CASE**

EB-2022-0200: Rates:
Distribution: Enbridge Gas Inc.

COST CLAIM

EB-2022-0200 : 1 : Cathy
Galler

INTERVENOR NAME

Galler, Cathy ; +1 (416)
369-4570
cathy.galler@gowlingwlg.com

PARTICIPANT

CLAIM STATUS
Submitted

FILING PARTICIPANT**NEW
PARTICIPANT**

Yes

**NON-FILING
PARTICIPANT F. NAME**

Tim

**NON-FILING
PARTICIPANT L. NAME**

Woolf

SERVICE PROVIDER TYPE*

Analyst

YEAR CALLED TO BAR***COMPLETED YEARS
PRACTICING/YEARS OF
RELEVANT EXPERIENCE***

20

HOURLY RATE

330

HST RATE CHARGED*

0.00

**CV STATUS (FOR
CONSULTANT/ANALYST)**

CV Attached

LAST CV DATE

July 12, 2023

**OVERRIDE
HOURLY RATE**

No

HST NUMBER

89659 3323 RT0001

HEARINGS

Yes

CONSULTATIONS

No

DISBURSEMENTS

No

HEARINGS

Hearings Hours
0.50

Hearings Subtotal (\$)
165.00

Hearings Total Tax (\$)
0.00

Hearings Total (\$)
165.00

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence		330		0.00		
DISCOVERY						
Preparation of Interrogatories		330		0.00		
Review Interrogatory Responses		330		0.00		
Technical Conference Preparation		330		0.00		
Technical Conference Attendance		330		0.00		
Technical Conference Follow Up		330		0.00		
ISSUES LIST						
Preparation		330		0.00		
Attendance at Issues Conference		330		0.00		
INTERVENOR EVIDENCE						
Preparation		330		0.00		
Interrogatory Responses	0.50	330	165.00	0.00		165.00
Preparation of Witness(es) for Attendance at Hearing		330		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		0.00		
Attendance		330		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		0.00		
Attendance at Presentation to Panel		330		0.00		
ORAL HEARING						
Preparation		330		0.00		
Attendance at Oral Hearing		330		0.00		
SUBMISSIONS						
Written Submissions		330		0.00		
Oral Submissions		330		0.00		
Attendance at Oral Submissions		330		0.00		
OTHER ATTENDANCE						
Other Attendance		330		0.00		
COMMUNICATION						
With Client		330		0.00		
With Other Parties		330		0.00		
MOTIONS						
Preparation of Motion(s) Materials		330		0.00		
Prepare Submissions on the Motion(s)		330		0.00		
Attendance at Hearing on Motion(s)		330		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		0.00		
Prepare Submissions on Confidentiality		330		0.00		
Attendance at Hearing on Confidentiality		330		0.00		
DECISION						
Review		330		0.00		
RATE ORDER						
Review		330		0.00		
Prepare Submission on Rate Order		330		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	0.50		165.00		0.00	165.00

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Woolf_TimeDockets_2 0230712.pdf	Time Docket	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Woolf CV_20230712.pdf	CV	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Woolf_TimeDockets_ 20230712.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Woolf CV_20230712.pdf	CV	Hearings	

4. Booked Time by Milestone ASH

End date →	Milestone ↑	Resource ↑	Level	January 2023		February 2023		March 2023		April 2023		May 2023		June 2023		Total										
				Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount	Sum of Total Hours	Sum of Total Billable Amount											
	Interrogatory responses	Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	2.75	\$0.00	0	\$0.00	19.75	\$0.00	19.75	\$6,517.50	\$907.50	
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$6,517.50	0	\$0.00	0	\$0.00	1	\$0.00	0	\$0.00	1	\$330.00	\$330.00	
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	
	Preparation for oral hearing	Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	
	Preparation of interrogatories	Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	
		Sol Delton	Analyst 20+	330	0.5	\$165.00	0	\$0.00	10.75	\$3,547.50	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0.25	\$82.50	0	\$0.00	0.25	\$82.50
	Preparation of interviewer evidence	Alice Napolean	Analyst 20+	330	0	\$0.00	2.5	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$3,712.50	\$3,712.50
		Alex Hopkins	Analyst 20+	330	5.5	\$1,815.00	7	\$2,310.00	48	\$4,464.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$825.00	\$825.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
	Review application and evidence	Alice Napolean	Analyst 20+	330	1	\$330.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$330.00	\$330.00
		Alex Hopkins	Analyst 20+	330	1.25	\$255.00	1.5	\$495.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$907.50	\$907.50
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$247.50	\$247.50
	Review interrogatory responses	Alice Napolean	Analyst 20+	330	1	\$330.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$330.00	\$330.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Sol Delton	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alice Napolean	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	\$0.00	\$0.00
		Alex Hopkins	Analyst 20+	330	0	\$0.00	0	\$0.00	0	\$0.00	0	\$0.00	0													

Tim Woolf, Senior Vice President

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PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Cambridge, MA. *Senior Vice President*, 2019 – Present, *Vice President*, 2011 – 2019.

Provides expert consulting on the economic, regulatory, consumer, environmental, and public policy implications of the electricity and gas industries. The primary focus of work includes technical and economic analyses, electric power system planning, climate change strategies, energy efficiency programs and policies, renewable resources and related policies, power plant performance and economics, air quality, and many related aspects of consumer and environmental protection.

Massachusetts Department of Public Utilities, Boston, MA. *Commissioner*, 2007 – 2011.

Oversaw a significant expansion of clean energy policies as a consequence of the Massachusetts Green Communities Act, including an aggressive expansion of ratepayer-funded energy efficiency programs; the implementation of decoupled rates for electric and gas companies; an update of the DPU energy efficiency guidelines; the promulgation of net metering regulations; review of smart grid pilot programs; and review of long-term contracts for renewable power. Oversaw six rate case proceedings for Massachusetts electric and gas companies. Played an influential role in the development of price responsive demand proposals for the New England wholesale energy market. Served as President of the New England Conference of Public Utility Commissioners from 2009-2010. Served as board member on the Energy Facilities Siting Board from 2007-2010. Served as co-chair of the Steering Committee for the Northeast Energy Efficiency Partnership's Regional Evaluation, Measurement and Verification Forum.

Synapse Energy Economics Inc., Cambridge, MA. *Vice President*, 1997 – 2007.

Tellus Institute, Boston, MA. *Senior Scientist, Manager of Electricity Program*, 1992 – 1997.

Association for the Conservation of Energy, London, England. *Research Director*, 1991 – 1992.

Massachusetts Department of Public Utilities, Boston, MA. *Staff Economist*, 1989 – 1990.

Massachusetts Office of Energy Resources, Boston, MA. *Policy Analyst*, 1987 – 1989.

Energy Systems Research Group, Boston, MA. *Research Associate*, 1983 – 1987.

Union of Concerned Scientists, Cambridge, MA. *Energy Analyst*, 1982-1983.

EDUCATION

Boston University, Boston, MA

Master of Business Administration, 1993

London School of Economics, London, England
Diploma, Economics, 1991

Tufts University, Medford, MA
Bachelor of Science in Mechanical Engineering,
1982

Tufts University, Medford, MA
Bachelor of Arts in English, 1982

REPORTS

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Malone, E., D. Goldberg, S. Kwok, T. Woolf. 2022. *The Cape Light Compact's Low-Income Energy Efficiency Programs: Challenges and Opportunities*. Synapse Energy Economics for The Cape Light Compact.

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Kallay, J., S. Letendre, T. Woolf, B. Havumaki, S. Kwok, A. Hopkins, R. Broderick, R. Jeffers, K. Jones, M. DeMenno. 2021. *Application of a Standard Approach to Benefit-Cost Analysis for Electric Grid Resilience Investments*. Synapse Energy Economics for Sandia National Laboratories.

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Glick, D., D. Bhandari, C. Roberto, T. Woolf. 2020. *Review of benefit-cost analysis for the EPA's proposed revisions to the 2015 Steam Electric Limitations Guidelines*. Synapse Energy Economics for Earthjustice and Environmental Integrity Project.

Knight, P., E. Camp, D. Bhandari, J. Hall, M. Whited, B. Havumaki, A. Allison, N. Peluso, T. Woolf. 2019. *Making Electric Vehicles Work for Utility Customers: A Policy Handbook for Consumer Advocates*. Synapse Energy Economics for the Energy Foundation.

Napoleon, A., B. Havumaki, D. Bhandari, T. Woolf. 2019. *Review of New Brunswick Power's Application for Approval of an Advanced Metering Infrastructure Capital Project: In the Matter of the New Brunswick Power Corporation and Section 107 of the Electricity Act; Matter No. 452*. Synapse Energy Economics for the New Brunswick Energy and Utilities Board Staff.

Malone, E., T. Woolf, S. Letendre. 2019. *New Hampshire Cost-Effectiveness Review: Application of the National Standard Practice Manual to New Hampshire*. Synapse Energy Economics for the New Hampshire Evaluation, Measurement, and Verification Working Group.

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United States Department of Energy (Docket Number-EE-RM-500): Comments with Bruce Biewald, Daniel Allen, David White, and Lucy Johnston of Synapse Energy Economics regarding the Department of Energy's proposed rules for efficiency standards for central air conditioners and heat pumps. On behalf of the Appliance Standards Awareness Project. December 2000.

US Department of Energy (Docket EE-RM-500): Oral testimony at a public hearing on marginal price assumptions for assessing new appliance efficiency standards. On behalf of the Appliance Standards Awareness Project. November 2000.

Connecticut Department of Public Utility Control (Docket No. 99-09-03 Phase II): Direct testimony regarding Connecticut Natural Gas Company's proposed performance-based ratemaking mechanism. On behalf of the Connecticut Office of Consumer Counsel. September 25, 2000.

Mississippi Public Service Commission (Docket No. 96-UA-389): Oral testimony regarding generation pricing and performance-based ratemaking. On behalf of the Mississippi Attorney General. February 16, 2000.

Delaware Public Service Commission (Docket No. 99-328): Direct testimony regarding maintaining electric system reliability. On behalf of Delaware Public Service Commission Staff. February 2, 2000.

Delaware Public Service Commission (Docket No. 99-328): Filed expert report ("Investigation into the July 1999 Outages and General Service Reliability of Delmarva Power & Light Company," jointly authored with J. Duncan Glover and Alexander Kusko). Synapse Energy Economics and Exponent Failure Analysis Associates on behalf the Delaware Public Service Commission Staff. February 1, 2000.

New Hampshire Public Service Commission (Docket No. 99-099 Phase II): Oral testimony regarding standard offer services. On behalf of the Campaign for Ratepayers Rights. January 14, 2000.

West Virginia Public Service Commission (Case No. 98-0452-E-GI): Rebuttal testimony regarding codes of conduct. On behalf of the West Virginia Consumer Advocate Division. July 15, 1999.

West Virginia Public Service Commission (Case No. 98-0452-E-GI): Direct testimony regarding codes of conduct and other measures to protect consumers in a restructured electricity industry. On behalf of the West Virginia Consumer Advocate Division. June 15, 1999.

Public Service Commission of West Virginia (Case No. 98-0452-E-GI): Filed expert report (“Measures to Ensure Fair Competition and Protect Consumers in a Restructured Electricity Industry in West Virginia,” jointly authored with Jean Ann Ramey and Theo MacGregor) in the matter of the General Investigation to determine whether West Virginia should adopt a plan for open access to the electric power supply market and for the development of a deregulation plan. Synapse Energy Economics and MacGregor Energy Consultancy on behalf of the West Virginia Consumer Advocate Division. June 1999.

Massachusetts Department of Telecommunications and Energy (DPU/DTE 97-111): Direct testimony regarding Commonwealth Electric Company’s energy efficiency plan, and the role of municipal aggregators in delivering demand-side management programs. On behalf of Cape and Islands Self-Reliance Corporation. January 1998.

Delaware Public Service Commission (DPSC 97-58): Direct testimony regarding Delmarva Power and Light’s request to merge with Atlantic City Electric. On behalf of Delaware Public Service Commission Staff. May 1997.

Delaware Public Service Commission (DPSC 95-172): Oral testimony regarding Delmarva’s integrated resource plan and DSM programs. On behalf of the Delaware Public Service Commission Staff. May 1996.

Colorado Public Utilities Commission (5A-531EG): Direct testimony regarding the impact of proposed merger on DSM, renewable resources and low-income DSM. On behalf of the Colorado Office of Energy Conservation. April 1996.

Colorado Public Utilities Commission (3I-199EG): Direct testimony regarding the impacts of increased competition on DSM, and recommendations for how to provide utilities with incentives to implement DSM. On behalf of the Colorado Office of Energy Conservation. June 1995.

Colorado Public Utilities Commission (5R-071E): Oral testimony on the Commission's integrated resource planning rules. On behalf of the Colorado Office of Energy Conservation. July 1995.

Colorado Public Utilities Commission (3I-098E): Direct testimony on the Public Service Company of Colorado's DSM programs and integrated resource plans. On behalf of the Colorado Office of Energy Conservation. April 1994.

Delaware Public Service Commission (Docket No. 96-83): Filed comments regarding the Investigation of Restructuring the Electricity Industry in Delaware (Tellus Institute Study No. 96-99). On behalf of the Staff of the Delaware Public Service Commission. November 1996.

Colorado Public Utilities Commission (Docket No. 96Q-313E): Filed comments in response to the Questionnaire on Electricity Industry Restructuring (Tellus Institute Study No. 96-130-A3). On behalf of the Colorado Governor's Office of Energy Conservation. October 1996.

State of Vermont Public Service Board (Docket No. 5854): Filed expert report (Tellus Institute Study No. 95-308) regarding the Investigation into the Restructuring of the Electric Utility Industry in Vermont. On behalf of the Vermont Department of Public Service. March 1996.

Pennsylvania Public Utility Commission (Docket No. I-00940032): Filed comments (Tellus Institute Study No. 95-260) regarding an Investigation into Electric Power Competition. On behalf of The Pennsylvania Office of Consumer Advocate. November 1995.

New Jersey Board of Public Utilities (Docket No. EX94120585Y): Initial and reply comments ("Achieving Efficiency and Equity in the Electricity Industry Through Unbundling and Customer Choice," Tellus Institute Study No. 95-029-A3) regarding an investigation into the future structure of the electric power industry. On behalf of the New Jersey Division of Ratepayer Advocate. September 1995.

ARTICLES

Malone, E., T. Woolf, D. Goldberg. 2019. "Assessing Resource Cost Effectiveness." *A.E.S.P. Magazine*, 2019 Edition, 8-10.

Woolf, T., E. Malone, C. Neme, R. LeBaron. 2014. "Unleashing Energy Efficiency." *Public Utilities Fortnightly*, October, 30-38.

Woolf, T., A. Sommer, J. Nielson, D. Berry, R. Lehr. 2005. "Managing Electricity Industry Risk with Clean and Efficient Resources." *The Electricity Journal* 18 (2): 78–84.

Woolf, T., A. Sommer. 2004. "Local Policy Measures to Improve Air Quality: A Case Study of Queens County, New York." *Local Environment* 9 (1): 89–95.

Woolf, T. 2001. "Clean Power Opportunities and Solutions: An Example from America's Heartland." *The Electricity Journal* 14 (6): 85–91.

Woolf, T. 2001. "What's New With Energy Efficiency Programs." *Energy & Utility Update, National Consumer Law Center*: Summer 2001.

Woolf T., B. Biewald. 2000. "Electricity Market Distortions Associated With Inconsistent Air Quality Regulations." *The Electricity Journal* 13 (3): 42–49.

Ackerman, F., B. Biewald, D. White, T. Woolf, W. Moomaw. 1999. "Grandfathering and Coal Plant Emissions: the Cost of Cleaning Up the Clean Air Act." *Energy Policy* 27 (15): 929–940.

Biewald, B., D. White, T. Woolf. 1999. "Follow the Money: A Method for Tracking Electricity for Environmental Disclosure." *The Electricity Journal* 12 (4): 55–60.

Woolf, T., B. Biewald. 1998. "Efficiency, Renewables and Gas: Restructuring As if Climate Mattered." *The Electricity Journal* 11 (1): 64–72.

Woolf, T., J. Michals. 1996. "Flexible Pricing and PBR: Making Rate Discounts Fair for Core Customers." *Public Utilities Fortnightly*, July 1996.

Woolf, T., J. Michals. 1995. "Performance-Based Ratemaking: Opportunities and Risks in a Competitive Electricity Industry." *The Electricity Journal* 8 (8): 64–72.

Woolf, T. 1994. "Retail Competition in the Electricity Industry: Lessons from the United Kingdom." *The Electricity Journal* 7 (5): 56–63.

Woolf, T. 1994. "A Dialogue About the Industry's Future." *The Electricity Journal* 7 (5).

Woolf, T., E. D. Lutz. 1993. "Energy Efficiency in Britain: Creating Profitable Alternatives." *Utilities Policy* 3 (3): 233–242.

Woolf, T. 1993. "It is Time to Account for the Environmental Costs of Energy Resources." *Energy and Environment* 4 (1): 1–29.

Woolf, T. 1992. "Developing Integrated Resource Planning Policies in the European Community." *Review of European Community & International Environmental Law* 1 (2) 118–125.

PRESENTATIONS

Woolf, T. B Havumaki. 2022. "Economic Assessment of Grid Modernization Plans." Presentation at the NASUCA 2022 Mid-Year Meeting.

Woolf, T. 2019. "Benefit-Cost Analysis for Utility-Facing Grid Modernization Investments." Distribution Systems and Planning Training for Mid-Atlantic Region and NARUC-NASEO Task Force on Comprehensive Electricity Planning. March 7-8, 2019.

Woolf, T. 2018. Stakeholder presentation on "Updating the Energy Efficiency Cost-Effectiveness Framework in Minnesota: Application of the National Standard Practice Manual to Minnesota." Synapse Energy Economics project for Minnesota Department of Commerce, Division of Energy Resources, supported by the Conservation Applied Research and Development (CARD) Program. St. Paul, Minnesota. September 2018.

Woolf, T. 2018. "Benefit-Cost Analysis for Investments in the Modern Grid: Recent trends in how to determine whether grid modernization investments will deliver value to customers." Smart Money Panel, NARUC Summer Policy Summit. Scottsdale, Arizona.

Woolf, T. 2018. "Benefit-Cost Analysis for New York Energy Investments." Training Session for Earthjustice.

Woolf, T. 2018. "National Standard Practice Manual for Energy Efficiency Cost-Effectiveness." Presentation at the NASUCA 2018 Mid-Year Meeting.

Woolf, T. 2018. "The National Standard Practice Manual and the Value of Energy Efficiency in New York." Presentation on behalf of the Natural Resources Defense Council at the Stakeholder Forum, Case 18-M-0084.

Woolf, T., M. Whited. 2016. "Show Me the Numbers: A Framework for Balanced Distributed Solar Policies." Presentation for Consumers Union Webinar, December 2016.

Woolf, T. 2016. "Show Me the Numbers: Balancing Solar DG with Consumer Protection." Public workshop on solar distributed generation for the Federal Trade Commission, June 2016.

Woolf, T. 2016. "Rate Designs for Distributed Generation: State Activities & A New Framework." Presentation at the NASUCA 2016 Mid-Year Meeting, June 2016.

Woolf, T., M. Whited. 2016. "3rd Annual 21st Century Electricity System Workshop – Implications of Different Rate Designs." Presentation at the Advanced Energy Economy Institute, April 2016.

Woolf, T., M. Whited. 2016. "Decoupling in Pennsylvania: Advantages, Disadvantages, and Design Issues." Presentation to Pennsylvania Decoupling Stakeholders, February 2016.

Woolf, T. 2016. "Earnings Impact Mechanisms: Energy Efficiency." Presentation at the New York REV Technical Conference, January 2016.

Lowry, M. N., T. Woolf. 2015. "Performance-Based Regulation in a High Distributed Energy Resources Future." Webinar on January 2016.

Woolf, T. 2015. "Performance Incentive Mechanisms: A Catalyst for Change." Webinar for Power Sector Transformation Group, December 2015.

Woolf, T. 2015. "Energy Efficiency Valuation: Boogie Men, Time Warps, and other Terrifying Pitfalls." Presentation at ACEEE Conference on Energy Efficiency as a Resource, September 2015.

Woolf, T., M. Whited, A. Napoleon. 2015. "Thoughts on How to Design Clean Energy Performance Incentive Mechanisms." Webinar for the Western Clean Energy Advocates, April 2015.

Woolf, T. 2015. "Properly Valuing the Benefits and Costs of Energy Efficiency." Presentation at the 2015 National Efficiency Advocates Meeting, April 2015.

Woolf, T. 2015. "Non-Energy Benefits & Efficiency Program Screening." Presentation for Georgia DSM Work Group, March 2015.

Woolf, T. 2014. "Performance Incentive Mechanisms And Their Role in New Regulatory Models." Presentation at Acadia Center Conference, Envisioning Our Energy Future, December 2014.

Woolf, T., M. Whited., A. Napoleon. 2014. "Guiding Utility Performance: A Handbook for Regulators." Webinar for the Western Interstate Energy Board, December 2014.

Woolf, T. 2014. "Planning for Distributed Energy Resources." Presentation for Advanced Energy Economy Webinar, November 2014.

Woolf, T. 2014. "Benefit-Cost Analysis for Distributed Energy Resources in New York: A Framework for Accounting for All Relevant Costs and Benefits." Presentation to NARUC ERE Committee, November 2014.

Woolf, T. 2014. "Presenting the Full Value of Energy Efficiency: Creating a Better Message." Presentation at Sierra Club Beyond Coal Conference, October 2014.

Woolf, T., C. Neme. 2014. "Regulatory Policies to Support Energy Efficiency in Virginia." Presentation for the 2014 Virginia Energy Efficiency Workshop, October 2014.

Woolf, T. 2014. "Benefit-Cost Analysis for Distributed Energy Resources in New York: A Framework for Accounting for All Relevant Costs and Benefits." Presentation for Advanced Energy Economy Institute, October 2014.

Woolf, T. 2014. "Performance Incentive Mechanisms: Digging Deeper Into Performance-Based Regulation." Presentation for National Governor's Association Conference: Utility Business Models That Align with State Clean Energy Goals, September 2014.

Woolf, T. 2014. "The Resource Value Framework: Reforming Energy Efficiency Cost-Effectiveness Screening." Presentation at the ACEEE Summer Study, August 2014.

Woolf, T. 2014. "Cost-Effectiveness of Demand Response." Presentation at MADRI Working Group Meeting #34, July 2014.

Woolf, T. 2014. "Time to Overhaul Our Energy Efficiency Screening Practices." Presentation for U.S. Environmental Protection Agency Energy Efficiency Cost-Effectiveness Webinar, January 2014.

Woolf, T. 2013. "Survey of Energy Efficiency Screening Practices in the Northeast and Mid-Atlantic." Presentation for Northeast Energy Efficiency Partnerships EM&V Forum Annual Public Meeting, December 2013.

Woolf, T. 2013. "Recommendations for Reforming Energy Efficiency Cost-Effectiveness Screening in the United States." Presentation at the National Association of Regulatory Commissioners Annual Meeting, November 2013.

Woolf, T. 2013. "Energy Efficiency Program Screening: Let's Get Beyond the TRC Test." Presentation for 7th Annual ENERGY STAR Certified Homes Utility Sponsor Meeting, October 2013.

Woolf, T. 2013. "Decoupling in Maine: Why Decoupling is in Consumers' Interest." Presentation for Office of Public Advocate- Decoupling Debate, October 2013.

Woolf, T. 2013. "NHPC Efficiency Screening Initiative: Unleashing the Potential for Energy Efficiency." Presentation for Advocates Meeting, September 2013.

Woolf, T. 2013. "Energy Efficiency: Rate, Bill and Participation Impacts." Presentation for ACEEE's Energy Efficiency as a Resource Conference, September 2013.

Woolf, T. 2013. "Energy Efficiency Screening: Challenges and Opportunities." Presentation for NARUC Summer Meeting Consumer Affairs Panel, July 2013.

Woolf, T., R. Sedano. 2013. "Decoupling Overview." Presentation for Finding Common Ground Meeting, July 2013.

Woolf, T. 2013. "Utility Incentives for Energy Efficiency." Presentation for Finding Common Ground Meeting, July 2013.

Woolf, T. 2013. "Energy Efficiency: Rate, Bill and Participation Impacts." Presentation for State Energy Efficiency Action Webinar, June 2013.

Woolf, T., B. Biewald, and J. Migden-Ostrander. 2013. "NARUC Risk Workshop for Regulators." Presentation at the Mid-Atlantic Conference of Regulatory Utility Commissioners, June 2013.

Woolf, T. 2013. "Energy Efficiency Screening: Accounting for 'Other Program Impacts' & Environmental Compliance Costs." Presentation for the Consortium for Energy Efficiency Summer Meeting, May 2013.

Woolf, T. 2013. "Best Practices in Energy Efficiency Program Screening." Presentation at ACI National Home Performance Conference, May 2013.

Woolf, T. 2013. "Utility Shareholder Incentives to Support Energy Efficiency Programs." Presentation to Common Ground, May 2013.

Woolf, T. 2013. "Energy Efficiency Screening: Accounting for 'Other Program Impacts' & Environmental Compliance Costs." Presentation for Regulatory Assistance Project Webinar, March 2013.

Woolf, T. 2013. "Energy Efficiency: Rates, Bills, Participants, Screening, and More." Presentation at Connecticut Energy Efficiency Workshop, March 2013.

Woolf T. 2013. "Best Practices in Energy Efficiency Program Screening." Presentation for SEE Action Webinar, March 2013.

Woolf, T. 2013. "Energy Efficiency: Rates, Bills and Participants." Presentation for Rhode Island Energy Efficiency Collaborative, February 2013.

Woolf, T. 2013. "Energy Efficiency Screening: Application of the TRC Test." Presentation for Energy Advocates Webinar, January 2013.

Woolf, T. 2012. "Best Practices in Energy Efficiency Program Screening." Presentation for American Council for an Energy-Efficient Economy Webinar, December 2012.

Woolf, T. 2012. Indian Point Replacement Analysis: A Clean Energy Roadmap. Presentation for Natural Resource Defenses Council and Environmental Entrepreneurs, November 2012.

Woolf, T. 2012. "In Pursuit of All Cost-Effective Energy Efficiency." Presentation at Sierra Club Boot Camp, October 2012.

Woolf, T. 2012. "Best Practices in Energy Efficiency Program Screening." Webinar for Northeast Energy Efficiency Partnerships, September 2012.

Woolf, T., L. Schwartz. "What Remains to be Done with Demand Response? A National Forum from the FERC National Action Plan on Demand Response Tries to Give an Answer." Presentation at NARUC National Town Meeting on Demand Response, July 2012.

Woolf, T. 2012. "Best Practices in Energy Efficiency Program Screening." Presentation at NARUC Summer Meetings – Energy Efficiency Cost-Effectiveness Breakfast, July 2012.

Woolf, T. 2012. "Avoided Cost of Complying with Environmental Regulations in MA." Presentation for Mass Energy Consumer's Alliance, January 2012.

Woolf, T. 2011. "Energy Efficiency Cost-Effectiveness Tests." Presentation at the Northeast Energy Efficiency Partnerships Annual Meeting, October 2011.

Woolf, T. 2011. "Why Consumer Advocates Should Support Decoupling." Presentation at the 2011 ACEEE National Conference on Energy Efficiency as a Resource, September 2011.

Woolf, T. 2011. "A Regulator's Perspective on Energy Efficiency." Presentation at the Efficiency Maine Symposium *In Pursuit of Maine's Least-Cost Energy*, September 2011.

Woolf, T. 2010. "Bill Impacts of Energy Efficiency Programs: The Importance of Analyzing and Managing Rate and Bill Impacts." Presentation at the Energy in the Northeast Conference, Law Seminar International, September 2010.

Woolf, T. 2010. "Bill Impacts of Energy Efficiency Programs: The Implications of Bill Impacts in Developing Policies to Motivate Utilities to Implement Energy Efficiency." Presentation to the State Energy Efficiency Action Network, Utility Motivation Work Group, November 2010.

Woolf, T. 2010. "Bill Impacts of Energy Efficiency Programs." Presentation to the Energy Resources and Environment Committee at the NARUC Winter Meetings, February 2010.

Woolf, T. 2009. "Price-Responsive Demand in the New England Wholesale Energy Market: Description of NECPUC's Limited Supply-Side Proposal." Presentation at the NEPOOL Markets Committee Meeting, November 2009.

Woolf, T. 2009. "Demand Response in the New England Wholesale Energy Market: How Much Should We Pay for Demand Resources?" Presentation at the New England Electricity Restructuring Roundtable, October 2009.

Woolf, T. 2008. "Promoting Demand Resources in Massachusetts: A Regulator's Perspective." Presentation at the Energy Bar Association, Northeast Chapter Meeting, June 2008.

Woolf, T. 2008. "Turbo-Charging Energy Efficiency in Massachusetts: A DPU Perspective." Presentation at the New England Electricity Restructuring Roundtable, April 2008.

Woolf T. 2002. "A Renewable Portfolio Standard for New Brunswick." Presentation to the New Brunswick Market Design Committee, January 10, 2002.

Woolf, T. 2001. "Potential for Wind and Renewable Resource Development in the Midwest." Presentation at WINDPOWER 2001 in Washington DC, June 7, 2001.

Woolf T. 1999. "Challenges Faced by Clean Generation Resources Under Electricity Restructuring." Presentation at the Symposium on the Changing Electric System in Florida and What it Means for the Environment in Tallahassee, FL, November 1999.

Woolf, T. 2000. "Generation Information Systems to Support Renewable Portfolio Standards, Generation Performance Standards and Environmental Disclosure." Presentation at the Massachusetts Restructuring Roundtable on behalf of the Union of Concerned Scientists, March 2000.

Woolf, T. 1998. "New England Tracking System Project: An Electricity Tracking System to Support a Wide Range of Restructuring-Related Policies." Presentation at the Ninth Annual Energy Services Conference and Exposition in Orlando, FL, December 1998.

Woolf, T. 2000. "Comments of the Citizens Action Coalition of Indiana." Presentation at Workshop on Alternatives to Traditional Generation Resources, June 2000.

Woolf, T. 1996. "Overview of IRP and Introduction to Electricity Industry Restructuring." Training session provided to the staff of the Delaware Public Service Commission, April 1996.

Woolf, T. 1995. "Competition and Regulation in the UK Electric Industry." Presentation at the Illinois Commerce Commission's workshop on Restructuring the Electric Industry, August 1995.

Woolf, T. 1995. "Competition and Regulation in the UK Electric Industry." Presentation at the British Columbia Utilities Commission Electricity Market Review, February 1995.

Resume updated August 2022

Tyler Fitch**CASE**

EB-2022-0200: Rates:
Distribution: Enbridge Gas Inc.

COST CLAIM

EB-2022-0200 : 1 : Cathy
Galler

INTERVENOR NAME

Galler, Cathy ; +1 (416)
369-4570
cathy.galler@gowlingwlg.com

PARTICIPANT

CLAIM STATUS
Submitted

FILING PARTICIPANT**NEW
PARTICIPANT**

Yes

**NON-FILING
PARTICIPANT F. NAME**

Tyler

**NON-FILING
PARTICIPANT L. NAME**

Fitch

SERVICE PROVIDER TYPE*

Analyst

YEAR CALLED TO BAR***COMPLETED YEARS
PRACTICING/YEARS OF
RELEVANT EXPERIENCE***

10

HOURLY RATE

230

HST RATE CHARGED*

0.00

**CV STATUS (FOR
CONSULTANT/ANALYST)**

CV Attached

LAST CV DATE

July 12, 2023

**OVERRIDE
HOURLY RATE**

No

HST NUMBER

89659 3323 RT0001

HEARINGS

Yes

CONSULTATIONS

No

DISBURSEMENTS

No

HEARINGS**Hearings Hours**

1.00

Hearings Subtotal (\$)

230.00

Hearings Total Tax (\$)

0.00

Hearings Total (\$)

230.00

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	1.00	230	230.00	0.00		230.00
DISCOVERY						
Preparation of Interrogatories		230		0.00		
Review Interrogatory Responses		230		0.00		
Technical Conference Preparation		230		0.00		
Technical Conference Attendance		230		0.00		
Technical Conference Follow Up		230		0.00		
ISSUES LIST						
Preparation		230		0.00		
Attendance at Issues Conference		230		0.00		
INTERVENOR EVIDENCE						
Preparation		230		0.00		
Interrogatory Responses		230		0.00		
Preparation of Witness(es) for Attendance at Hearing		230		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		230		0.00		
Attendance		230		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		230		0.00		
Attendance at Presentation to Panel		230		0.00		
ORAL HEARING						
Preparation		230		0.00		
Attendance at Oral Hearing		230		0.00		
SUBMISSIONS						
Written Submissions		230		0.00		
Oral Submissions		230		0.00		
Attendance at Oral Submissions		230		0.00		
OTHER ATTENDANCE						
Other Attendance		230		0.00		
COMMUNICATION						
With Client		230		0.00		
With Other Parties		230		0.00		
MOTIONS						
Preparation of Motion(s) Materials		230		0.00		
Prepare Submissions on the Motion(s)		230		0.00		
Attendance at Hearing on Motion(s)		230		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		230		0.00		
Prepare Submissions on Confidentiality		230		0.00		
Attendance at Hearing on Confidentiality		230		0.00		
DECISION						
Review		230		0.00		
RATE ORDER						
Review		230		0.00		
Prepare Submission on Rate Order		230		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	1.00		230.00	0.00		230.00

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Fitch_TimeDockets_20 230712.pdf	Time Docket	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Fitch CV_20230712.pdf	CV	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Fitch_TimeDockets_2 0230712.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Synapse_Fitch CV_20230712.pdf	CV	Hearings	

4. Booked Time by Milestone ASH

[illegible]

Tyler Fitch, Senior Associate

Synapse Energy Economics | 485 Massachusetts Avenue, Suite 3 | Cambridge, MA 02139 | 617-453-3890
tfitch@synapse-energy.com

PROFESSIONAL EXPERIENCE

Synapse Energy Economics Inc., Washington, DC. *Senior Associate*, November 2021 – Present.

Conducts regulatory analysis and provides expert testimony on energy & climate issues. Examples include:

- Evaluating utility proposals for additional generation infrastructure against more economic and less carbon-intensive alternatives;
- Assessing the economic viability and prudence of continued operations of legacy coal plants as opposed to alternative resources and market purchases.

Vote Solar, Washington, DC. *Regulatory Director*, February – November 2021; *Regulatory Manager*, August 2018 – February 2021.

Regulatory Director:

- Directed Vote Solar's climate and clean energy regulatory advocacy in the Carolinas, including public-facing reports and webinars; directing regulatory litigation; managing professional services and consultants; and developing advocacy in coalition with clean energy, environmental, and environmental justice stakeholders.
- Authored a technical report assessing stranded asset risk of electric generation infrastructure as a result of corporate carbon neutrality commitments. Results quoted in *Bloomberg*, *S&P*, and *GreenTechMedia*.
- Implemented a settlement with Duke Energy to conduct a region-leading investigation into physical climate-related impacts to electricity infrastructure in the Carolinas.
- Provided expert testimony in utility integrated resource planning proceedings identifying emergent climate-related risks and implications for utility planning, then providing recommendations for utility resource planning moving forward.

Regulatory Manager:

- Developed nation-leading quantitative assessment and regulatory direction for responding to the increase in residential utility debts as a result of COVID-19.
- Provided expert testimony on best practices in grid modernization in the context of climate-related physical risks to the North Carolina Utilities Commission.
- Provided expert testimony on utility rate design to the Virginia State Corporation Commission and Georgia Public Service Commission.

-
- Developed a flexible spreadsheet-based tool for assessing solar value proposition across several different rate design and project cost sensitivities.

The University of Michigan, Ann Arbor, MI. *Research Assistant, Urban Energy Justice Lab*, September 2016 – May 2018.

ICF International, Fairfax, VA. *Analyst*, October 2013 – June 2016.

- Developed energy efficiency scores for *ENERGY STAR* buildings using large data sets and multiple linear regression.
- As data lead for the multifamily sector of the *Better Buildings Challenge* wrote data policy and managed data submission for 100+ partners, spanning hundreds of buildings across the country.

EDUCATION

The University of Michigan, Ann Arbor, MI

Master of Science, School of Natural Resources and the Environment, 2018

Masters Project: *Fueling a Transition: Evaluating the Feasibility for a Hybrid Renewable Microgrid in Beni, Democratic Republic of Congo*

University of North Carolina, Chapel Hill, NC

Bachelor of Science, 2013

Environmental Science, Focus: Energy and Sustainability; Minor: Computer Science

PUBLICATIONS

Fitch, T., J. Tabernero, D. Bhandari. 2022. *Carbon-Free by 2050: Pathways to Achieving North Carolina's Power Sector Carbon Requirements at Least Cost to Ratepayers*. Synapse Energy Economics for North Carolina Sustainable Energy Association, Southern Alliance for Clean Energy, Natural Resources Defense Council, and the Sierra Club.

Fitch, T., Kwok, S., Kalley, J., & Chang, M. 2022. *Designing Effective Electric Grid Resiliency Plans: Brief for Decisionmakers in Entergy New Orleans' Resiliency Planning Process*.

Fitch, T. 2021. *Carbon Stranding Briefing: Risks of Carbon Stranding in Duke Energy's Modified 2020 Integrated Resource Plan*. Vote Solar.

Fitch, T. 2021. *Initial Comments to South Carolina Public Service Commission on Measures to Be Taken to Mitigate Impact of Threats to Safe and Reliable Utility Service*. Vote Solar.

Fitch, T. 2021. *Partial Proposed Order to South Carolina Public Service Commission, related to Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's 2020 Integrated Resource Plans*. Vote Solar.

Fitch, T. 2021. *Initial Comments to North Carolina Utilities Commission in the Matter of Duke Energy Carolinas, LLC and Duke Energy Progress, LLC's 2020 Integrated Resource Plans*. Vote Solar.

Fitch, T. 2021. *Carbon Stranding: Climate Risk and Stranded Assets in Duke Energy's Integrated Resource Plans*. Vote Solar.

Fitch, T. 2020. *10 Principles for Duke's Integrated Resource Plans in the Public Interest*. Vote Solar.

Fitch, T., & Ottenweller, K. 2020. *The State of Rooftop Solar in Florida*. Vote Solar.

Fitch, T. 2020. *Principles for Protecting Electric Utility Customers in the Regulatory Response to COVID-19*. Vote Solar.

Fitch, T., & Ottenweller, K. 2020. *The Costs & Risks of Florida's Dependence on Natural Gas*. Vote Solar.

Fitch, T. 2020. *COVID-19 and the Utility Bill Debt Crisis*. Vote Solar.

Culley, T., & Fitch, T. 2019. *Comments to the North Carolina Department of Environmental Quality on Draft Clean Energy Plan*.

Fitch, T. 2018. *Islands of Light: Microgrids and the Public Good*. *Agora Planning Journal*, 12, 74-80.

Vanderwilde, C., & Fitch, T. 2018. *Fueling the Energy Transition: Can a Congolese community affordably electrify with renewable resources?* University of Michigan Sustainability Cases.

Fitch, T., Lenhart, A., Buchanan, C., & Jeong, B. 2018. *Get Free: Understanding the Potential for Community Solar Power in Highland Park*. Dow Sustainability Report Series.

TESTIMONY

North Carolina Utilities Commission (Docket No. E-100 Sub 179): Direct Testimony of Tyler Fitch in the matter of Duke Energy Progress and Duke Energy Carolinas' 2022 Carbon Plan. September 2, 2022.

Georgia Public Service Commission (Docket No. 44160): Direct Testimony of Tyler Fitch in the matter of Georgia Power Company's 2021 Integrated Resources Plan. May 4, 2022.

South Carolina Public Service Commission (Docket Nos. 2019-224-E and 2019-225-E): Surrebuttal Testimony of Tyler Fitch in the matter of the 2020 Integrated Resource Plans for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC. April 15, 2021.

South Carolina Public Service Commission (Docket Nos. 2019-224-E and 2019-225-E): Direct Testimony of Tyler Fitch in the matter of the 2020 Integrated Resource Plans for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC. February 5, 2021.

North Carolina Utilities Commission (Docket No. E-2, Sub 1219): Direct Testimony of James Van Nostrand and Tyler Fitch in the Matter of Application of Duke Energy Progress, LLC for Adjustment of Rates and Charges Applicable to Electric Service in North Carolina. April 13, 2020.

Virginia State Corporation Commission (Docket No. PUR-2019-00214): Direct Testimony of Tyler Fitch in the matter of the Application of Virginia Electric and Power Company for approval to establish an experimental residential rate. March 31, 2020.

North Carolina Utilities Commission (Docket No. E-7, Sub 1214): Direct Testimony of James Van Nostrand and Tyler Fitch in the Matter of Application of Duke Energy Carolinas, LLC for Adjustment of Rates and Charges Applicable to Electric Service in North Carolina. February 18, 2020.

Georgia Public Service Commission (Docket No. 42516): Direct Testimony of Tyler Fitch and Rick Gilliam in the Matter of Georgia Power Company's 2019 Base Rate Case. October 17, 2019.

Resume updated January 2023

Chris Hummel

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Chris	NON-FILING PARTICIPANT L. NAME Hummel
SERVICE PROVIDER TYPE* Legal Counsel	YEAR CALLED TO BAR* 2019	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 4	HOURLY RATE 170
HST RATE CHARGED* 13.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Required	LAST CV DATE	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
4.60	782.00	101.66	883.66			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence		170		13.00		
DISCOVERY						
Preparation of Interrogatories		170		13.00		
Review Interrogatory Responses		170		13.00		
Technical Conference Preparation		170		13.00		
Technical Conference Attendance		170		13.00		
Technical Conference Follow Up		170		13.00		
ISSUES LIST						
Preparation		170		13.00		
Attendance at Issues Conference		170		13.00		
INTERVENOR EVIDENCE						
Preparation	4.60	170	782.00	13.00	101.66	883.66
Interrogatory Responses		170		13.00		
Preparation of Witness(es) for Attendance at Hearing		170		13.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		170		13.00		
Attendance		170		13.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		170		13.00		
Attendance at Presentation to Panel		170		13.00		
ORAL HEARING						
Preparation		170		13.00		
Attendance at Oral Hearing		170		13.00		
SUBMISSIONS						
Written Submissions		170		13.00		
Oral Submissions		170		13.00		
Attendance at Oral Submissions		170		13.00		
OTHER ATTENDANCE						
Other Attendance		170		13.00		
COMMUNICATION						
With Client		170		13.00		
With Other Parties		170		13.00		
MOTIONS						
Preparation of Motion(s) Materials		170		13.00		
Prepare Submissions on the Motion(s)		170		13.00		
Attendance at Hearing on Motion(s)		170		13.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		170		13.00		
Prepare Submissions on Confidentiality		170		13.00		
Attendance at Hearing on Confidentiality		170		13.00		
DECISION						
Review		170		13.00		
RATE ORDER						
Review		170		13.00		
Prepare Submission on Rate Order		170		13.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	4.60		782.00	101.66		883.66

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Hummel_TimeDockets_2023071 2.pdf	Time Docket	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Hummel_TimeDockets_202307 12.pdf	Time Docket	Hearings	

May 31, 2023
INVOICE: 20064841

Industrial Gas Users Association
Our Matter: T1029927
EGI 2024 Rebasing and IRM Application (EB-2022-0200) (IGUA22-ON-EGI-8)

PROFESSIONAL SERVICES

	Date	Hours	Timekeeper	Description
COM-CL	2023-04-01	0.20	Ian Mondrow	Ensure experts workplan dates are current and fees update to IGUA;
COM-OP	2023-04-01	0.30	Ian Mondrow	Review EGI letter responding to ED letter regarding additional evidence on carbon footprint of blue hydrogen; review intervenor correspondence regarding Panhandle/St. Clair system cost allocation;
TCA	2023-04-01	0.20	Ian Mondrow	Review B. Knecht reports on Friday's Technical Conference; review S. Cleary input on IRR follow-up;
TCA	2023-04-03	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-03	5.00	Ian Mondrow	Complete review of D. Madsen draft evidence and provide comments/questions for further consideration; review Synapse draft evidence and provide comments/considerations;
IEP	2023-04-04	2.40	Ian Mondrow	Review Synapse modelling description document; call with IGUA and experts to review draft evidence; review notes from experts regarding work updates and additional comments;
RAE	2023-04-04	0.40	Ian Mondrow	Review EGI letter regarding updated Guidehouse pathways study and impact on filing of ED/GEC pathways evidence, and note to A. Hopkins to consider and advise of any concerns;
COM-CL	2023-04-05	0.40	Ian Mondrow	Update to S. Rahbar and IGUA Ontario Caucus chair;
TCA	2023-04-05	0.60	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
COM-OP	2023-04-05	0.30	Ian Mondrow	Review Procedural Order 4; intervenor correspondence;
TCA	2023-04-06	0.40	Ian Mondrow	Review Technical Conference transcripts (in lieu of attendance);
IEP	2023-04-06	0.60	Ian Mondrow	Discussion with C. Hummel regarding equity thickness OEB policy questions for response and provide guidance note;
COM-OP	2023-04-06	0.30	Ian Mondrow	Correspondence with M. Rubenstein regarding EGI proposal on Guidehouse update and Neme evidence filing;
COM-OP	2023-04-07	0.30	Ian Mondrow	Correspondence with D. Poch regarding motions and EGI proposal regarding pathways/C. Neme evidence;
COM-CL	2023-04-07	0.70	Ian Mondrow	Retrieve Technical Conference undertaking responses and forward to IGUA experts; review recent correspondence with IGUA experts;

Terms: payment due within 30 days of invoice date
Interest at the rate of 4.8% per annum will be charged on all amounts not paid within 30 days of invoice date
Errors and omissions excluded

May 31, 2023
INVOICE: 20064841

RAE	2023-04-07	0.60	Ian Mondrow	Review EGI/Guidehouse update filing;
IEP	2023-04-08	2.90	Ian Mondrow	Review S. Cleary draft evidence and provide comments;
TCA	2023-04-10	0.30	Ian Mondrow	Review Technical Conference transcripts in lieu of attendance;
IEP	2023-04-10	1.10	Ian Mondrow	Correspondence with experts to clarify cross-references in draft evidence and regarding evidence revision and finalization; correspondence with experts regarding potential revised schedule and response to OEB Staff;
COM-CL	2023-04-10	1.20	Ian Mondrow	Review e-mail inquiries from members regarding rate changes, provide preliminary responses, and inquiry of B. Knecht for assistance in validating rate impacts;
COM-OP	2023-04-10	1.00	Ian Mondrow	Review ED and SEC motions day letters and share with IGUA business risk experts;
IEP	2023-04-11	4.60	Christopher Hummel	Prepared and circulated Expert Form A for A. Hopkins, S. Cleary, and D. Madsen; researched history of OEB's equity thickness test and drafted analysis on rationale for I. Mondrow;
TCA	2023-04-11	0.40	Ian Mondrow	Continue review of Technical Conference transcripts in lieu of attendance;
COM-OP	2023-04-11	1.70	Ian Mondrow	Correspondence/discussions with parties regarding proposed updated schedule;
COM-CL	2023-04-11	0.50	Ian Mondrow	Update notes to client and experts on evolving rescheduling discussions and revision of expert work plan timing to finalize evidence and prepare for IRs;
IEP	2023-04-12	0.70	Ian Mondrow	Reviewing C. Hummel reporting note on cost of capital policy research and interm note to A. Hopkins with relevant OEB materials;
IEP	2023-04-12	1.50	Ian Mondrow	Correspondence with experts and discussion with S. Rahbar regarding status of work and finalizing evidence;
COM-OP	2023-04-12	0.40	Ian Mondrow	Review EGI response to motions day submissions and consider;
IEP	2023-04-13	0.30	Ian Mondrow	Review recent IGUA expert correspondence;
RAE	2023-04-13	0.50	Ian Mondrow	Review EGI filing updates;
IEP	2023-04-13	1.20	Ian Mondrow	Review Procedural Order No. 5 and revised experts work plan accordingly; circulate revised work plan with covering note highlighting next steps;
AHM	2023-04-14	1.00	Ian Mondrow	Review Motions Day transcript in lieu of attendance;
COM-OP	2023-04-14	0.70	Ian Mondrow	Discussion with D.R. Quinn regarding T2 cost allocation issue;
IEP	2023-04-16	3.00	Ian Mondrow	Full review and additional comment on S. Cleary draft evidence;
IEP	2023-04-17	2.80	Ian Mondrow	Final review of S. Cleary evidence changes and instructions for assembly; review D. Madsen revised draft evidence;

May 31, 2023
INVOICE: 20064841

IEP	2023-04-18	4.80	Ian Mondrow	Continued detailed review and comment on expert evidence;
TC-FOL-UP	2023-04-18	0.50	Ian Mondrow	Review EGI updated Technical Conference responses for IGUA cost allocation matters; note to B. Knecht regarding status and next steps on cost allocation and rate design work;
COM-CL	2023-04-19	0.80	Ian Mondrow	Update to Ontario Caucus;
IEP	2023-04-19	0.20	Ian Mondrow	Review additional revisions to D. Madsen evidence;
IEP	2023-04-20	1.90	Ian Mondrow	Final review of S. Cleary evidence as formatted for filing and filing directions provided; correspondence with other experts regarding work status/finalizing evidence;
COM-CL-0.7 COM-OP-0.7	2023-04-20	1.40	Ian Mondrow	Review and consider note from intervenor regarding load balancing cost allocation, review associated evidence, and forward to B. Knecht for consideration; review IGUA approach to calculation of member rate impacts; call with A. Vachon (IGUA) to review approach to rate impact calculations;
IEP	2023-04-21	1.00	Cathy Galler	Formatting and filing expert evidence;
IEP	2023-04-21	1.90	Ian Mondrow	Review and final instructions for compilation and filing of IGUA sponsored evidence; drafting evidence transmittal letter;
RAE	2023-04-21	2.00	Ian Mondrow	Review EGI gas supply plan update regarding relevance to IGUA members and rebasing application topics; review EGI updates and parties' evidence filed;
COM-CL	2023-04-21	1.00	Ian Mondrow	Call with IGUA Ontario Caucus chairs (outgoing and incoming) regarding next update to Caucus and Board of Directors;
RAE	2023-04-21	0.60	Ian Mondrow	Review Guidehouse update and related EGI filing; note to A. Hopkins regarding next steps in finalizing Synapse evidence;
RAE	2023-04-22	2.80	Ian Mondrow	Review LEI evidence filed by OEB Staff and note to IGUA cost of capital experts with observations and request for input;
RAE	2023-04-23	1.20	Ian Mondrow	Review AGA/CGA study report referred to in LEI evidence;
RAE	2023-04-23	0.60	Ian Mondrow	Reading OPI and FRPO evidence;
RAE-1.0 IRP-1.4	2023-04-24	2.40	Ian Mondrow	Continue review of intervenor evidence filed and related correspondence with IGUA experts; drafting proposed IRs on intervenor/Staff evidence;
COM-OP	2023-04-24	0.50	Ian Mondrow	Intervenor correspondence regarding various issues;
RAE	2023-04-25	0.80	Ian Mondrow	Review ED and GEC Technical Conference (P2NZ Update) filings and related materials and update note to A. Hopkins regarding energy transition discussions anticipated;
IEP	2023-04-25	1.20	Ian Mondrow	Review and revise experts work plan and update note to experts and client group regarding upcoming steps and schedule;

May 31, 2023
INVOICE: 20064841

IRP	2023-04-25	0.80	Ian Mondrow	Review and revise IRs for LEI based on S. Cleary input; correspondence with D. Madsen regarding potential IRs for Intergroup;
IEP	2023-04-26	0.30	Ian Mondrow	Correspondence with experts regarding work plan;
COM-CL	2023-04-26	0.20	Ian Mondrow	Update note to IGUA;
RAE	2023-04-26	2.20	Ian Mondrow	Review Intergroup depreciation evidence;
TCP	2023-04-26	0.30	Ian Mondrow	Review correspondence regarding scope of Technical Conference (and ED materials filed);
IRP	2023-04-26	0.60	Ian Mondrow	Review and supplement IRs for LEI based on input from IGUA experts;
RAE	2023-04-26	0.60	Ian Mondrow	Continue review of Intergroup depreciation evidence and question to D. Madsen; correspondence with K. Elson (ED) regarding implications of further Guidehouse report discovery;
IRP	2023-04-27	0.30	Cathy Galler	Formatting and filing IRs to LEI;
RAE	2023-04-27	3.10	Ian Mondrow	Complete review of Intergroup evidence;
TCA	2023-04-27	1.30	Ian Mondrow	Attend Technical conference continuation;
IRP	2023-04-27	0.30	Ian Mondrow	Final review and revision to IRs for LEI;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Review transcripts in lieu of attendance;
IE-IRR	2023-04-28	0.10	Ian Mondrow	Review IRs received on IGUA evidence and distribute to experts for consideration and response;
IRP	2023-04-28	1.40	Ian Mondrow	Review comments from D. Madsen and draft IRs for Intergroup;
IE-IRR	2023-04-28	1.00	Ian Mondrow	Continue review of IRs received and distribute to experts for response;
TCA	2023-04-28	0.40	Ian Mondrow	Technical Conference: Continue review of transcript in lieu of attendance;
COM-OP	2023-04-28	0.20	Ian Mondrow	Correspondence with K. Elson regarding issues of common interest;
IE-IRR	2023-04-29	1.70	Ian Mondrow	Review IRs received and dispatch to experts for drafting responses as appropriate;

Total Fees for Professional Services

May 31, 2023
INVOICE: 20064841

SUMMARY OF FEES

TK Name	Hours
Galler, Cathy	1.30
Hummel, Christopher	4.60
Mondrow, Ian	73.70
Total	79.60

Robert Knecht

CASE EB-2022-0200: Rates: Distribution: Enbridge Gas Inc.	COST CLAIM EB-2022-0200 : 1 : Cathy Galler	INTERVENOR NAME Galler, Cathy ; +1 (416) 369-4570 cathy.galler@gowlingwlg.com	PARTICIPANT CLAIM STATUS Submitted
FILING PARTICIPANT	NEW PARTICIPANT Yes	NON-FILING PARTICIPANT F. NAME Robert	NON-FILING PARTICIPANT L. NAME Knecht
SERVICE PROVIDER TYPE* Analyst	YEAR CALLED TO BAR*	COMPLETED YEARS PRACTICING/YEARS OF RELEVANT EXPERIENCE* 20	HOURLY RATE 330
HST RATE CHARGED* 0.00	CV STATUS (FOR CONSULTANT/ANALYST) CV Attached	LAST CV DATE July 12, 2023	OVERRIDE HOURLY RATE No
HST NUMBER 89659 3323 RT0001	HEARINGS Yes	CONSULTATIONS No	DISBURSEMENTS No

HEARINGS

Hearings Hours	Hearings Subtotal (\$)	Hearings Total Tax (\$)	Hearings Total (\$)			
120.00	39,600.00	0.00	39,600.00			
<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
REVIEW APPLICATION AND EVIDENCE						
Review Application and Evidence	16.00	330	5,280.00	0.00		5,280.00
DISCOVERY						
Preparation of Interrogatories	33.00	330	10,890.00	0.00		10,890.00
Review Interrogatory Responses	16.50	330	5,445.00	0.00		5,445.00
Technical Conference Preparation	5.50	330	1,815.00	0.00		1,815.00
Technical Conference Attendance	4.00	330	1,320.00	0.00		1,320.00
Technical Conference Follow Up	2.50	330	825.00	0.00		825.00
ISSUES LIST						
Preparation		330		0.00		
Attendance at Issues Conference		330		0.00		
INTERVENOR EVIDENCE						
Preparation	42.50	330	14,025.00	0.00		14,025.00
Interrogatory Responses		330		0.00		
Preparation of Witness(es) for Attendance at Hearing		330		0.00		
SETTELEMENT CONFERENCE / ADR						
Preparation		330		0.00		
Attendance		330		0.00		

<u>Name</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
Preparation of Settlement Proposal		330		0.00		
Attendance at Presentation to Panel		330		0.00		
ORAL HEARING						
Preparation		330		0.00		
Attendance at Oral Hearing		330		0.00		
SUBMISSIONS						
Written Submissions		330		0.00		
Oral Submissions		330		0.00		
Attendance at Oral Submissions		330		0.00		
OTHER ATTENDANCE						
Other Attendance		330		0.00		
COMMUNICATION						
With Client		330		0.00		
With Other Parties		330		0.00		
MOTIONS						
Preparation of Motion(s) Materials		330		0.00		
Prepare Submissions on the Motion(s)		330		0.00		
Attendance at Hearing on Motion(s)		330		0.00		
CONFIDENTIALITY						
Preparation of Application for Confidentiality		330		0.00		
Prepare Submissions on Confidentiality		330		0.00		
Attendance at Hearing on Confidentiality		330		0.00		
DECISION						
Review		330		0.00		
RATE ORDER						
Review		330		0.00		
Prepare Submission on Rate Order		330		0.00		
TOTAL SERVICE PROVIDER FEES						
Total Service Provider Fees:	120.00		39,600.00	0.00		39,600.00

Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Knecht_TimeDockets_20230712.pdf	Time Docket	
IGUA_EB-2022-0200_Interim CostClaim_Knecht CV_20230712.pdf	CV	

Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
IGUA_EB-2022-0200_Interim CostClaim_Knecht_TimeDockets_20230712.pdf	Time Docket	Hearings	
IGUA_EB-2022-0200_Interim CostClaim_Knecht CV_20230712.pdf	CV	Hearings	

Robert D. Knecht
5 Plymouth Road
Lexington, MA 02421

CONFIDENTIAL

Invoice to: Industrial Gas Users Association
Invoice Date: 11-Jul-23
Invoice Period: January - June 2023
Client: Industrial Gas Users Association
Ontario Energy Board Docket No. EB-2022-0200: Enbridge Rebasing
Retainer: Retainer agreement between Robert D. Knecht and IGUA dated 10 January 2023, amended 28 March 2023

Date	Project	Hours	Category	Description of Work
22-Jan-23	Enbridge Rebasing	2.0	1	Review cost allocation spreadsheets, identify key cost accounts for IGUA
26-Jan-23	Enbridge Rebasing	4.0	1,2	Review filing, draft IRs, correspond with counsel re transmission assets
27-Jan-23	Enbridge Rebasing	4.0	1,2	Review overall filing, draft IRs.
28-Jan-23	Enbridge Rebasing	2.0	1,2	Review cost allocation filing, draft IRs.
29-Jan-23	Enbridge Rebasing	4.0	1,2	Review cost allocation filing, draft IRs.
30-Jan-23	Enbridge Rebasing	3.0	1,2	Review cost allocation filing/draft IRs.
1-Feb-23	Enbridge Rebasing	4.0	1,2	Review rate design filing, draft IRs.
2-Feb-23	Enbridge Rebasing	3.0	1,2	Review rate design filing, draft IRs.
3-Feb-23	Enbridge Rebasing	4.0	1,2	Review rate design filing, draft IRs.
4-Feb-23	Enbridge Rebasing	6.0	2	Draft cost allocation IRs.
5-Feb-23	Enbridge Rebasing	6.0	2	Draft rate design IRs
6-Feb-23	Enbridge Rebasing	4.0	2	Finalize rate design IRs; respond to Synapse inquiry
7-Feb-23	Enbridge Rebasing	1.0	2	Respond to issues raised by IGUA.
9-Feb-23	Enbridge Rebasing	2.0	2	Edit and finalize IRs to EGI, correspond with IGUA counsel
9-Mar-23	Enbridge Rebasing	2.0	3	Begin review of IR responses.
10-Mar-23	Enbridge Rebasing	3.0	3,7	Review/analyze IR responses, draft issues memo
11-Mar-23	Enbridge Rebasing	6.0	3,7	Review/analyze IR responses, draft issues memo
12-Mar-23	Enbridge Rebasing	4.0	3,7	Review/analyze IR responses; draft issues memo
13-Mar-23	Enbridge Rebasing	5.0	3,7	Prep for and attend conference call; continuing review/analysis of IR responses and issues memo
15-Mar-23	Enbridge Rebasing	3.0	3,7	Review/analyze IR responses, ongoing work on issues memo.
18-Mar-23	Enbridge Rebasing	4.0	3,7	Review/analyze IR responses, draft issues memo, Panhandle/St. Clair analysis
19-Mar-23	Enbridge Rebasing	4.0	3,7	Review/analyze IR responses, ongoing work on issues memo, submit draft review to IGUA.
20-Mar-23	Enbridge Rebasing	2.0	4	Prep for and attend call with IGUA counsel.
25-Mar-23	Enbridge Rebasing	1.0	4	Correspond with counsel, edit and submit revised technical questions.
26-Mar-23	Enbridge Rebasing	3.0	4,7	Review/edit issues memo; prepare alternative PH/SC allocation per IGUA request, consult with IGUA counsel.
27-Mar-23	Enbridge Rebasing	1.0	4,7	Consult with IGUA counsel re substance and schedule.
28-Mar-23	Enbridge Rebasing	1.0	4,7	Review/edit technical questions, forward to counsel.
31-Mar-23	Enbridge Rebasing	4.0	5	Prep for and attend technical session; correspond with IGUA/Counsel
3-Apr-23	Enbridge Rebasing	3.0	6,7	Ongoing work on issues memo.
4-Apr-23	Enbridge Rebasing	2.0	6,7	Prep for and attend expert call
5-Apr-23	Enbridge Rebasing	1.0	7	Review IGUA analysis; ongoing work on issues memo.
6-Apr-23	Enbridge Rebasing	5.0	7	Review IGUA rate calculations, consult with IGUA, evaluate T2 rate impacts and contrast to EGI sample bill analysis, submit review to IGUA
12-Apr-23	Enbridge Rebasing	4.0	7	Ongoing analysis and drafting of issues memo; correspondence with IGUA and counsel.
13-Apr-23	Enbridge Rebasing	2.0	7	Draft issues review.
15-Apr-23	Enbridge Rebasing	4.0	7	Draft issues review.
16-Apr-23	Enbridge Rebasing	3.0	7	Draft Issues review.
20-Apr-23	Enbridge Rebasing	2.0	7	Respond to IGUA demand for information.
21-Apr-23	Enbridge Rebasing	1.0	7	Respond to IGUA counsel question.
25-Apr-23	Enbridge Rebasing	2.0	7	Issues memo; begin review of PDCI issue at IGUA request.
26-Apr-23	Enbridge Rebasing	3.0	7	Research and respond in detail to questions from IGUA re rate impacts.
30-Apr-23	Enbridge Rebasing	4.0	7	Review details of upstream transportation and load balancing cost allocation and harmonization, respond in detail to question from IGUA.
2-May-23	Enbridge Rebasing	4.0	7	Review and evaluate updated mapping sheet forwarded by IGUA, consult with IGUA counsel.
3-May-23	Enbridge Rebasing	4.0	7	Review and evaluate updated mapping sheet forwarded by IGUA, consult with IGUA counsel.
4-May-23	Enbridge Rebasing	5.0	7	Draft issues review, prepare exhibits.
5-May-23	Enbridge Rebasing	3.0	7	Edit and finalize first draft of report, submit to IGUA.

Robert D. Knecht

5 Plymouth Road
Lexington, MA 02421

CONFIDENTIAL

Invoice to: Industrial Gas Users Association

Invoice Date: 11-Jul-23

Invoice Period: January - June 2023

Client: Industrial Gas Users Association

Ontario Energy Board Docket No. EB-2022-0200: Enbridge Rebasing

Retainer: Retainer agreement between Robert D. Knecht and IGUA dated 10 January 2023, amended 28 March 2023

Date	Project	Hours	Category	Description of Work
20-May-23	Enbridge-Rebasing	3.0	8	Review updated filing; begin comparative analysis of results; correspond with IGUA.
26-May-23	Enbridge-Rebasing	3.0	8	Prep for and attend call with IGUA; follow up notes on Panhandle/St. Clair.
27-May-23	Enbridge-Rebasing	1.0	8	Prepare detailed writeup of alternative Panhandle/St. Clair allocation; submit to IGUA counsel.
28-May-23	Enbridge-Rebasing	1.0	8	Consult with counsel.
Total Hours		152.0		
Adjust Hours to Contract:		120.0		
Hourly Rate (CAD)				
Professional Fees (CAD):				
Travel Disbursements:		\$0.00		
Total (CAD)				

Estimated Hours by Category	Hours
(1) Review Application and Evidence	16.0
(2) Preparation of Interrogatories	33.0
(3) Review Interrogatory Responses	16.5
(4) Technical Conference Prep	5.5
(5) Technical Conference Attendance	4.0
(6) Technical Conference Follow Up	2.5
(7) Preparation of Issues Memo*	66.5 42.5
(8) Settlement Preparation	8.0
	152.0 120

* Preparation of issues memo is probably comparable to preparation of evidence

Overview

Mr. Knecht has more than 40 years of economic consulting experience, focusing on the energy, utility, metals and mining industries. For the past 30 years, Mr. Knecht's practice has primarily involved providing analysis, consulting support and expert testimony in regulatory matters, primarily involving electric and natural gas utilities. Mr. Knecht's work includes many aspects of utility regulation, including industry restructuring, cost unbundling, cost allocation, rate design, rate of return, customer contributions, energy efficiency programs, smart metering programs, treatment of stranded costs and utility revenue requirement issues. He has consulted to state advocacy agencies, industrial customer groups, law firms, regulatory agencies, government agencies and utilities, in both the United States and Canada. He has provided expert testimony in more than one hundred separate utility proceedings.

In addition to his work with regulated utilities, Mr. Knecht has consulted on international industry restructuring studies, prepared economic policy analyses, participated in a variety of litigation matters involving economic damages, and developed energy industry forecasting models.

Mr. Knecht served as a Principal of IEc for 33 years, and as its Treasurer for 15 years. He is currently an independent consultant who remains affiliated with IEc.

Education

Master of Science, Management (Applied Economics and Finance), Sloan School of Management, M.I.T.

Bachelor of Science, Economics, Massachusetts Institute of Technology

Select Project Experience

For more than 25 years, Mr. Knecht has provided consulting services, analysis and expert testimony before the Pennsylvania Public Utility Commission on all manner of regulatory proceedings to the **PENNSYLVANIA OFFICE OF SMALL BUSINESS ADVOCATE**. In addition to expert testimony, Mr. Knecht has assisted OSBA with the development of public policy positions, litigation strategy, and longer term strategy.

For the **ATTORNEY GENERAL OF THE STATE OF RHODE ISLAND**, Mr. Knecht provided consulting and expert witness services in an acquisition proceeding involving PPL Corporation's proposed acquisition of Narragansett Electric from National Grid. Mr. Knecht's testimony addressed financial, economic, environmental, tax, operating cost and rate implications.

For the **NEW BRUNSWICK PUBLIC INTERVENER**, Mr. Knecht provides consulting and expert witness services in a variety of regulatory proceeding before the New Brunswick Energy and Utilities Board involving New Brunswick Power, Enbridge Gas New Brunswick, and petroleum products. Mr. Knecht has addressed issues of load forecasting, costs forecasting, cost of capital, allocation of corporate overhead costs, utility cost allocation, revenue allocation, market-based rate design, cost-based rate design, and rate decoupling.

For **L'ASSOCIATION QUÉBÉCOISE DES CONSOMMATEURS INDUSTRIELS D'ÉLECTRICITÉ (AQCIÉ) AND LE CONSEIL DE L'INDUSTRIE FORESTIÈRE DU QUÉBEC (CIFQ)**, Mr. Knecht provided analysis, consulting advice and expert testimony before the Régie de l'énergie in regulatory matters involving Hydro Québec Distribution and TransÉnergie. This work includes revenue requirement, power purchasing, cost allocation, treatment of cross-subsidies, and rate design.

For the **INDEPENDENT POWER PRODUCERS SOCIETY OF ALBERTA**, Mr. Knecht provided consulting advice, analysis and expert testimony before the Alberta Energy and Utilities Board in a series of proceedings involving the restructuring of the electric utility industry, the unbundling of rates, and the development of transmission rates.