

## EB-2022-0295 : 2 : Robert Wirtshafter

COST CLAIM NUMBER 2245	SUBMISSION DEADLINE DATE July 22, 2024	CLAIM STATUS Approved by Finance
EB# EB-2022-0295: Initiatives: Policy Dev, CDM: Ontario Energy Board	OTHER EB#S	PHASE #* 2
INTERVENOR Wirtshafter, Robert; +1 (215) 884-6495 wirtino@comcast.net	INTERVENOR COMPANY* Wirtshafter Associates, Inc., Chatham: Corporation	INTERVENOR TYPE Tax Exempt
HST RATE ONTARIO 0.00	EXCHANGE RATE	COUNTRY US
HST NUMBER	LATE SUBMISSION ALLOWED No	EXTENSION DEADLINE DATE

### PARTICIPANTS

New	Non-Filing Participant First, Last Name	Filing Participant	Total (\$)	Total Hours	Participant Claim Status
No	,	Wirtshafter, Robert; +1 (215) 884-6495 wirtino@comcast.net	17,160.00	52.00	Submitted

### ATTACHMENTS

Attachment	Document Type	Import Message
Time Docket Wirtshafter 7-14-24.xlsx	Time Docket	
Invoice EB 2022-0295 Wirtshafter Associates July 14 24.docx	Invoice	
Invoice EB 2022-0295 Wirtshafter Associates July 14 24.pdf	Invoice	
Time Docket Wirtshafter 7-14-24.pdf	Time Docket	
WIRTS EB-2022-0295 Cost Claim 071720241138.pdf		

TOTAL LEGAL/CONSULTANT/OTHER FEES  
17,160.00

TOTAL DISBURSEMENTS  
0.00

TOTAL HST  
0.00

TOTAL CLAIM  
17,160.00

TOTAL AMOUNT AWARDED

TOTAL HOURS CLAIMED  
52.00

TOTAL HOURS DISALLOWED

REASON FOR  
DISALLOWANCE

REASON FOR  
DISALLOWANCE - 2

REASON FOR  
DISALLOWANCE - 3

MAKE CHEQUE PAYABLE TO  
Wirtshafter Associates, Inc.

SEND PAYMENT TO ADDRESS  
85 Monomessat Way  
Chatham, MA  
02633

ATTENTION

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  
Robert M Wirtshafter

DATE SUBMITTED  
July 17, 2024

**CASE**EB-2022-0295: Initiatives: Policy  
Dev, CDM: Ontario Energy Board**COST CLAIM**EB-2022-0295 : 2 : Robert  
Wirtshafter**INTERVENOR NAME**Wirtshafter, Robert; +1 (215)  
884-6495  
wirtino@comcast.net**PARTICIPANT****CLAIM STATUS**

Submitted

**FILING PARTICIPANT**Wirtshafter, Robert; +1 (215)  
884-6495 wirtino@comcast.net**NEW****PARTICIPANT**

No

**NON-FILING****PARTICIPANT F. NAME****NON-FILING****PARTICIPANT L. NAME****SERVICE PROVIDER TYPE\***

Consultant

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

48

**HOURLY RATE**

330

**HST RATE CHARGED\***

0.00

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

CV Attached

**LAST CV DATE**

July 17, 2024

**OVERRIDE****HOURLY RATE**

No

**HST NUMBER****HEARINGS**

No

**CONSULTATIONS**

Yes

**DISBURSEMENTS**

No

# CONSULTATION

Consultation		Consultations		Consultations		Consultations	
Hours		Subtotal (\$)		Total Tax (\$)		Total (\$)	
52.00		17,160.00		0.00		17,160.00	
Description		Maximum Hours	Hours	Hourly Rate	Sub Total	HST Rate	Total
1	SAG Meeting #13 - November 9, 2023	3.75	3.75	330	1,237.50	0.00	1,237.50
2	Meeting with OEB Staff and Guidehouse on Achievable Potential Study (APS) scenarios - Nov 13 2023	0.75		330		0.00	
3	APS Sub Committee Meeting OEB APS - Residential Measure Characterization Sub-Committee - Nov 16 2023	3.00	1.00	330	330.00	0.00	330.00
4	APS Sub Committee Meeting: OEB APS - Industrial Measure Characterization Sub-Committee - Nov 16 2023	4.50		330		0.00	
5	APS Sub Committee Meeting OEB APS - Residential Measure Characterization Sub-Committee - Nov 17 2023	4.50		330		0.00	
6	APS Sub Committee Meeting: Commercial Measure Characterization Tutorial - November 17, 2023	0.75		330		0.00	
7	Review and Comment: OEB APS - Incentive Application Memo - November 17, 2023	0.50		330		0.00	
8	SAG Meeting #14 - November 28, 2023	2.25	2.00	330	660.00	0.00	660.00
9	Review and Comment: OEB APS Commercial Measure Characterization: Applicability Factors - Dec 1 2023	4.50		330		0.00	
10	APS Sub Committee Meeting: Scenario Finalization - December 4, 2023	1.50		330		0.00	
11	Review and Comment: SAG call with Guidehouse on APS Technical/Economic potentials - Dec 5 2023	1.50		330		0.00	
12	SAG Meeting #15 - December 7, 2023	4.50	3.50	330	1,155.00	0.00	1,155.00
13	Touch Point Call: APS call with OEB Staff - December 14, 2023	0.75		330		0.00	
14	APS Sub Committee Meeting: Technical/Economic Potential Review Meeting #1 - December 19, 2023	4.00		330		0.00	
15	SAG Meeting #16 - December 21, 2023	5.25	3.50	330	1,155.00	0.00	1,155.00
16	Review/Comment Responding to Guidehouse heat pump characterizations & follow-up meeting -Dec 22 2023	0.75		330		0.00	
17	APS Sub Committee Meeting: Technical/Economic Potential Review Meeting #2 - January 12, 2024	6.00		330		0.00	
18	Review and Comment: OEB APS - Technical/Economic Potential Discussion Follow-Up - January 17, 2024	2.00		330		0.00	
19	SAG Meeting #17 - January 18, 2024	4.50	3.00	330	990.00	0.00	990.00

	<u>Description</u>	<u>Maximum Hours</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
20	Review/Comment: Residential & Commercial Technical/Economic Comment Response Round 1 - Jan 19 2024	4.00		330		0.00		
21	Review/Comment: Residential & Commercial Technical/Economic Comment Response Round 2 - Jan 23 2024	4.00		330		0.00		
22	Review and Comment: OEB APS - Draft Industrial Achievable Potential Results - January 24, 2024	6.00		330		0.00		
23	APS Sub Committee Meeting: Industrial Achievable Roll-Out - January 26, 2024	1.00		330		0.00		
24	Review/Comment: Residential & Commercial Technical/Economic Comment Response Round 3 - Jan 28 2023	4.00		330		0.00		
25	SAG Meeting #18 - February 1, 2024	1.50	1.50	330	495.00	0.00		495.00
26	APS Sub Committee Meeting: Technical/Economic Potential Review Meeting #3 - February 7, 2024	4.00		330		0.00		
27	APS Sub Committee Meeting: Sensitivity Analysis Planning - February 7, 2024	1.50		330		0.00		
28	APS Sub Committee Meeting: Commercial Coefficient of Performance - February 9, 2024	1.50		330		0.00		
29	Touch Point Call with OEB Staff and Enbridge Gas, Inc. on sensitivity scenarios - February 9, 2024	0.75		330		0.00		
30	Review/Comment: Residential & Commercial Technical/Economic Comment Response Round 4 - Feb 13 2024	3.00		330		0.00		
31	Review and Comment: APS - Technical Suitability of Commercial Heat Pumps - Feb 28 2024	3.00		330		0.00		
32	APS Sub-Committee Meeting: Residential Achievable Roll-Out - March 1, 2024	0.50		330		0.00		
33	Review and Comment: OEB APS - Sensitivity Analysis Proposal - March 4, 2024	0.50		330		0.00		
34	Meeting: On Sensitivity Scenarios - March 12, 2024	1.50		330		0.00		
35	SAG Meeting #19 - March 14, 2024	1.50	1.25	330	412.50	0.00		412.50
36	Review and Comment: APS Data Walkthrough - March 14, 2024	1.00		330		0.00		
37	Review and Comment: OEB APS - First Draft Residential Achievable Results - March 14, 2024	6.00		330		0.00		
38	Review: OEB APS - Payback Acceptance Curves - March 18, 2024	0.50		330		0.00		
39	Meeting: Enbridge Gas, Inc Intervenor Session - March 26, 2024	3.00	2.75	330	907.50	0.00		907.50
40	SAG Meeting #20 - March 28, 2024	4.50	3.50	330	1,155.00	0.00		1,155.00
41	Review and Comment: OEB APS - Residential Achievable Comment Disposition - March 28, 2024	3.00		330		0.00		

	<u>Description</u>	<u>Maximum Hours</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
42	Review and Comment: OEB APS - Draft Commercial Achievable Potential Results - March 28, 2024	6.00		330		0.00		
43	Review and Comment: OEB APS - Commercial Achievable Potential Intro - April 5, 2024	1.00		330		0.00		
44	Review and Comment: OEB APS - Commercial Hybrid Air Sourced Heat Pumps - April 11, 2024	1.50		330		0.00		
45	Review/Comment: OEB APS - Second Draft Residential Achievable Results for Review - April 16, 2024	3.00		330		0.00		
46	SAG Meeting #21 - April 18, 2024	3.75	3.00	330	990.00	0.00		990.00
47	Review and Comment: OEB APS - Commercial Achievable Potential - April 18, 2024	4.00		330		0.00		
48	EAC Meeting #7 - November 6, 2023	2.25	0.75	330	247.50	0.00		247.50
49	EAC Meeting #8 - November 14, 2023	3.50	2.50	330	825.00	0.00		825.00
50	Review and Comment: Custom Sample Design Memos - November 22, 2023	1.50		330		0.00		
51	Review and Comment: Draft Technical Resource Manual (TRM) measures 1st Round - November 30, 2023	1.00	0.50	330	165.00	0.00		165.00
52	Review and Comment: Draft TRM measures, 1st Round continued - December 6, 2023	1.00		330		0.00		
53	EAC Meeting #9 - December 12, 2023	2.50	2.25	330	742.50	0.00		742.50
54	Review and Comment: 2022 Annual Verification Draft Report - Portion 1 - December 18, 2023	2.00	0.50	330	165.00	0.00		165.00
55	Review and Comment: Residential Adaptive Thermostat Process Evaluation proposal - December 21, 2023	2.00	0.75	330	247.50	0.00		247.50
56	EAC Meeting #10 - January 16, 2024	2.50	2.25	330	742.50	0.00		742.50
57	Review and Comment: eTools Adjustment Factor - Draft Memo - January 31, 2024	1.50		330		0.00		
58	Review and Comment: TRM Review 2nd Round - February 1, 2024	1.00	0.50	330	165.00	0.00		165.00
59	Review/Comment: 2022 Annual Verification Draft Report - Complete Draft (Post eTools) - Feb 14 2024	1.00		330		0.00		
60	Review and Comment: Spillover Scope of Work Draft - February 14, 2024	4.00	0.50	330	165.00	0.00		165.00
61	Review and Comment: EAC Delphi panel proposal - February 15, 2024	1.50	1.50	330	495.00	0.00		495.00
62	EAC Meeting #11 - February 27, 2024	2.25	2.00	330	660.00	0.00		660.00
63	Review and Comment: Process evaluation reports - March 6, 2024	12.00	1.25	330	412.50	0.00		412.50
64	Review and Comment: Custom Sample Design Memos - March 8, 2024	2.50		330		0.00		
65	EAC Meeting #12 - March 19, 2024	1.00	1.00	330	330.00	0.00		330.00
66	Review/Comment: Spillover examples, data request, meeting slides & sample design plans - Mar 20 2024	1.50		330		0.00		

	<u>Description</u>	<u>Maximum Hours</u>	<u>Hours</u>	<u>Hourly Rate</u>	<u>Sub Total</u>	<u>HST Rate</u>	<u>HST</u>	<u>Total</u>
67	Review/Comment: Custom project savings verification (CPSV) Batch 1 Site Report - Mar 12 2024	0.50	0.50	330	165.00	0.00		165.00
68	EAC Meeting #13 - April 2, 2024	2.25	2.00	330	660.00	0.00		660.00
69	Review and Comment: TRM Review 3rd Round - April 4, 2024	1.00	0.50	330	165.00	0.00		165.00
70	Review and Comment: CPSV Batch 2 site reports - April 15, 2024	1.50	1.50	330	495.00	0.00		495.00
71	EAC Meeting #14 - April 16, 2024	1.00	1.00	330	330.00	0.00		330.00
72	EAC Meeting #15 - April 30, 2024	2.25	1.50	330	495.00	0.00		495.00
<b>Total Legal/Consultant Fees</b>			<b>52.00</b>		<b>17,160.00</b>		<b>0.00</b>	<b>17,160.00</b>

## Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Import Message</u>
Time Docket Wirtshafter 7-14-24.pdf	Time Docket	
Invoice EB 2022-0295 Wirtshafter Associates July 14 24.pdf	Invoice	
Robert M Wirtshafter 4-page resume.pdf	CV	

## Hearings, Consultations, Disbursements Attachments

<u>Attachment</u>	<u>Document Type</u>	<u>Claim Type</u>	<u>Import Message</u>
Time Docket Wirtshafter 7-14-24.pdf	Time Docket	Consultations	
Invoice EB 2022-0295 Wirtshafter Associates July 14 24.pdf	Invoice	Consultations	
Robert M Wirtshafter 4-page resume.pdf	CV	Consultations	

Time Docket

No	Date	Activity
1	9-Nov	Sag Call #13
3	16-Nov	Res call
8	28-Nov	SAG call #14
12	7-Dec	SAG call #15
15	21-Dec	sag CALLL #16
19	1/18/2024	SAG call #17
25	1-Feb	SAG mtg 318
35	14-Mar	SAG mtg #19
39	26-Mar	Intervenor mtg
40	28-Mar	SAG mtg #20
46	18-Apr	sag MTG 321
48	6-Nov	EAC Call #7
49	14-Nov	eac CALL #8
51	14-Dec	TRM comments
53	12-Dec	EAC call
54	28-Dec	comment AV reports
55	28-Dec	Tstat Proc Eval comments
56	1/16/2024	EAC mtg #10
58	9-Feb	TRM comments #2
60	15-Feb	Spillover comments
61	1-Mar	Delphi Panel Response
62	27-Feb	EAC mtg #11
63	11-Mar	Process eval review
65	19-Mar	EAC mtg #12
67	12-Mar	CPSV review #1
68	2-Apr	EAC mtg #13
69	9-Apr	TRM #3
70	16-Apr	cpSv #2
71	16-Apr	EVAL MTG
72	30-Apr	eac MTG

Total Hrs  
Rate Canadian \$  
Total Invoice



Actual Hours

3.75
1.00
2.00
3.50
3.50
3.00
1.50
1.25
2.75
3.50
3.00
0.75
2.5
0.50
2.25
0.50
0.75
2.25
0.50
0.5
1.5
2
1.25
1
0.5
2
0.5
1.5
1
1.5
52.00
330
\$17,160.00

Wirtshafter Associates, Inc.  
85 Monomessat Way  
Chatham, MA 02633 USA

INVOICE:

July 14, 2024

**Josh Wasyluk**

Senior Advisor | [416.440.7723](tel:416.440.7723) | [OEB.ca](mailto:OEB.ca)

For Services of Robert M Wirtshafter, Ph.D.

Related to OEB Evaluation Advisory Committee

OEB EB 2022-0295 Robert M Wirtshafter Nov 1, 2023 to April 30,  
2024

No	Date	Activity	Actual Hours
1	9-Nov	Sag Call #13	3.75
3	16-Nov	Res call	1.00
8	28-Nov	SAG call #14	2.00
12	7-Dec	SAG call #15	3.50
15	21-Dec	sag CALLL #16	3.50
19	1/18/2024	SAG call #17	3.00
25	1-Feb	SAG mtg 318	1.50
35	14-Mar	SAG mtg #19	1.25
39	26-Mar	Intervenor mtg	2.75
40	28-Mar	SAG mtg #20	3.50
46	18-Apr	sag MTG 321	3.00
48	6-Nov	EAC Call #7	0.75
49	14-Nov	eac CALL #8	2.5
51	14-Dec	TRM comments	0.50
53	12-Dec	EAC call	2.25
54	28-Dec	comment AV reports	0.50
55	28-Dec	Tstat Proc Eval comments	0.75
56	1/16/2024	EAC mtg #10	2.25
58	9-Feb	TRM comments #2	0.50
60	15-Feb	Spillover comments	0.5
61	1-Mar	Delphi Panel Response	2
62	27-Feb	EAC mtg #11	1.5
63	11-Mar	Process eval review	1.25
65	19-Mar	EAC mtg #12	1
67	12-Mar	CPSV review #1	0.5
68	2-Apr	EAC mtg #13	2
69	9-Apr	TRM #3	0.5
70	16-Apr	cpSv #2	1.5
71	16-Apr	EVAL MTG	1
72	30-Apr	eac MTG	1.5

Total Hrs 52.00

Rate Canadian \$330 Total \$17,160.00

Payment in US Dollar

# **Robert M Wirtshafter, Ph.D.**

## **PRESENT POSITION**

President, Wirtshafter Associates, Inc.  
85 Monomessat Way  
Chatham, MA 02633  
215-884-6495  
wirtino@comcast.net

## **EDUCATION**

Ph.D. Geography--Clark University 1979  
B.A. Geography--Clark University 1975

## **AWARDS**

The International Energy Program Evaluation Conference (IEPEC) selected Dr. Wirtshafter as the recipient of the 2022 Lifetime Achievement Award

## **AREAS OF EXPERTISE**

- o Demand Side Management Program Planning and Evaluation
- o Energy Policy for Promoting Conservation and Alternative Energy Sources
- o Market Research, Survey Design and Statistical Analysis
- o Application of Geographic Information Systems for Resource Management
- o Land Development and Impact Fees
- o Energy Policy in China

## **PROFESSIONAL EXPERIENCE**

Dr. Robert Wirtshafter, President of Wirtshafter Associates, Inc., combines his extensive experience in program design and evaluation with insightful policy development. He was the first to tackle difficult issues such as the utility/solar interface, incentives for energy efficiency, hook-up fees, assessment of standard performance contracting, and design of third-party initiatives. Dr. Wirtshafter began his career as a planner in the nation's first utility-sponsored energy-efficiency and renewables program at the Tennessee Valley Authority and the cost-effectiveness model he developed for TVA has evolved into the Total Resource Cost (TRC) test commonly used to assess cost effectiveness of DSM programs. As a professor at the University of Pennsylvania he developed the first courses in energy efficiency program planning and evaluation. Dr. Wirtshafter is nationally recognized for crafting some of the field's more insightful and innovative evaluations. He produced the definitive work on hookup fees and pioneered the use of GIS in planning and evaluating energy efficiency programs. Dr. Wirtshafter has broad experience doing large scale efficiency assessments in the US, Canada, and China. Dr. Wirtshafter has extensive experience in doing market assessment, impact, and process evaluations in the residential, industrial, and commercial sectors. Dr. Wirtshafter has directed numerous market characterizations, energy audits, and financial assessments. Recent studies include a market characterization of New York multifamily new and existing markets; and food service industry in Hawaii. Dr. Wirtshafter is increasingly being asked to assist states as a strategic evaluation adviser. He is the residential evaluation advisor to the Massachusetts EEAC, the council in Massachusetts directing the statewide development of energy efficiency; He also provides similar services to the Connecticut Energy Efficiency Board, the New Jersey BPU, the New Hampshire Energy Board and the Ontario Energy Board. He provided similar services in the past to NYSERDA, the Hawaii PUC, and Delaware Natural Resources and Environmental Control.

1994 to Present President, Wirtshafter Associates, Inc.

October 1980 – 1996 Associate Director Center for Energy and the Environment, Research Associate Professor, City and Regional Planning Department, University of Pennsylvania, Research Associate

1979 – 1980 Policy Planner, Solar Applications Branch, Tennessee Valley Authority, Chattanooga, Tennessee.

1975-1979 Project Manager, Russell Sage Foundation, New York, New York, and Clark University, Worcester, Massachusetts

## **TEACHING EXPERIENCE**

1981 – 1996 --University of Pennsylvania

- o Seminar on Electric Utility Deregulation
- o Cogeneration Assessment and Development
- o Survey Design and Statistical Methods
- o Field Research in China
- o Utility Regulation
- o Energy Conservation Principles
- o Advanced Seminar in Energy Conservation
- o Energy Efficiency in Large Buildings
- o Energy Conservation Planning
- o Computer Modeling in Energy Analysis

### **Selected Projects in Utility Planning and Demand-Side Management**

#### **Ontario Energy Board (2012-present)**

Dr. Wirtshafter is the evaluation technical adviser to the Evaluation Advisory Committee and before that the Technical Evaluation Committee overseeing the gas programs of Enbridge and Union Gas. He has provided guidance on all evaluation issues including helping to lead studies on net-to-gross assessment, boiler baseline assumptions, and development of Wiki based Technical Reference Manual.

#### **NYSERDA (2006-2015)**

Dr. Wirtshafter was the process, marketing and net-to-gross evaluation coordinator for the Master Evaluation Assistance team overseeing all of NYSERDA's evaluation work. This work involved oversight of all NYSERDA process and market characterization studies and net-to-gross studies. He was also a team member on the process and market effects evaluation team. He led the last three major process and market characterizations of the Multifamily Performance Program, and the Low-Income Weatherization Program. Dr. Wirtshafter developed GIS applications for all of these studies.

#### **Advisor to the Massachusetts Energy Efficiency Advisory Council (2009-present)**

Dr. Wirtshafter directs all residential retrofit evaluations performed by the program administrators in Massachusetts. In the last three years alone, he had oversight of a portfolio of programs with expenditures topping \$800 million. He directed and managed more than 50 evaluation studies and an evaluation budget of \$20 million. Many of these studies have been presented at the IEPEC, BECC, ACEEE conferences. He has directed impact, process, and market assessment projects for all new construction, including: Home Energy Services and Heat Loan Program Assessment, CoolSmart Incremental Cost Study, Residential Profile Study, Low Income Multifamily Impact Evaluation High Efficiency Heating Equipment Impact Evaluation, Mass Save Multifamily Program Impact and Process Evaluations, Northeast Residential Lighting Hours-of-Use Study, Ductless Mini-Split Heat Pump Impact Study, Home Energy Service Impact and Process Evaluations, Wi-fi Programmable Thermostat Pilot Program Evaluation, Massachusetts Baseline Study of Single-Family Residential New Construction, Multifamily Program Impact Analysis, Brushless Fan Motor Impact Evaluation, Low Income Single Family Impact and Process Evaluations.

**Advisor to the Connecticut Energy Efficiency Board (2016-present)**

Starting in October 2016, Dr. Wirtshafter became a member of the team overseeing the evaluations of Connecticut's energy efficiency programs. He is sharing responsibility for planning and oversight of all residential programs, planning future studies, and selecting and overseeing evaluation contractors.

**Advisor to the New Jersey Board of Public Utilities (2022-present)**

Dr. Wirtshafter is part of The Statewide Evaluation team overseeing all utility and statewide energy efficiency efforts on behalf of the BPU. His responsibilities include directing the New Jersey Cost Test Working Group tasked with developing the next set of avoided cost and cost-benefit values, managing oversight and review of PSEG's evaluation of their portfolio, and participating in design and review of other utility evaluation activities.

**Advisor to the Delaware Energy Efficiency Advisory Council (2015-2021)**

Dr. Wirtshafter is advising the EEAC and the Department of Natural Resources and Environmental Control (DNREC) on statewide evaluation efforts. He has worked with Prime Contractor, Optimal Energy, to establish an evaluation framework and regulations, review evaluation reports, and establish NTG values.

**Adviser to New Hampshire Public Utilities Commission (2018-present)**

Dr. Wirtshafter oversees evaluation of the HPwES and Home Energy Assessment Programs.

**Advisor to Maine Public Utilities Commission (2015-2016)**

Dr. Wirtshafter was the evaluation adviser for the Energy Futures team supporting the PUC's oversight of Efficiency Maine's programs.

**Hawaii Energy Evaluation (2010-2014)**

Dr. Wirtshafter was part of the team evaluating Hawaii Energy's portfolio of programs. He developed a baseline study for C&I customers, and supervised residential evaluation activities. He provided strategic support on alternative methods for measuring net-to-gross impacts. He also evaluated Hawaii Energy's Market Transformation Portfolio.

**Consumers Energy C&I Evaluation (2009-present)**

Dr. Wirtshafter is part of the team evaluating Consumers Energy C&I programs. He has led the customer baseline survey including sampling plan and crafting of survey. He is working with Consumers to restructure their pilot programs to build in evaluation and to design the pilots so they answer key program uncertainties. This includes studies of new construction, agriculture, industrial performance, improving efficiency for school district, and a business behavioral program. He has also built a GIS system to analyze all of Consumers' Commercial portfolio.

**Energy Trust of Oregon (2012-14)**

Dr. Wirtshafter participated in two process evaluations of ETO's Commercial New Construction Program

**NYSERDA Code Compliance Study (2010-11)**

Dr. Wirtshafter was part of a team that investigated the level of energy code compliance in New York State.

**Impact Evaluation of Residential HVAC Tune-up Program (NV Energy 2009)**

Dr. Wirtshafter performed an impact evaluation of the tune up program. Billing data was analyzed using a fixed effects model to estimate electricity savings from a program that paid rebates to contractors who made refrigerant charge and airflow adjustments.

**Impact Evaluation of California Training Center Programs (CPUC 2007-2009)**

Dr. Wirtshafter was part of the Opinion Dynamics team that conducted the first statewide impact evaluation of the nine utility-sponsored training centers. Dr. Wirtshafter contributed on all aspects of the project including overall design, development of instructor and participant data collection instruments, and analysis approaches.

**Evaluation of NYSERDA EmPower Low-Income Program (NYSERDA 2008-2010)**

Wirtshafter Associates, as a subcontractor to Research Into Action, performed three process evaluations of the EmPower Program. This project includes determination of best marketing approaches for getting low-income customers to enroll in program, and assessment of the workshops, and assessment of communication with program contractors. GIS analysis is also being used to assess the appropriateness of training locations.

#### **Other Projects**

- **Impact Evaluation and Market Assessment of Xcel Energy's Colorado Business Lighting Program (Xcel Energy 2008-2009)**
- **Process Evaluation Support for Sempra Residential and C&I Programs (Sempra 2007-2008; and 2011-12)**
- **Evaluation of NYSERDA Multi-family Performance Program (NYSERDA 2006-2008; 2013-2014)**
- **Massachusetts and Rhode Island CoolSmart Program (National Grid 2005-08)**
- **Impact Evaluation of California's Low-Income Energy Efficiency Program (SCE 2004-2007)**
- **Evaluation of California's 20/20 Demand Response Program (SDG&E 2006)**
- **Evaluation of California's Statewide Training and Education Centers (SCE 2004-05)**
- **Study of Hard-to-Reach Residential Customers in California (SCE 2004-05)**
- **Evaluation of Building Energy Code Training (ConSol 2004-05)**
- **Evaluation of Community Energy Efficiency Program (ConSol 2004-05)**
- **Evaluation of California's Statewide Multi-family Rebate Programs (SDGE 2003-2004)**
- **Study of California's Hard-to-Reach Residential Customers SCE (2004)**
- **Evaluation of California Statewide Education, Training, and Services Program (SCE 2004).**
- **Evaluation of SCE's Local Government Initiative (SCE 2003-2004)**
- **Low-Income Universal Service Programs Process Evaluation (PPL Corp 2002).**
- **Statewide Evaluation of New Jersey Utilities Residential Energy Efficiency Programs (Seven NJ utilities, 2002).**
- **Impact and Process Evaluation of Citizens Vermont Low-income Program (CES 2001)**
- **Evaluation of California Residential New Construction Program Training Activities (PG&E 2001)**
- **Evaluation of California Residential Contractor Program. SCE and CBEE (1999 to 2001).**
- **Evaluation of California Residential Standard Performance Contract Programs –California Board for Energy Efficiency and Pacific Gas and Electric (1998 to 2000)**
- **Study on Incorporating Innovation into the Third Party Initiative Program—Southern California Edison. (1999)**
- **Planning Support for Residential Contractor Program—Pacific Gas & Electric, San Diego Gas & Electric, Southern California Edison, and Southern California Gas (1999)**
- **Planning Support for PECO Energy's Competition Pilot (1998)**
- **Onsite Inspection of Northern States Power-Wisconsin's Water Heating Energy Efficiency Program (1998)**
- **Impact Evaluations for Residential New Construction Programs—NEPSCo; EUA, and Northeast Utilities (1995 to 1999)**
- **Market Baseline Study For New Residential Construction -- NEPSCo, Northeast Utilities, EUA, Commonwealth Electric, and Boston Edison (1994-1995)**
- **Low-Income Customer Assistance Programs - Planning and Evaluation – Columbia Gas, Pennsylvania Electric Company, Peoples Gas Company, Metropolitan Edison Company, PG Energy, UGI, Philadelphia Gas Works, PP&L Gas Division (1993 to 2001)**
- **Demand Side Management and Low-Income Program Evaluations -- New York State Electric and Gas: (1993)**
- **Residential Lighting Evaluation Methodology Study -- New York Power Pool: (1992)**
- **Performance-Based Hook-up Fees Study -- New York Power Pool: (1990)**
- **Steam Condensate Recovery Alternative Study-- Consolidated Edison: (1993-94)**

#### **Publications**

Dr. Wirtshafter has written two books and more than 90 articles in refereed journals and proceedings