



DESAUTEL LAW

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401.477.0023

January 6, 2022

VIA ELECTRONIC MAIL & USPS

Luly Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

RE: Docket 5189 – The Narragansett Electric Company d/b/a National Grid Annual  
Energy Efficiency Plan for 2022

Dear Ms. Massaro:

Enclosed herewith for filing please find an original and nine (9) copies of the following document:

1. Energy Efficiency Resource Management Council's Responses to the Public Utilities Commission Sixth Set of Data Requests Issued December 31, 2021.

Please be advised that an electronic copy of this document has been sent to the Service List Updated 12/15/2021. Thank you for your attention to this matter.

Sincerely,

Marisa A. Desautel, Esq.  
Enclosures

cc: Service List

**Docket No. 5189 - National Grid – 2022 Annual Energy Efficiency Program  
Service list updated 12/15/2021**

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**STATE OF RHODE ISLAND  
PUBLIC UTILITIES COMMISSION**

**IN RE: THE NARRAGANSETT** :  
**ELECTRIC COMPANY 2022 ANNUAL** : **DOCKET NO. 5189**  
**ENERGY EFFICIENCY PLAN** :

PUBLIC UTILITIES COMMISSION'S  
SIXTH<sup>1</sup> SET OF DATA REQUESTS DIRECTED TO ENERGY EFFICIENCY RESOURCE  
MANAGEMENT COUNCIL  
(Issued December 31, 2021)  
(Response due January 6, 2022)

- 6-1. Referring to the last market potential study that was performed for the EERMC and referenced in Docket 5023 in 2020, please state the total compensation paid to the vendor for that market potential study. Please also provide copies of all the invoices that were sent by the vendor and indicate the dates payments were made to the vendor. (Because the Commission is not certain about which entities may have made payments to the vendor, this data request is being issued to both National Grid and EERMC.)

Objection. The PUC's Rules of Practice and Procedure allow for all discovery that is "reasonably relevant" to the proceeding (Rule 1.19). EERMC objects to PUC 6-1 on the grounds that this request is not reasonably relevant to the scope of the subject proceeding. Notwithstanding that objection, the EERMC provides the following response:

The total compensation paid to the market potential study vendor was \$530,424.75.

All invoices sent from the vendor for the market potential study are attached.

Payments for these invoices were made to the vendor according to the table below:

*Table 1 – Market Potential Study Payment Schedule*

<b>Payment Date</b>	<b>Payment Amount</b>
12/2/2019	\$14,278.50
12/23/2019	\$132,835.00
2/20/2020	\$245,307.25
3/12/2020	\$108,479.00
4/27/2020	\$29,525.00
<b>TOTAL PAYMENT</b>	<b>\$530,424.75</b>

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<sup>1</sup> EERMC updated the numbering on this set of Data Requests, as there were two sets labeled as "Fifth."



**Invoice 19-2768**

October 31, 2019

**National Grid  
40 Sylvan Road  
Waltham, MA 02451  
USA  
Attention: Mike Guerard, Managing consultant**

**Re: EERMC\_Potential Study**

Project Start-Up Package	\$24,000.00
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<b>Total</b>	<b>USD</b>	<b>\$24,000.00</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT  
Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

**National Grid**  
**40 Sylvan Road**  
**Waltham, MA 02451**  
**USA**

**Attention: Mike Guerard, Managing consultant**

**Re: EERMC\_Potential Study**

October 2019

	Resource	Hours	Rate	Amount
Task 11 Combined Heat and Power (CHP)	Nick Martin	1.25	\$180.00	\$225.00
Task 12 Solar (DG)	Ahmed Hanafy	9.00	\$185.00	\$1,665.00
Task 12 Solar (DG)	Anirudh Kshemendranath	25.50	\$180.00	\$4,590.00
Task 12 Solar (DG)	Francois Bergeron	2.00	\$145.00	\$290.00
Task 12 Solar (DG)	Nick Martin	0.50	\$180.00	\$90.00
Task 4 Internal KOM	Anirudh Kshemendranath	2.00	\$180.00	\$360.00
Task 4 Internal KOM	Francois Bergeron	2.50	\$145.00	\$362.50
Task 5.1 Project Ramp Up	Brent Langille	0.75	\$180.00	\$135.00
Task 5.1 Project Ramp Up	Jon Soehl	2.00	\$180.00	\$360.00
Task 5.2 Project Coordination	Alex Hill	25.50	\$250.00	\$6,375.00
Task 5.2 Project Coordination	Anirudh Kshemendranath	6.25	\$180.00	\$1,125.00
Task 5.2 Project Coordination	David Baumann	2.75	\$180.00	\$495.00
Task 5.2 Project Coordination	François Boulanger	1.00	\$225.00	\$225.00
Task 5.2 Project Coordination	Jon Soehl	33.00	\$180.00	\$5,940.00
Task 5.2 Project Coordination	Nick Martin	30.00	\$180.00	\$5,400.00
Task 6.1 Residential MC	Francois Bergeron	36.25	\$145.00	\$5,256.25
Task 6.1 Residential MC	Jon Soehl	4.50	\$180.00	\$810.00
Task 6.1 Residential MC	Stephanie Willis	16.25	\$145.00	\$2,356.25
Task 6.2 Commercial MC	Anirudh Kshemendranath	40.00	\$180.00	\$7,200.00
Task 6.2 Commercial MC	Jean-Philippe Hardy	1.00	\$225.00	\$225.00
Task 6.2 Commercial MC	Jon Soehl	5.50	\$180.00	\$990.00
Task 6.2 Commercial MC	Stephanie Willis	7.75	\$145.00	\$1,123.75
Task 6.3 Program Characterization	Claire Cameron	3.00	\$145.00	\$435.00
Task 6.3 Program Characterization	David Baumann	2.00	\$180.00	\$360.00
Task 7.1 Residential Market Data	David Baumann	19.00	\$180.00	\$3,420.00
Task 7.1 Residential Market Data	Jon Soehl	5.50	\$180.00	\$990.00
Task 7.1 Residential Market Data	Stephanie Willis	5.00	\$145.00	\$725.00
Task 7.2 Commercial Market Data	Jon Soehl	1.00	\$180.00	\$180.00

**Dunsky Energy Consulting**

50 Ste-Catherine West | Suite 420 | Montreal (Quebec) | Canada H2X 3V4 | T.514.504.9030 | F.514.289.2665 | info@dunsky.com

[www.dunsky.com](http://www.dunsky.com)

Task 8.1 Economic and Baseline Inputs	David Baumann	24.00	\$180.00	\$4,320.00
Task 8.2 Develop QC/Integration Tool	Brent Langille	2.50	\$180.00	\$450.00
Task 8.3 Modelling	Brent Langille	32.35	\$181.34	\$5,827.50
Task 8.3 Modelling	Stephanie Willis	3.50	\$145.00	\$507.50
Task 8.4 Model Integration / QC	Jean-Philippe Hardy	1.75	\$225.00	\$393.75
Task 9.1 DR Measure Characterization	Anirudh Kshemendranath	5.50	\$180.00	\$990.00
Task 9.1 DR Measure Characterization	Claire Cameron	0.50	\$145.00	\$72.50
Task 9.1 DR Measure Characterization	Karine Cazorla	19.50	\$165.00	\$3,217.50
Task 9.2 DR Modelling	Francois Bergeron	2.75	\$145.00	\$398.75
Sub-Total October Fees				\$67,886.25
Sub-Total Fees				\$67,886.25

<b>Total</b>			<b>USD</b>	<b>\$67,886.25</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT - Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

**National Grid  
40 Sylvan Road  
Waltham, MA 02451  
USA**

**Attention: Mike Guerard, Managing consultant**

**Re: EERMC\_Potential Study**

November 2019	Resource	Hours	Rate	Amount
Task 10.1 Residential Electrification MC	Francois Bergeron	0.75	\$145.00	\$108.75
Task 10.1 Residential Electrification MC	Nick Martin	0.50	\$180.00	\$90.00
Task 10.1 Residential Electrification MC	Stephanie Willis	1.50	\$145.00	\$217.50
Task 10.2 Commercial Electrification MC	Nick Martin	0.50	\$180.00	\$90.00
Task 11 Combined Heat and Power (CHP)	Nick Martin	9.00	\$180.00	\$1,620.00
Task 12 Solar (DG)	Ahmed Hanafy	18.00	\$185.00	\$3,330.00
Task 12 Solar (DG)	Anirudh Kshemendranath	23.25	\$180.00	\$4,185.00
Task 12 Solar (DG)	Francois Bergeron	1.50	\$145.00	\$217.50
Task 12 Solar (DG)	Nick Martin	1.00	\$180.00	\$180.00
Task 13.3 Model Documentation	Ahmed Hanafy	1.75	\$185.00	\$323.75
Task 13.3 Model Documentation	Anirudh Kshemendranath	11.25	\$180.00	\$2,025.00
Task 5.2 Project Coordination	Alex Hill	24.75	\$250.00	\$6,187.50
Task 5.2 Project Coordination	Anirudh Kshemendranath	7.50	\$180.00	\$1,350.00
Task 5.2 Project Coordination	David Baumann	15.25	\$180.00	\$2,745.00
Task 5.2 Project Coordination	Francois Bergeron	4.50	\$145.00	\$652.50
Task 5.2 Project Coordination	Jon Soehl	28.50	\$180.00	\$5,130.00
Task 5.2 Project Coordination	Nick Martin	42.75	\$180.00	\$7,695.00
Task 6.1 Residential EE MC	Francois Bergeron	27.50	\$145.00	\$3,987.50
Task 6.1 Residential EE MC	Jon Soehl	1.50	\$180.00	\$270.00
Task 6.1 Residential EE MC	Stephanie Willis	59.00	\$145.00	\$8,555.00
Task 6.2 Commercial EE MC	Anirudh Kshemendranath	23.50	\$180.00	\$4,230.00
Task 6.2 Commercial EE MC	François Boulanger	2.25	\$225.00	\$506.25
Task 6.2 Commercial EE MC	Ginette Riopelle	33.50	\$185.00	\$6,197.50
Task 6.2 Commercial EE MC	Jon Soehl	2.50	\$180.00	\$450.00
Task 6.2 Commercial EE MC	Stephanie Willis	24.75	\$145.00	\$3,588.75
Task 6.3 Program Characterization	Claire Cameron	1.75	\$145.00	\$253.75
Task 6.3 Program Characterization	Nick Martin	0.50	\$180.00	\$90.00
Task 7.1 Residential Market Data	David Baumann	35.75	\$180.00	\$6,435.00



Task 7.1 Residential Market Data	Nick Martin	10.25	\$180.00	\$1,845.00
Task 7.1 Residential Market Data	Stephanie Willis	3.00	\$145.00	\$435.00
Task 7.2 Commercial Market Data	François Boulanger	0.50	\$225.00	\$112.50
Task 7.2 Commercial Market Data	Jon Soehl	39.00	\$180.00	\$7,020.00
Task 7.2 Commercial Market Data	Nick Martin	25.50	\$180.00	\$4,590.00
Task 7.2 Commercial Market Data	Stephanie Willis	0.25	\$145.00	\$36.25
Task 7.3 Residential Market Characterization	Francois Bergeron	36.00	\$145.00	\$5,220.00
Task 7.3 Residential Market Characterization	Jon Soehl	3.00	\$180.00	\$540.00
Task 7.3 Residential Market Characterization	Stephanie Willis	0.50	\$145.00	\$72.50
Task 8.1 Economic and Baseline Inputs	David Baumann	11.50	\$180.00	\$2,070.00
Task 8.1 Economic and Baseline Inputs	François Boulanger	1.50	\$225.00	\$337.50
Task 8.1 Economic and Baseline Inputs	Nick Martin	4.75	\$180.00	\$855.00
Task 8.2 QC integration tool modification	Brent Langille	106.00	\$180.00	\$19,080.00
Task 8.2 QC integration tool modification	Jon Soehl	4.50	\$180.00	\$810.00
Task 8.3 Modelling	Brent Langille	16.25	\$180.00	\$2,925.00
Task 8.3 Modelling	François Boulanger	0.50	\$225.00	\$112.50
Task 8.3 Modelling	Stephanie Willis	5.25	\$145.00	\$761.25
Task 8.4 Model Integration / QC	Anirudh Kshemendranath	11.00	\$180.00	\$1,980.00
Task 8.4 Model Integration / QC	Brent Langille	4.00	\$180.00	\$720.00
Task 8.4 Model Integration / QC	Francois Bergeron	0.75	\$145.00	\$108.75
Task 8.4 Model Integration / QC	Jean-Philippe Hardy	1.50	\$225.00	\$337.50
Task 8.4 Model Integration / QC	Stephanie Willis	2.25	\$145.00	\$326.25
Task 9.1 DR Measure Characterization	Alex Hill	2.50	\$250.00	\$625.00
Task 9.1 DR Measure Characterization	Claire Cameron	6.25	\$145.00	\$906.25
Task 9.1 DR Measure Characterization	Karine Cazorla	34.75	\$165.00	\$5,733.75
Task 9.2 DR Modelling	Alex Hill	1.00	\$250.00	\$250.00
Task 9.2 DR Modelling	Francois Bergeron	29.75	\$145.00	\$4,313.75
Sub-Total November Fees				\$132,835.00

Sub-Total Fees \$132,835.00

<b>Total</b>	<b>USD \$132,835.00</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT  
Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

### Detailed Time Entries

#### Task 10.1 Residential Electrification MC

Resource	Date	Hours	Description
Francois Bergeron	11/07/19	0.25	Initial discussion on modelling approach
Francois Bergeron	11/11/19	0.50	Meeting for modelling approach and characterization loading into model
Nick Martin	11/07/19	0.50	Inputs and assumptions needs
Stephanie Willis	11/15/19	0.75	Feedback on RI electrification measure list.
Stephanie Willis	11/15/19	0.75	Feedback for David on Market data.
Sub-Total		2.75	

#### Task 10.2 Commercial Electrification MC

Resource	Date	Hours	Description
Nick Martin	11/07/19	0.50	Inputs and assumptions needs
Sub-Total		0.50	

#### Task 11 Combined Heat and Power (CHP)

Resource	Date	Hours	Description
Nick Martin	11/01/19	0.50	Call with Brent re: CHP model input needs
Nick Martin	11/05/19	0.25	Discussing CHP methodology with Brent
Nick Martin	11/06/19	1.00	CHP customer data treatment
Nick Martin	11/07/19	1.75	Data treatment
Nick Martin	11/08/19	1.00	CHP data wrangling
Nick Martin	11/13/19	1.00	RI Test application
Nick Martin	11/15/19	1.00	RI Test application to CHP, meeting prep
Nick Martin	11/22/19	1.00	CHP model adaptation meeting with ERS
Nick Martin	11/25/19	1.00	Adapting adoption curve approach for CHP
Nick Martin	11/26/19	0.50	CHP output template
Sub-Total		9.00	

#### Task 12 Solar (DG)

Resource	Date	Hours	Description
Ahmed Hanafy	11/04/19	0.50	Data collection and model set-up
Ahmed Hanafy	11/05/19	0.50	prep + internal meeting
Ahmed Hanafy	11/06/19	1.00	Meeting about model updates with AK
Ahmed Hanafy	11/12/19	1.00	Internal team coordination meeting
Ahmed Hanafy	11/12/19	0.75	Call with OER re: DG (Shauna)
Ahmed Hanafy	11/12/19	0.75	Prep for call with OER + Debrief with AK
Ahmed Hanafy	11/13/19	1.00	Meeting about Wrangler inputs with BL, KC, FB

#### Dunsky Energy Consulting

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[www.dunsky.com](http://www.dunsky.com)

## Detailed Time Entries

Ahmed Hanafy	11/14/19	1.00	DG Calibration approach, data review & Meeting with AK
Ahmed Hanafy	11/18/19	2.00	Solar DG methodology slides
Ahmed Hanafy	11/18/19	0.50	Calibration approach (NEM vs. REG)
Ahmed Hanafy	11/19/19	0.50	Solar DG methodology slides
Ahmed Hanafy	11/19/19	0.50	Internal team coordination call
Ahmed Hanafy	11/19/19	0.25	DG Scenarios with NM
Ahmed Hanafy	11/20/19	1.00	Client Meeting (DG Methodology)
Ahmed Hanafy	11/20/19	1.00	Solar methodology slides + prep for client meeting
Ahmed Hanafy	11/20/19	1.50	NEM Data + REG/incentives research + Value of solar jurisdictional scan
Ahmed Hanafy	11/22/19	0.50	Market research
Ahmed Hanafy	11/25/19	0.50	Building data
Ahmed Hanafy	11/25/19	1.00	Call with Anirudh
Ahmed Hanafy	11/26/19	1.00	Team meeting
Ahmed Hanafy	11/27/19	1.25	DG Data
Anirudh Kshemendranath	11/04/19	2.50	Energy Storage Module
Anirudh Kshemendranath	11/05/19	2.00	Energy Storage Module
Anirudh Kshemendranath	11/06/19	0.50	Energy Storage Module
Anirudh Kshemendranath	11/06/19	0.75	Market Research
Anirudh Kshemendranath	11/06/19	1.00	Energy Storage Module Development
Anirudh Kshemendranath	11/08/19	1.50	Energy Storage Module
Anirudh Kshemendranath	11/11/19	3.00	Energy Storage Modelling
Anirudh Kshemendranath	11/11/19	2.75	Market Research
Anirudh Kshemendranath	11/12/19	1.00	RI Market Research
Anirudh Kshemendranath	11/13/19	1.25	Market Research
Anirudh Kshemendranath	11/14/19	2.50	RI Market Research - DG
Anirudh Kshemendranath	11/18/19	0.75	Energy Storage Methodology
Anirudh Kshemendranath	11/20/19	0.75	REG Incentives: Solar Grant Prices
Anirudh Kshemendranath	11/29/19	3.00	Tariff Energy and Demand Data Collection: Commercial and Residential Customers
Francois Bergeron	11/04/19	1.50	Overview of
Nick Martin	11/25/19	1.00	solar / building count metrics
<b>Sub-Total</b>		<b>43.75</b>	

## Task 13.3 Model Documentation

Resource	Date	Hours	Description
Ahmed Hanafy	11/06/19	1.25	Prep + Model documentation meeting

### Detailed Time Entries

Ahmed Hanafy	11/06/19	0.50	Solar model documentation
Anirudh Kshemendranath	11/04/19	2.50	Model Documentation
Anirudh Kshemendranath	11/05/19	0.50	Model Documentation
Anirudh Kshemendranath	11/06/19	3.00	Model Documentation
Anirudh Kshemendranath	11/06/19	1.50	Internal Call
Anirudh Kshemendranath	11/06/19	1.50	Template
Anirudh Kshemendranath	11/07/19	0.25	Model Documentation
Anirudh Kshemendranath	11/08/19	1.50	Model Documentation
Anirudh Kshemendranath	11/11/19	0.50	Model Documentation: User Guide
Sub-Total		13.00	

### Task 5.2 Project Coordination

Resource	Date	Hours	Description
Alex Hill	11/01/19	1.50	review DR memo + TEAM SCHEUDLING
Alex Hill	11/04/19	1.50	DR memo discussion - weekly coord meeting
Alex Hill	11/05/19	0.50	check in meeting with team
Alex Hill	11/06/19	2.50	bi-weekly check in, model documentation coord meeting
Alex Hill	11/07/19	1.00	call with Lori Lewis
Alex Hill	11/08/19	1.50	exo factor memo replies
Alex Hill	11/11/19	1.50	weekly check in and heat pump model integration + barriers discussion
Alex Hill	11/12/19	0.50	weekly team meeting
Alex Hill	11/13/19	0.50	call with cadmus
Alex Hill	11/14/19	1.00	market data treatment discussion
Alex Hill	11/15/19	0.50	review customer data memo comments
Alex Hill	11/18/19	0.25	check in
Alex Hill	11/19/19	2.50	meetings with NGrid
Alex Hill	11/20/19	4.00	prep and present at monthly meeting
Alex Hill	11/21/19	0.50	heat pump list and slides fix
Alex Hill	11/22/19	1.50	CHP approach meeting with ERS and coordination with Nick
Alex Hill	11/25/19	1.50	review market inputs + weekly update meeting
Alex Hill	11/26/19	0.50	review
Alex Hill	11/27/19	0.50	ERS subcontract
Alex Hill	11/28/19	0.50	DRIPE questoins etc.
Alex Hill	11/29/19	0.50	discuss governing market metrics
Anirudh Kshemendranath	11/05/19	0.50	Check in Call

### Detailed Time Entries

Anirudh Kshemendranath	11/06/19	1.00	Coordination Call - DG
Anirudh Kshemendranath	11/11/19	0.75	AHmed - Ani Check in
Anirudh Kshemendranath	11/12/19	1.00	Ani Ahmed Call with OER
Anirudh Kshemendranath	11/12/19	1.00	Coordination Call
Anirudh Kshemendranath	11/13/19	0.75	Ani-Ginette
Anirudh Kshemendranath	11/25/19	1.00	Ani-Ahmed Meeting
Anirudh Kshemendranath	11/26/19	1.00	Coordination Meeting
Anirudh Kshemendranath	11/27/19	0.50	Steph Ani Coordination Call
David Baumann	11/05/19	1.00	RI check-in meeting
David Baumann	11/08/19	1.00	Coordination meeting with Lori Lewis
David Baumann	11/12/19	1.25	Coordination meeting
David Baumann	11/15/19	0.75	Call with L.Lewis on Program Characterization
David Baumann	11/18/19	1.25	Meeting with L.Lewis on Program Characterization
David Baumann	11/19/19	4.00	Project coordination with Lori on Forecasts and Program Characterization
David Baumann	11/22/19	0.50	Program Characterization Coordination
David Baumann	11/25/19	1.25	Program characterization review
David Baumann	11/26/19	2.50	Program characterization review
David Baumann	11/27/19	1.75	Template reviews for Lori Lewis
Francois Bergeron	11/05/19	0.50	Bi-weekly meeting
Francois Bergeron	11/06/19	1.25	Model documentation meeting
Francois Bergeron	11/12/19	1.00	Biweekly meeting
Francois Bergeron	11/19/19	0.50	Weekly meeting - Follow up on project
Francois Bergeron	11/26/19	1.25	Weekly meeting
Jon Soehl	11/01/19	5.00	Scheduling
Jon Soehl	11/04/19	1.50	meetings
Jon Soehl	11/05/19	0.50	Schedule meeting
Jon Soehl	11/08/19	4.50	Planning
Jon Soehl	11/11/19	2.00	Meetings
Jon Soehl	11/12/19	4.50	Scheduling/Coordination Meeting
Jon Soehl	11/13/19	0.50	General
Jon Soehl	11/25/19	5.00	General Coordination
Jon Soehl	11/26/19	3.00	Team Meeting
Jon Soehl	11/27/19	2.00	Market Archetype
Nick Martin	11/01/19	1.50	Reviewing data, standards and building code assumptions from NGrid. Customer data next steps.

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### Detailed Time Entries

Nick Martin	11/04/19	1.25	Call: Heating electrification, Brattle
Nick Martin	11/04/19	0.75	Weekly coordination meeting
Nick Martin	11/04/19	0.50	Wider project coordination meeting
Nick Martin	11/05/19	1.00	.25 hours for coordination; .75 for data handling
Nick Martin	11/06/19	1.75	Check-in meeting with client (prep, meeting, follow up)
Nick Martin	11/07/19	2.00	Invoice issues, biweekly meeting follow up. Heating electrification assumptions / inputs memo.
Nick Martin	11/07/19	0.50	Heating electrification coordination
Nick Martin	11/07/19	0.50	CHP coordination with ERS
Nick Martin	11/08/19	0.50	Heating electrification memo
Nick Martin	11/11/19	1.25	Weekly check-in with Jon + Alex; heating electrification model modifications meeting.
Nick Martin	11/12/19	1.00	Heating electrification call with Brattle, meeting prep
Nick Martin	11/12/19	0.50	Internal analyst coordination meeting
Nick Martin	11/13/19	1.00	Heating electrification call with Cadmus
Nick Martin	11/14/19	0.75	Coordination call with DNV-GL re: baseline data.
Nick Martin	11/14/19	1.00	Heating electrification measure list revise
Nick Martin	11/14/19	0.75	RI Test benefit stream data QC
Nick Martin	11/15/19	0.75	program char meetings coordination
Nick Martin	11/15/19	1.25	Heating electrification coordination, approach and next steps confirmation
Nick Martin	11/18/19	0.50	Data follow-ups, invoicing follow-ups
Nick Martin	11/18/19	1.25	Scenarios memo
Nick Martin	11/18/19	0.75	Biweekly check-in meeting + follow up
Nick Martin	11/18/19	1.50	Monthly meeting presentation
Nick Martin	11/19/19	1.50	Call w/ NGrid re: DR programs, DRIPE RI Test data issues
Nick Martin	11/19/19	1.00	Analyst team check-in, issue resolution and follow up
Nick Martin	11/19/19	1.00	residential program call with NGrid
Nick Martin	11/19/19	1.00	C&I program call with NGrid
Nick Martin	11/20/19	2.00	Monthly meeting
Nick Martin	11/20/19	3.00	Team structure revisement, CVs, monthly meeting prep
Nick Martin	11/21/19	1.50	RI Test integration issues, slide updates
Nick Martin	11/21/19	1.25	Monthly meeting follow up, summary, slides, emails
Nick Martin	11/21/19	0.25	Wrangler review, data inputs
Nick Martin	11/21/19	0.25	Measure list amendments
Nick Martin	11/22/19	1.00	DR meeting coordination, RI non-NGrid customer data review and integration

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### Detailed Time Entries

Nick Martin	11/22/19	1.00	RI Test Integration
Nick Martin	11/24/19	0.50	Updated meeting slides, measure list alterations request.
Nick Martin	11/25/19	1.00	Weekly check-in with Alex and Jon + Baseline data follow-ups
Nick Martin	11/26/19	0.75	Revisions to ERS subcontract
Nick Martin	11/26/19	1.25	Internal analyst team check-in
Nick Martin	11/27/19	1.00	Data issue follow-ups
Nick Martin	11/27/19	1.00	Data request summary, data processing
Sub-Total		123.25	

### Task 6.1 Residential EE MC

Resource	Date	Hours	Description
Francois Bergeron	11/01/19	5.00	Measure Characterization - HVAC
Francois Bergeron	11/07/19	1.50	QC meeting
Francois Bergeron	11/07/19	4.00	QC corrections for measure characterization
Francois Bergeron	11/08/19	6.00	QC corrections for measure characterization
Francois Bergeron	11/12/19	0.50	Discussion on dehumidifier recycling modelling & characterization approach (ADD vs ER)
Francois Bergeron	11/13/19	2.00	Corrections to QC measures
Francois Bergeron	11/25/19	0.25	Residential MC - QC corrections
Francois Bergeron	11/26/19	6.25	Residential MC - QC corrections
Francois Bergeron	11/28/19	2.00	Residential MC - QC corrections
Jon Soehl	11/08/19	1.00	Measure List
Jon Soehl	11/13/19	0.50	Master Update
Stephanie Willis	11/05/19	8.25	QCing residential measures - appliances, envelopes and hot water.
Stephanie Willis	11/05/19	0.50	Scheduling meeting.
Stephanie Willis	11/07/19	1.50	Meeting with F Bergeron to review residential measure QC.
Stephanie Willis	11/11/19	0.50	Reviewing lighting memo
Stephanie Willis	11/12/19	1.00	Coordination meeting
Stephanie Willis	11/12/19	1.50	Preparing ancillary template
Stephanie Willis	11/14/19	2.00	Measure QC
Stephanie Willis	11/18/19	3.25	Measure QC
Stephanie Willis	11/19/19	0.50	Following up on whether there should be an oil new construction measure.
Stephanie Willis	11/19/19	1.25	Measure QC
Stephanie Willis	11/21/19	2.00	Characterising solar water heaters
Stephanie Willis	11/22/19	1.25	Solar thermal measure
Stephanie Willis	11/22/19	7.75	QC ing residential measures

### Detailed Time Entries

Stephanie Willis	11/23/19	4.00	Residential measure QC
Stephanie Willis	11/25/19	0.50	Running residential measure sheet.
Stephanie Willis	11/25/19	1.75	Deciding on approach for lighting measures.
Stephanie Willis	11/25/19	0.50	Coordination on timing for first model run.
Stephanie Willis	11/25/19	3.75	Research on HER EUL adjustments. Implementing decisions on lighting measures.
Stephanie Willis	11/26/19	1.00	Finding data for annual heating and annual cooling load.
Stephanie Willis	11/26/19	3.00	Ancillary data
Stephanie Willis	11/26/19	1.00	Coordination meeting.
Stephanie Willis	11/27/19	6.00	Ancillary data
Stephanie Willis	11/27/19	0.75	Dealing with remaining measure characterisation issues.
Stephanie Willis	11/28/19	3.00	Ancillary data
Stephanie Willis	11/29/19	2.50	Ancillary mapping from RI TRM
Sub-Total		88.00	

### Task 6.2 Commercial EE MC

Resource	Date	Hours	Description
Anirudh Kshemendranath	11/05/19	1.25	Commercial Measure Characterization - Quality Check
Anirudh Kshemendranath	11/07/19	2.25	Commercial Measure Characterization
Anirudh Kshemendranath	11/08/19	0.25	MC- Commercial Characterization
Anirudh Kshemendranath	11/11/19	0.25	Measure Characterization DCV
Anirudh Kshemendranath	11/14/19	0.75	Measure Characterization
Anirudh Kshemendranath	11/18/19	3.50	Measure Characterization: Commercial
Anirudh Kshemendranath	11/20/19	2.00	Measure Characterization: Commercial
Anirudh Kshemendranath	11/21/19	1.50	Measure Characterization: Commercial
Anirudh Kshemendranath	11/21/19	1.00	Hot water Evaluation: Storage Water Heaters
Anirudh Kshemendranath	11/21/19	1.50	Hot Water Measure Characterization
Anirudh Kshemendranath	11/22/19	2.50	Measure Characterization: Quality Check
Anirudh Kshemendranath	11/22/19	0.50	Measure Characterization: Refrigeration Heat Recovery
Anirudh Kshemendranath	11/23/19	0.25	Measure Characterization: Quality Check
Anirudh Kshemendranath	11/23/19	1.00	Measure Characterization: Running Checklist for Review
Anirudh Kshemendranath	11/27/19	1.50	Measure Characterization: Oil Measures
Anirudh Kshemendranath	11/28/19	3.50	Measure Characterization
François Boulanger	11/01/19	0.75	review Custom measure database
François Boulanger	11/25/19	1.50	Review custom measures , call with GR to begin analysis
Ginette Riopelle	11/12/19	0.50	Project start-up call with Jon + Stephanie

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### Detailed Time Entries

Ginette Riopelle	11/13/19	1.00	Call with Stephanie and Anirudh
Ginette Riopelle	11/15/19	5.00	Measure QC
Ginette Riopelle	11/16/19	4.50	Measure QC
Ginette Riopelle	11/18/19	1.50	QC commercial measures
Ginette Riopelle	11/19/19	3.00	QC commercial measures
Ginette Riopelle	11/20/19	2.00	QC commercial measures
Ginette Riopelle	11/21/19	0.50	QC commercial measures
Ginette Riopelle	11/22/19	3.00	QC commercial measures
Ginette Riopelle	11/24/19	1.50	QC commercial measures
Ginette Riopelle	11/25/19	4.00	Commercial measure QC (3hrs); custom commercial measure characterization (1hr)
Ginette Riopelle	11/26/19	3.00	QC commercial measures
Ginette Riopelle	11/28/19	3.00	QC commercial measures
Ginette Riopelle	11/29/19	1.00	Custom commercial measures characterization
Jon Soehl	11/08/19	1.50	Measure List
Jon Soehl	11/13/19	1.00	Master Update
Stephanie Willis	11/01/19	0.75	Coordination on standards to use.
Stephanie Willis	11/01/19	0.50	Cool roof characterization
Stephanie Willis	11/04/19	0.25	Planning.
Stephanie Willis	11/04/19	6.75	Commercial measure QC.
Stephanie Willis	11/06/19	0.75	Follow up on meeting with alex on lighting reflectors/specialty.
Stephanie Willis	11/07/19	4.50	Emailing team on measure decisions relating to standards and lighting. Research on water heating measures to inform suggested changes.
Stephanie Willis	11/08/19	1.25	QC Coordination. Documenting water heater measure changes.
Stephanie Willis	11/11/19	0.50	Measure QC - Ozone laundry cont.
Stephanie Willis	11/11/19	1.00	Coordination on commercial QC.
Stephanie Willis	11/12/19	2.00	Reviewing required changes to master. Coordination of remaining measures.
Stephanie Willis	11/13/19	1.00	Coordination on Commercial measure QC.
Stephanie Willis	11/13/19	1.75	Pulling updates from master into wrangler and then into commercial measure.
Stephanie Willis	11/13/19	0.50	Starting to update HVAC Controls factsheet
Stephanie Willis	11/14/19	1.00	Template update.
Stephanie Willis	11/18/19	1.00	Supporting measure QC
Stephanie Willis	11/19/19	0.75	Support on commercial measure QC.
Stephanie Willis	11/27/19	0.50	Call with Ani on oil measures.
<b>Sub-Total</b>		<b>86.50</b>	

## Detailed Time Entries

### Task 6.3 Program Characterization

Resource	Date	Hours	Description
Claire Cameron	11/18/19	1.25	Program characterization meeting with Lori Lewis
Claire Cameron	11/26/19	0.50	Reviewing Lori's work
Nick Martin	11/19/19	0.50	Program characterisation review
Sub-Total		2.25	

### Task 7.1 Residential Market Data

Resource	Date	Hours	Description
David Baumann	11/04/19	3.50	Metric Creation
David Baumann	11/05/19	3.75	Metric creation
David Baumann	11/06/19	5.00	residential Market archetypes
David Baumann	11/07/19	2.75	Market archetype characterization
David Baumann	11/13/19	4.00	residential Market Characterization
David Baumann	11/14/19	1.25	Characterizing further metrics
David Baumann	11/15/19	4.50	Finalizing market characterization
David Baumann	11/18/19	3.50	Residential Market edits
David Baumann	11/19/19	0.50	Edits to Market Characterization
David Baumann	11/20/19	2.00	Market characterization edits
David Baumann	11/21/19	0.50	Finishes to Market characterization
David Baumann	11/25/19	4.50	Residential market characterization - finalize
Nick Martin	11/02/19	2.00	treating customer data
Nick Martin	11/04/19	1.00	Customer data treatment
Nick Martin	11/05/19	0.50	customer data treatment
Nick Martin	11/06/19	1.75	Methodology memo
Nick Martin	11/11/19	1.00	Customer data treatment
Nick Martin	11/12/19	1.00	metric calculations
Nick Martin	11/15/19	1.00	Multi-family treatment, large consumers treatment
Nick Martin	11/25/19	1.50	residential heating load derivation
Nick Martin	11/28/19	0.50	Customer metrics updates
Stephanie Willis	11/11/19	1.75	Preparing the pensat template.
Stephanie Willis	11/14/19	0.50	Responding to D Bauman's market data questions.
Stephanie Willis	11/25/19	0.75	QCing residential pensat data
Sub-Total		49.00	

### Task 7.2 Commercial Market Data

Resource	Date	Hours	Description
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## Detailed Time Entries

François Boulanger	11/27/19	0.50	Discuss market archetype input data selection
Jon Soehl	11/01/19	1.50	Customer Data/Market Archetype Development
Jon Soehl	11/04/19	3.50	Baseline Study Review
Jon Soehl	11/05/19	3.50	Market Archetype
Jon Soehl	11/06/19	5.00	Market Archetype
Jon Soehl	11/07/19	4.00	Baseline Data
Jon Soehl	11/08/19	1.00	Market Archetype
Jon Soehl	11/11/19	2.50	Market Characterization
Jon Soehl	11/13/19	2.50	Market Archetypes
Jon Soehl	11/14/19	6.00	Market Archetypes
Jon Soehl	11/15/19	1.00	Market Archetypes
Jon Soehl	11/26/19	3.00	Market Archetypes
Jon Soehl	11/28/19	3.00	Market Archetype
Jon Soehl	11/29/19	2.50	Market Archetype
Nick Martin	11/02/19	3.00	treating customer data
Nick Martin	11/04/19	1.50	Customer data treatment, call with David on approach
Nick Martin	11/05/19	0.50	Customer data treatment
Nick Martin	11/06/19	1.75	Methodology memo
Nick Martin	11/11/19	2.00	Customer data treatment
Nick Martin	11/12/19	2.00	Customer data treatment, metric calculations
Nick Martin	11/13/19	0.25	Aligning customer data with sales forecasts
Nick Martin	11/14/19	1.50	Benchmarking customer metrics to forecasted data, market archetype approach call w/ Jon + Alex.
Nick Martin	11/18/19	1.00	Customer data treatment, metric refinement
Nick Martin	11/19/19	2.00	Metric development
Nick Martin	11/20/19	2.00	Metric development
Nick Martin	11/22/19	2.50	Metrics development, customer data treatment
Nick Martin	11/24/19	0.50	Updating customer metrics
Nick Martin	11/27/19	0.50	Revisions to baseline archetype
Nick Martin	11/28/19	1.00	Customer metrics, governing metrics
Nick Martin	11/28/19	2.00	Updating governing metrics
Nick Martin	11/29/19	1.50	Governing metrics review with Alex, and follow up
Stephanie Willis	11/06/19	0.25	Talking through approach on commercial heating equipment markets with Jon.
Sub-Total		65.25	

### Task 7.3 Residential Market Characterization

### Detailed Time Entries

Resource	Date	Hours	Description
Francois Bergeron	11/07/19	0.50	Market Characterization template initial presentation
Francois Bergeron	11/15/19	1.00	Characterization - Appliances
Francois Bergeron	11/18/19	6.00	Characterization - Appliances, Hot Water, HVAC
Francois Bergeron	11/19/19	6.00	Characterization - Hot Water, HVAC
Francois Bergeron	11/20/19	6.00	Characterization - HVAC, HVAC controls
Francois Bergeron	11/21/19	4.00	Characterization - HVAC, HVAC controls, Others (pool pumps, etc.)
Francois Bergeron	11/22/19	4.00	Characterization - Leftover measures
Francois Bergeron	11/27/19	1.50	Market Characterization - QC Corrections
Francois Bergeron	11/29/19	7.00	Market Characterization - QC Corrections
Jon Soehl	11/27/19	3.00	QC
Stephanie Willis	11/11/19	0.50	Preparing the market template.
<b>Sub-Total</b>		<b>39.50</b>	

### Task 8.1 Economic and Baseline Inputs

Resource	Date	Hours	Description
David Baumann	11/06/19	0.50	Program characterization management
David Baumann	11/12/19	4.00	Rates development
David Baumann	11/13/19	1.50	Edits to Rates
David Baumann	11/14/19	0.25	AC changes
David Baumann	11/15/19	2.25	Avoided Costs Development
David Baumann	11/18/19	0.75	Avoided Costs Updates
David Baumann	11/19/19	2.25	Forecasts Development
François Boulanger	11/21/19	1.00	Review avoided costs
François Boulanger	11/25/19	0.50	Avoided costs analysis
Nick Martin	11/14/19	1.00	Benchmarking metrics
Nick Martin	11/27/19	2.25	AC rates / DRIPE benefit rates
Nick Martin	11/28/19	1.50	DRIPE rates derivation
<b>Sub-Total</b>		<b>17.75</b>	

### Task 8.2 QC integration tool modification

Resource	Date	Hours	Description
Brent Langille	11/05/19	4.50	develop import/export data features
Brent Langille	11/06/19	9.00	develop import/export data features
Brent Langille	11/07/19	4.25	develop import/export data features
Brent Langille	11/08/19	7.00	develop reporting
Brent Langille	11/11/19	4.75	develop code

### Detailed Time Entries

Brent Langille	11/12/19	5.75	develop queries
Brent Langille	11/13/19	6.50	develop queries
Brent Langille	11/14/19	7.50	develop plots
Brent Langille	11/18/19	7.50	develop tables and plots
Brent Langille	11/19/19	7.00	develop tables and plots
Brent Langille	11/20/19	4.00	develop tables and plots
Brent Langille	11/21/19	6.50	develop tables and plots
Brent Langille	11/22/19	8.25	develop tables and plots
Brent Langille	11/25/19	7.00	develop reports
Brent Langille	11/26/19	2.00	develop reports
Brent Langille	11/27/19	8.50	develop reports
Brent Langille	11/28/19	6.00	develop reports
Jon Soehl	11/12/19	2.50	Review of prototype
Jon Soehl	11/13/19	2.00	Meeting
<b>Sub-Total</b>		<b>110.50</b>	

### Task 8.3 Modelling

Resource	Date	Hours	Description
Brent Langille	11/01/19	1.50	dicuss CHP, review calculations
Brent Langille	11/04/19	3.25	develop RI test implementation
Brent Langille	11/05/19	1.00	develop RI test implementation
Brent Langille	11/07/19	3.00	develop RI test implementation
Brent Langille	11/15/19	7.50	setup data flows
François Boulanger	11/11/19	0.50	Review fuel switching methodology
Stephanie Willis	11/12/19	2.25	Preparing market template
Stephanie Willis	11/26/19	2.00	Template refreshes and fixes in measures and markets
Stephanie Willis	11/27/19	1.00	Refreshing data in templates
<b>Sub-Total</b>		<b>22.00</b>	

### Task 8.4 Model Integration / QC

Resource	Date	Hours	Description
Anirudh Kshemendranath	11/12/19	2.00	Measure Characterization QC
Anirudh Kshemendranath	11/24/19	2.00	Measure Characterization: Quality Check
Anirudh Kshemendranath	11/25/19	3.50	Measure Characterization: Quality Check
Anirudh Kshemendranath	11/26/19	2.00	Measure Characterization: Quality Check
Anirudh Kshemendranath	11/26/19	1.50	Measure Characterization

### Detailed Time Entries

Brent Langille	11/29/19	4.00	integrate wrangler and model
Francois Bergeron	11/13/19	0.75	Meeting for data integration
Jean-Philippe Hardy	11/04/19	0.50	QC tool
Jean-Philippe Hardy	11/14/19	1.00	Meeting w/Brent for QC tool
Stephanie Willis	11/26/19	0.50	Meeting with Brent on QC flow
Stephanie Willis	11/28/19	1.75	Preparing wrangler for first model run.
<b>Sub-Total</b>		<b>19.50</b>	

### Task 9.1 DR Measure Characterization

Resource	Date	Hours	Description
Alex Hill	11/19/19	2.00	rewevi memo with Karine Cazrola + review MA DR report
Alex Hill	11/29/19	0.50	DR measure list
Claire Cameron	11/05/19	0.75	Reviewing DR to-dos with Karine
Claire Cameron	11/08/19	0.75	Reviewing DR memo
Claire Cameron	11/11/19	1.50	Review DR memo, DR slides
Claire Cameron	11/12/19	1.50	Review of DR methods, meeting with KC
Claire Cameron	11/20/19	1.00	Check-in with Karine
Claire Cameron	11/21/19	0.75	Reviewing MA potential study for programs, measures
Karine Cazrola	11/01/19	3.50	DR Study: First Steps - Data Analysis & Memo
Karine Cazrola	11/01/19	1.00	DR Study: Data collection
Karine Cazrola	11/04/19	5.25	DR Study: Preliminary Modelling Steps
Karine Cazrola	11/05/19	1.50	DR Study: Team Coordination
Karine Cazrola	11/05/19	3.00	Meeting with C.Cameron. Tasks Distribution.
Karine Cazrola	11/06/19	0.25	DR Study: Emails
Karine Cazrola	11/08/19	1.50	DR Study: Program Characterization
Karine Cazrola	11/11/19	0.50	Review of the DR Memo Comments
Karine Cazrola	11/12/19	1.50	Meeting with C.Cameron
Karine Cazrola	11/12/19	1.25	Weekly Meeting
Karine Cazrola	11/13/19	1.00	Internal Meeting about Wrangler data
Karine Cazrola	11/14/19	0.25	Emails
Karine Cazrola	11/19/19	1.75	Preparation of the meeting with client
Karine Cazrola	11/19/19	1.00	Meeting with National Grid and P.Wassink
Karine Cazrola	11/19/19	1.00	DR memo: meeting with A.Hill
Karine Cazrola	11/19/19	0.50	Avoided Costs Research
Karine Cazrola	11/20/19	2.00	Forward Capacity Market - Avoided Costs
Karine Cazrola	11/20/19	0.75	Meeting with C.Cameron

#### Dunsky Energy Consulting

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### Detailed Time Entries

Karine Cazorla	11/20/19	3.25	DR Methodology: Presentation and Emails
Karine Cazorla	11/21/19	0.50	Emails
Karine Cazorla	11/26/19	3.00	Discussion With National Grid and Weekly Meeting
Karine Cazorla	11/28/19	0.50	Review of the missing data
<b>Sub-Total</b>		<b>43.50</b>	

### Task 9.2 DR Modelling

Resource	Date	Hours	Description
Alex Hill	11/14/19	1.00	prep slides
Francois Bergeron	11/04/19	1.00	Meeting to discuss DR inputs
Francois Bergeron	11/05/19	0.50	Input questions
Francois Bergeron	11/06/19	2.00	Modelling approach meeting + documentation
Francois Bergeron	11/08/19	1.25	Meetings - Upcoming requirements for modelling
Francois Bergeron	11/11/19	6.00	8760 load curve for all segments + peak day based on US DOE simulations
Francois Bergeron	11/13/19	3.50	8760 end-use breakdown, by segment - initial work
Francois Bergeron	11/14/19	6.50	8760 load curves
Francois Bergeron	11/15/19	5.50	8760 load curves
Francois Bergeron	11/18/19	0.50	Clarification on DR approach by email
Francois Bergeron	11/19/19	1.50	Standard peak day end-use/segment breakdown
Francois Bergeron	11/22/19	1.50	8760 load curve excel output
<b>Sub-Total</b>		<b>30.75</b>	

October 31, 2019

**National Grid**  
**40 Sylvan Road**  
**Waltham, MA 02451**  
**USA**
**Attention: Mike Guerard, Managing consultant**
**Re: RI\_EERMC\_Potential Study**

September 2019	Resource	Hours	Rate	Amount
Task 1 Contract Award	Alex Hill	0.50	\$250.00	\$125.00
Task 12 Solar (DG)	Ahmed Hanafy	1.50	\$185.00	\$277.50
Task 4 Internal KOM	Alex Hill	6.50	\$250.00	\$1,625.00
Task 4 Internal KOM	Francois Bergeron	1.25	\$145.00	\$181.25
Task 4 Internal KOM	Karine Cazorla	2.00	\$165.00	\$330.00
Task 4 Internal KOM	Nick Martin	2.50	\$180.00	\$450.00
Task 4 Internal KOM	Stephanie Willis	1.25	\$145.00	\$181.25
Task 5.1 Project Ramp Up	Alex Hill	3.00	\$250.00	\$750.00
Task 5.1 Project Ramp Up	Brent Langille	1.50	\$180.00	\$270.00
Task 5.1 Project Ramp Up	François Boulanger	1.50	\$225.00	\$337.50
Task 5.1 Project Ramp Up	Jon Soehl	3.50	\$180.00	\$630.00
Task 5.1 Project Ramp Up	Stephanie Willis	0.50	\$145.00	\$72.50
Task 5.2 Project Coordination	Ahmed Hanafy	1.75	\$185.00	\$323.75
Task 5.2 Project Coordination	Alex Hill	12.50	\$250.00	\$3,125.00
Task 5.2 Project Coordination	François Boulanger	1.50	\$225.00	\$337.50
Task 5.2 Project Coordination	Jon Soehl	29.50	\$180.00	\$5,310.00
Task 5.2 Project Coordination	Nick Martin	48.75	\$180.00	\$8,775.00
Task 6.1 Residential MC	Alex Hill	0.50	\$250.00	\$125.00
Task 6.2 Commercial MC	Alex Hill	1.50	\$250.00	\$375.00
Task 6.2 Commercial MC	Jean-Philippe Hardy	0.25	\$225.00	\$56.25
Task 7.2 Commercial Market Data	David Baumann	17.50	\$180.00	\$3,150.00
Task 7.2 Commercial Market Data	François Boulanger	0.75	\$225.00	\$168.75
Task 7.2 Commercial Market Data	Jon Soehl	12.00	\$180.00	\$2,160.00
Task 8.3 Modelling	Brent Langille	4.87	\$180.00	\$876.00
Task 8.3 Modelling	François Boulanger	0.75	\$225.00	\$168.75
Task 8.3 Modelling	Stephanie Willis	21.25	\$145.00	\$3,081.25
Task 9.1 DR Measure Characterization	Karine Cazorla	1.75	\$165.00	\$288.75
Task 9.2 DR Modelling	Francois Bergeron	1.25	\$145.00	\$181.25
Sub-Total September Fees				\$33,732.25
Sub-Total Fees				\$33,732.25

<b>Total</b>	<b>USD</b>	<b>\$33,732.25</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT - Internal Project Number: 1940

 GST/HST #: 827843954  
 PST #: 1213821713

**Dunsky Energy Consulting**

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[www.dunsky.com](http://www.dunsky.com)



**National Grid  
40 Sylvan Road  
Waltham, MA 02451  
USA**

**Attention: Mike Guerard, Managing consultant**

**Re: RI EERMC\_Potential Study**

December 2019	Resource	Hours	Rate	Amount
Task 10.1 Residential Electrification MC	Francois Bergeron	39.00	\$145.00	\$5,655.00
Task 10.1 Residential Electrification MC	Nick Martin	1.50	\$180.00	\$270.00
Task 10.1 Residential Electrification MC	Stephanie Willis	0.75	\$145.00	\$108.75
Task 10.2 Commercial Electrification MC	Anirudh Kshemendranath	9.50	\$180.00	\$1,710.00
Task 10.2 Commercial Electrification MC	Nick Martin	9.00	\$180.00	\$1,620.00
Task 10.3 QC	Nick Martin	13.50	\$180.00	\$2,430.00
Task 11 Combined Heat and Power (CHP)	Nick Martin	5.00	\$180.00	\$900.00
Task 12 Solar (DG)	Ahmed Hanafy	10.50	\$185.00	\$1,942.50
Task 12 Solar (DG)	Anirudh Kshemendranath	23.25	\$180.00	\$4,185.00
Task 12 Solar (DG)	Francois Bergeron	4.25	\$145.00	\$616.25
Task 2 Draft Results	Nick Martin	5.00	\$180.00	\$900.00
Task 4 Internal KOM	Anirudh Kshemendranath	3.25	\$180.00	\$585.00
Task 5.2 Project Coordination	Alex Hill	16.50	\$250.00	\$4,125.00
Task 5.2 Project Coordination	David Baumann	5.00	\$180.00	\$900.00
Task 5.2 Project Coordination	Francois Bergeron	1.75	\$145.00	\$253.75
Task 5.2 Project Coordination	Jon Soehl	7.00	\$180.00	\$1,260.00
Task 5.2 Project Coordination	Nick Martin	18.75	\$180.00	\$3,375.00
Task 6.1 Residential EE MC	Stephanie Willis	29.25	\$145.00	\$4,241.25
Task 6.2 Commercial EE MC	François Boulanger	4.50	\$225.00	\$1,012.50
Task 6.2 Commercial EE MC	Ginette Riopelle	16.00	\$185.00	\$2,960.00
Task 6.2 Commercial EE MC	Stephanie Willis	17.75	\$145.00	\$2,573.75
Task 6.3 Program Characterization	Alex Hill	1.00	\$250.00	\$250.00
Task 6.3 Program Characterization	David Baumann	1.00	\$180.00	\$180.00
Task 6.3 Program Characterization	Martin Poirier	1.00	\$225.00	\$225.00
Task 6.3 Program Characterization	Nick Martin	2.00	\$180.00	\$360.00
Task 7.1 Residential Market Data	David Baumann	7.50	\$180.00	\$1,350.00
Task 7.1 Residential Market Data	Stephanie Willis	25.50	\$145.00	\$3,697.50
Task 7.2 Commercial Market Data	Jon Soehl	20.50	\$180.00	\$3,690.00
Task 7.2 Commercial Market Data	Nick Martin	4.50	\$180.00	\$810.00
Task 7.2 Commercial Market Data	Stephanie Willis	8.25	\$145.00	\$1,196.25
Task 7.3 Residential Market Characterization	Francois Bergeron	1.50	\$145.00	\$217.50
Task 7.3 Residential Market Characterization	Stephanie Willis	4.00	\$145.00	\$580.00
Task 7.4 Commercial Market Characterization	Jon Soehl	18.00	\$180.00	\$3,240.00
Task 7.4 Commercial Market Characterization	Stephanie Willis	3.00	\$145.00	\$435.00

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Task 8.1 Economic and Baseline Inputs	David Baumann	19.50	\$180.00	\$3,510.00
Task 8.1 Economic and Baseline Inputs	Martin Poirier	1.75	\$225.00	\$393.75
Task 8.1 Economic and Baseline Inputs	Nick Martin	17.50	\$180.00	\$3,150.00
Task 8.2 QC integration tool modification	Brent Langille	19.00	\$180.00	\$3,420.00
Task 8.2 QC integration tool modification	Jon Soehl	6.50	\$180.00	\$1,170.00
Task 8.4 Model Integration / QC	Alex Hill	1.50	\$250.00	\$375.00
Task 8.4 Model Integration / QC	Anirudh Kshemendranath	0.25	\$180.00	\$45.00
Task 8.4 Model Integration / QC	Brent Langille	84.50	\$180.00	\$15,210.00
Task 8.4 Model Integration / QC	Francois Bergeron	36.50	\$145.00	\$5,292.50
Task 8.4 Model Integration / QC	Jon Soehl	9.00	\$180.00	\$1,620.00
Task 8.4 Model Integration / QC	Stephanie Willis	9.25	\$145.00	\$1,341.25
Task 9.1 DR Measure Characterization	Alex Hill	0.75	\$250.00	\$187.50
Task 9.1 DR Measure Characterization	Claire Cameron	7.00	\$145.00	\$1,015.00
Task 9.1 DR Measure Characterization	Karine Cazorla	41.75	\$165.00	\$6,888.75
Task 9.2 DR Modelling	Francois Bergeron	8.25	\$145.00	\$1,196.25
Sub-Total December Fees				\$102,670.00
Sub-Total Fees				\$102,670.00
Sub-Total Expenses				\$31,297.25

<b>Total</b>	<b>USD</b>	<b>\$133,967.25</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT - Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

## Expenses

### Subcontractor Fees

Date	Description	Amount
11/30/2019	1940 - ERS work for "Task.11 Combined Heat and Power (CHP)" in October and November (see Excel timesheets for details)	\$4,690.00
12/31/2019	1940 - ERS work for "Task.11 Combined Heat and Power (CHP)" in December (see Excel timesheets for details)	\$7,502.50
12/31/2019	1940 - Loris Lewis work in oct, nov, and dec for "task 6.3 Program Characterization" (\$12,505,50) and for "task 8.1 Economic and Baseline Inputs" (\$6,599,25). See Excel timesheets for details	\$19,104.75

**Total Expenses****\$31,297.25**

February 20, 2020

**National Grid**  
**40 Sylvan Road**  
**Waltham, MA 02451**

**USA**

**Attention: Mike Guerard, Managing consultant**

**Re: RI EERMC\_Potential Study**

January 2020	Resource	Hours	Rate	Amount
Task 10.1 Residential Electrification MC	Francois Bergeron	2.50	\$145.00	\$362.50
Task 10.1 Residential Electrification MC	Jasmine Lyn	7.75	\$125.00	\$968.75
Task 10.1 Residential Electrification MC	Nick Martin	1.75	\$180.00	\$315.00
Task 10.2 Commercial Electrification MC	Anirudh Kshemendranath	7.50	\$180.00	\$1,350.00
Task 10.2 Commercial Electrification MC	Jean-Philippe Hardy	0.75	\$225.00	\$168.75
Task 10.3 QC	Nick Martin	39.75	\$180.00	\$7,155.00
Task 11 Combined Heat and Power (CHP)	Ahmed Hanafy	4.50	\$185.00	\$832.50
Task 11 Combined Heat and Power (CHP)	Nick Martin	20.50	\$180.00	\$3,690.00
Task 12 Solar (DG)	Ahmed Hanafy	15.75	\$185.00	\$2,913.75
Task 12 Solar (DG)	Anirudh Kshemendranath	25.75	\$180.00	\$4,635.00
Task 12 Solar (DG)	Francois Bergeron	11.75	\$145.00	\$1,703.75
Task 13.3 Model Documentation	Ahmed Hanafy	0.25	\$185.00	\$46.25
Task 2 Draft Results	Nick Martin	78.00	\$180.00	\$14,040.00
Task 4 Internal KOM	Anirudh Kshemendranath	4.25	\$180.00	\$765.00
Task 5.2 Project Coordination	Alex Hill	9.25	\$250.00	\$2,312.50
Task 5.2 Project Coordination	David Baumann	2.00	\$180.00	\$360.00
Task 5.2 Project Coordination	Francois Bergeron	1.75	\$145.00	\$253.75
Task 5.2 Project Coordination	Jon Soehl	17.50	\$180.00	\$3,150.00
Task 5.2 Project Coordination	Nick Martin	14.50	\$180.00	\$2,610.00
Task 6.2 Commercial EE MC	Anirudh Kshemendranath	1.75	\$180.00	\$315.00
Task 6.2 Commercial EE MC	Ginette Riopelle	9.25	\$185.00	\$1,711.25
Task 6.2 Commercial EE MC	Jean-Philippe Hardy	1.50	\$225.00	\$337.50
Task 6.2 Commercial EE MC	Jon Soehl	4.00	\$180.00	\$720.00
Task 6.2 Commercial EE MC	Stephanie Willis	18.00	\$145.00	\$2,610.00
Task 6.3 Program Characterization	Alex Hill	3.00	\$250.00	\$750.00
Task 6.3 Program Characterization	Claire Cameron	16.50	\$145.00	\$2,392.50
Task 6.3 Program Characterization	David Baumann	24.25	\$180.00	\$4,365.00
Task 7.2 Commercial Market Data	Alex Hill	2.25	\$250.00	\$562.50
Task 7.2 Commercial Market Data	Nick Martin	1.25	\$180.00	\$225.00
Task 7.3 Residential Market Characterization	Stephanie Willis	1.00	\$145.00	\$145.00

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Task 7.4 Commercial Market Characterization	Jon Soehl	21.00	\$180.00	\$3,780.00
Task 8.1 Economic and Baseline Inputs	Ahmed Hanafy	0.75	\$185.00	\$138.75
Task 8.1 Economic and Baseline Inputs	David Baumann	15.00	\$180.00	\$2,700.00
Task 8.1 Economic and Baseline Inputs	Nick Martin	2.00	\$180.00	\$360.00
Task 8.2 QC integration tool modification	Brent Langille	14.00	\$180.00	\$2,520.00
Task 8.4 Model Integration / QC	Alex Hill	16.00	\$250.00	\$4,000.00
Task 8.4 Model Integration / QC	Anirudh Kshemendranath	4.50	\$180.00	\$810.00
Task 8.4 Model Integration / QC	Brent Langille	57.50	\$180.00	\$10,350.00
Task 8.4 Model Integration / QC	Francois Bergeron	8.25	\$145.00	\$1,196.25
Task 8.4 Model Integration / QC	Jon Soehl	7.50	\$180.00	\$1,350.00
Task 8.4 Model Integration / QC	Nick Martin	1.00	\$180.00	\$180.00
Task 8.4 Model Integration / QC	Stephanie Willis	58.50	\$145.00	\$8,482.50
Task 9.1 DR Measure Characterization	Claire Cameron	9.00	\$145.00	\$1,305.00
Task 9.1 DR Measure Characterization	Jean-Philippe Hardy	1.00	\$225.00	\$225.00
Task 9.1 DR Measure Characterization	Karine Cazorla	25.25	\$165.00	\$4,166.25
Task 9.2 DR Modelling	Francois Bergeron	30.00	\$145.00	\$4,350.00
Task 9.2 DR Modelling	Karine Cazorla	0.75	\$165.00	\$123.75
Sub-Total January Fees				\$107,803.75
Sub-Total Fees				\$107,803.75
Sub-Total Expenses				\$675.25

<b>Total</b>	<b>USD</b>	<b>\$108,479.00</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT  
Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

## Detailed Time Entries

### Task 10.1 Residential Electrification MC

Resource	Date	Hours	Description
Francois Bergeron	1/03/20	2.00	Propane measure adjustment (new propane info for efficiencies and markets)
Francois Bergeron	1/10/20	0.50	Internal Meeting - Update to methodology following client's meeting earlier this week
Jasmine Lyn	1/10/20	2.75	residential electrification work for the model
Jasmine Lyn	1/13/20	2.50	heating measures
Jasmine Lyn	1/13/20	0.50	initial call w Nick
Jasmine Lyn	1/14/20	2.00	heating measures
Nick Martin	1/02/20	0.50	check-in with Alex
Nick Martin	1/13/20	1.25	Walk-through of HE template with Jasmine and Steph
Sub-Total		12.00	

### Task 10.2 Commercial Electrification MC

Resource	Date	Hours	Description
Anirudh Kshemendranath	1/02/20	2.00	Fuel Switching
Anirudh Kshemendranath	1/10/20	0.50	Fuel Switching
Anirudh Kshemendranath	1/20/20	0.50	Fuel Switching
Anirudh Kshemendranath	1/21/20	4.50	Fuel Switching
Jean-Philippe Hardy	1/29/20	0.75	Meetings w/SW on FS measures
Sub-Total		8.25	

### Task 10.3 QC

Resource	Date	Hours	Description
Nick Martin	1/02/20	3.00	QC res/com electrification measures, additional revisions
Nick Martin	1/03/20	3.00	QC res/com electrification measures, additional revisions
Nick Martin	1/07/20	0.25	HE approach review call
Nick Martin	1/10/20	4.00	Call with Brattle re: aligning assumptions; call with Frank, Anirudh, Jasmine re: next steps; call with Alex re: model changes; call with Stephanie re: adding new HE measures
Nick Martin	1/11/20	4.00	residential measure set up, revised approach
Nick Martin	1/12/20	4.00	residential measure set up, revised approach
Nick Martin	1/13/20	1.25	Res market QC
Nick Martin	1/14/20	0.25	Res QC with Jasmine
Nick Martin	1/14/20	4.00	commercial MC QC
Nick Martin	1/15/20	3.50	Commercial MC call with Anirudh; residential markets and ancillary
Nick Martin	1/15/20	1.50	Ancillary data QC and additions
Nick Martin	1/16/20	2.00	Residential QC

### Detailed Time Entries

Nick Martin	1/19/20	1.00	residential QC
Nick Martin	1/19/20	1.00	commercial markets QC
Nick Martin	1/24/20	5.00	HE model QC
Nick Martin	1/28/20	1.00	Results QC
Nick Martin	1/29/20	1.00	Results QC
Sub-Total		39.75	

### Task 11 Combined Heat and Power (CHP)

Resource	Date	Hours	Description
Ahmed Hanafy	1/10/20	0.75	CHP modeling framework + prep + meeting with NM
Ahmed Hanafy	1/13/20	0.25	Model framework
Ahmed Hanafy	1/21/20	1.00	Review model + call with Nick
Ahmed Hanafy	1/22/20	0.25	CHP model
Ahmed Hanafy	1/24/20	0.25	CHP model
Ahmed Hanafy	1/29/20	0.75	CHP model + Call with Nick
Ahmed Hanafy	1/30/20	1.25	CHP Model QC and Calibration + call with Nick
Nick Martin	1/06/20	0.50	Call with Daniel Tukey, NGrid re: CHP potential methodology
Nick Martin	1/10/20	0.50	CHP model revisions meeting with Ahmed
Nick Martin	1/14/20	1.25	Call with ERS re: status update; data issues and data updates
Nick Martin	1/18/20	5.75	adoption modeling
Nick Martin	1/19/20	4.00	chp adoption
Nick Martin	1/20/20	0.50	Call with ERS re: CHP results
Nick Martin	1/21/20	2.00	Call with A. Hanafy re: CHP adoption QC; CHP adoption tool modifications
Nick Martin	1/27/20	1.50	Adoption QC
Nick Martin	1/28/20	2.00	Adoption QC
Nick Martin	1/29/20	0.50	Call with A. Hanafy re: adoption QC
Nick Martin	1/29/20	2.00	Results reporting
Sub-Total		25.00	

### Task 12 Solar (DG)

Resource	Date	Hours	Description
Ahmed Hanafy	1/06/20	1.00	Review solar measure characterization from AK
Ahmed Hanafy	1/06/20	1.00	Meeting with AK and FB
Ahmed Hanafy	1/07/20	0.50	Review Grant program data from DOER
Ahmed Hanafy	1/07/20	1.00	Prep + Check-in meeting
Ahmed Hanafy	1/08/20	0.25	Scenarios

### Detailed Time Entries

Ahmed Hanafy	1/09/20	1.00	Scenarios + Market Research
Ahmed Hanafy	1/10/20	0.25	Scenarios
Ahmed Hanafy	1/13/20	0.50	Workplan updates
Ahmed Hanafy	1/13/20	0.50	Model inputs
Ahmed Hanafy	1/14/20	0.50	Scenarios
Ahmed Hanafy	1/16/20	0.25	Follow-up with AK on solar inputs
Ahmed Hanafy	1/17/20	0.25	Check-in on storage data + misc.
Ahmed Hanafy	1/19/20	0.25	QC Solar inputs
Ahmed Hanafy	1/20/20	0.50	Meeting with FB and AK
Ahmed Hanafy	1/20/20	0.50	Review solar inputs
Ahmed Hanafy	1/22/20	0.50	Client check-in meeting
Ahmed Hanafy	1/24/20	0.50	Calibration
Ahmed Hanafy	1/26/20	2.50	Inputs QC + Residential Calibration
Ahmed Hanafy	1/27/20	0.75	QC inputs + calibration model
Ahmed Hanafy	1/27/20	0.50	Check-in meeting with FB and AK
Ahmed Hanafy	1/29/20	2.00	Residential calibration (NEM and REG)
Ahmed Hanafy	1/31/20	0.75	Review C&I Data
Anirudh Kshemendranath	1/03/20	0.75	Data Collection
Anirudh Kshemendranath	1/05/20	2.50	Data Collection: Solar
Anirudh Kshemendranath	1/06/20	2.00	Data Collection: Model Calibration
Anirudh Kshemendranath	1/08/20	1.50	Data Collection
Anirudh Kshemendranath	1/14/20	1.00	Data Collection
Anirudh Kshemendranath	1/16/20	5.50	Data Collection
Anirudh Kshemendranath	1/17/20	5.50	Data Collection
Anirudh Kshemendranath	1/24/20	6.00	Data Collection
Anirudh Kshemendranath	1/29/20	0.75	Data Collection
Anirudh Kshemendranath	1/29/20	0.25	Model Set up
Francois Bergeron	1/02/20	0.25	Checking on solar
Francois Bergeron	1/03/20	0.50	Follow up on solar
Francois Bergeron	1/06/20	1.00	Meeting - Update on inputs
Francois Bergeron	1/20/20	0.50	Weekly meeting - Input, calibration & scenarios
Francois Bergeron	1/24/20	2.00	Data Input QC
Francois Bergeron	1/24/20	1.00	Residential model setup
Francois Bergeron	1/25/20	1.50	Solar model setup
Francois Bergeron	1/27/20	0.50	Showing Anirudh the model calibration



### Detailed Time Entries

Francois Bergeron	1/27/20	0.50	RI Solar weekly followup
Francois Bergeron	1/27/20	0.50	Input QC
Francois Bergeron	1/28/20	1.50	REG allocation vs installed + NEM vs REG payback for participants
Francois Bergeron	1/28/20	1.00	Update RI Input file
Francois Bergeron	1/28/20	1.00	Find historical REM allocation data
Sub-Total		53.25	

### Task 13.3 Model Documentation

Resource	Date	Hours	Description
Ahmed Hanafy	1/20/20	0.25	Solar output framework
Sub-Total		0.25	

### Task 2 Draft Results

Resource	Date	Hours	Description
Nick Martin	1/02/20	4.00	building out reporting tool
Nick Martin	1/03/20	2.00	building out reporting tool
Nick Martin	1/07/20	1.75	Reporting tool development
Nick Martin	1/08/20	2.50	Inputs and assumptions methodology write up, HE methodology write up
Nick Martin	1/09/20	1.00	Reporting tool development
Nick Martin	1/10/20	0.50	HE methodology write up
Nick Martin	1/13/20	2.00	Building out reporting tool and graph tool
Nick Martin	1/15/20	1.00	Data table set up
Nick Martin	1/16/20	2.00	Methodologies
Nick Martin	1/16/20	3.00	graphs and tables
Nick Martin	1/17/20	4.00	Developing graphs and tables
Nick Martin	1/20/20	3.00	reporting tool
Nick Martin	1/20/20	2.00	integrating program benchmarks into reporting tool
Nick Martin	1/21/20	4.00	Reporting tool development
Nick Martin	1/22/20	4.00	Reporting tool development, slide development
Nick Martin	1/23/20	0.75	Call with A. Hill re: story boarding draft results presentation
Nick Martin	1/23/20	4.00	Reporting tool development, slide development
Nick Martin	1/24/20	2.00	Reporting tool development, slide development
Nick Martin	1/25/20	1.50	Setting up data table generation code
Nick Martin	1/26/20	6.00	Graphs and tables
Nick Martin	1/27/20	4.00	Results preparation and general QC
Nick Martin	1/28/20	3.00	Results preparation and general QC

#### Dunsky Energy Consulting

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### Detailed Time Entries

Nick Martin	1/29/20	2.00	Results preparation and general QC
Nick Martin	1/30/20	10.00	Results preparation and general QC
Nick Martin	1/31/20	8.00	Draft results preparations
Sub-Total		78.00	

### Task 4 Internal KOM

Resource	Date	Hours	Description
Anirudh Kshemendranath	1/07/20	1.00	Check in Meeting
Anirudh Kshemendranath	1/15/20	0.50	Call with Jon
Anirudh Kshemendranath	1/15/20	0.50	Call with Nick
Anirudh Kshemendranath	1/20/20	0.50	Check in Meeting
Anirudh Kshemendranath	1/21/20	1.00	Check in Call
Anirudh Kshemendranath	1/27/20	0.75	Calibration Call
Sub-Total		4.25	

### Task 5.2 Project Coordination

Resource	Date	Hours	Description
Alex Hill	1/02/20	2.00	discuss heat pumps and team update
Alex Hill	1/06/20	1.00	QC and weekly check in
Alex Hill	1/09/20	1.00	HE meeting
Alex Hill	1/10/20	1.00	discuss various questions and planning for scenarios
Alex Hill	1/13/20	2.00	internal weekly check in and call with am Ross, and follow up
Alex Hill	1/19/20	0.25	CHP results
Alex Hill	1/20/20	0.50	CHP results meeting
Alex Hill	1/22/20	1.50	QC tool rev + check in call
David Baumann	1/07/20	1.25	Project Coordination meeting
David Baumann	1/15/20	0.50	Reporting work for N.Martin
David Baumann	1/17/20	0.25	Forecasts development
Francois Bergeron	1/07/20	1.00	Team meeting
Francois Bergeron	1/21/20	0.75	Weekly meeting
Jon Soehl	1/06/20	2.00	General
Jon Soehl	1/07/20	3.00	Coordination Meeting/Prep
Jon Soehl	1/08/20	2.00	General
Jon Soehl	1/09/20	2.50	Benchmark Load Discussions
Jon Soehl	1/10/20	2.00	General
Jon Soehl	1/14/20	1.00	General Coordination

### Detailed Time Entries

Jon Soehl	1/15/20	1.00	General Coordination
Jon Soehl	1/16/20	1.00	General Coordination
Jon Soehl	1/17/20	1.00	General Coordination
Jon Soehl	1/21/20	1.00	Meeting
Jon Soehl	1/22/20	1.00	General
Nick Martin	1/03/20	2.00	data follow ups, review and integration into treatment code
Nick Martin	1/06/20	0.50	Planning and emails
Nick Martin	1/06/20	0.50	Check-in meeting with Alex / Jon
Nick Martin	1/07/20	1.50	Analyst team check-in, follow-ups
Nick Martin	1/07/20	0.25	Billing review / questions from Sophie
Nick Martin	1/08/20	1.50	Memo feedback review
Nick Martin	1/08/20	0.75	HE presentation slides updates
Nick Martin	1/09/20	1.75	HE methodology meeting + follow-up call w/ Alex
Nick Martin	1/13/20	0.25	subcontractor invoices
Nick Martin	1/13/20	0.25	subcontractor invoicecs
Nick Martin	1/13/20	0.25	TRM issues, email to Grid
Nick Martin	1/13/20	0.50	Check in meeting with Alex and Jon
Nick Martin	1/13/20	0.25	e-mail follow-ups
Nick Martin	1/17/20	1.00	Subcontractor invoicing, general issues and QC
Nick Martin	1/20/20	1.00	meeting agenda, heat pump assumptions email to brattle, TRM questions
Nick Martin	1/20/20	0.50	Weekly check-in meeting with A.Hill and J. Soehl
Nick Martin	1/21/20	0.50	Analyst team check-in meeting
Nick Martin	1/22/20	0.50	Check-in call with MPSMT
Nick Martin	1/22/20	0.50	Travel arrangements
Nick Martin	1/23/20	0.25	Follow-up with OER on solar scenarios
Sub-Total		45.00	

### Task 6.2 Commercial EE MC

Resource	Date	Hours	Description
Anirudh Kshemendranath	1/02/20	1.50	Measure Characterization
Anirudh Kshemendranath	1/03/20	0.25	Measure Characterization
Ginette Riopelle	1/05/20	4.75	QC commercial measures; commercial measures characterization
Ginette Riopelle	1/06/20	2.00	Commercial measure characterization
Ginette Riopelle	1/07/20	1.00	commercial measure characterization
Ginette Riopelle	1/16/20	1.50	Commercial gas measures characterization

### Detailed Time Entries

Jean-Philippe Hardy	1/13/20	1.00	Meeting w/ SW and FB on peak demand savings calculations
Jean-Philippe Hardy	1/22/20	0.25	Meeting w/Steph on wi-fi t-stat
Jean-Philippe Hardy	1/30/20	0.25	Meeting with JS on heating measures
Jon Soehl	1/03/20	2.00	QC
Jon Soehl	1/06/20	2.00	Measure QC
Stephanie Willis	1/07/20	1.50	ancillary data
Stephanie Willis	1/09/20	2.50	Ancillary data. Discussion on how to deal with CFs.
Stephanie Willis	1/10/20	2.75	Ancillary data and mapping measures
Stephanie Willis	1/10/20	0.50	Coordination on heating electrification
Stephanie Willis	1/10/20	4.50	ancillary data
Stephanie Willis	1/13/20	1.00	Meeting with Frank and JP on strategy for CFs
Stephanie Willis	1/14/20	0.75	Pulling CFs into results
Stephanie Willis	1/15/20	1.00	Updating WOP/WP/SOP/SP with new data from the client.
Stephanie Willis	1/16/20	1.00	Pulling keys for heating electrification measures through the templates.
Stephanie Willis	1/20/20	0.50	Investigating issues with NEI's for commercial electric food service measures.
Stephanie Willis	1/20/20	1.50	Mapping commercial measures to correct programs
Stephanie Willis	1/23/20	0.50	Ancillary data for heating electrification measures
Sub-Total		34.50	

### Task 6.3 Program Characterization

Resource	Date	Hours	Description
Alex Hill	1/08/20	2.00	respond to memo comments
Alex Hill	1/09/20	1.00	send memo comments back to MPSMT
Claire Cameron	1/12/20	2.50	Program characterization
Claire Cameron	1/13/20	1.50	Program characterization
Claire Cameron	1/16/20	2.50	Check-in meeting with Karine
Claire Cameron	1/21/20	2.75	Reviewing program costs
Claire Cameron	1/22/20	2.50	Cost review with Karine, research
Claire Cameron	1/23/20	0.25	Pro
Claire Cameron	1/24/20	2.00	Reviewing current deployments of AMI, HAN and AMI technologies/communcation protocol requirements
Claire Cameron	1/29/20	1.75	Check-in meeting with Alex & follow-up
Claire Cameron	1/30/20	0.75	Review of per customer fixed costs
David Baumann	1/09/20	3.00	Program Characterization Cleanup and Finalize
David Baumann	1/10/20	3.25	Program Characterization Cleanup and Finalize

### Detailed Time Entries

David Baumann	1/14/20	2.00	Inputs analysis
David Baumann	1/17/20	4.25	Program Characterization Mapping and Input dev
David Baumann	1/20/20	6.25	Program Characterization Input Characterization
David Baumann	1/24/20	2.50	Program Characterization Inputs finalize
David Baumann	1/28/20	2.50	Program Mapping
David Baumann	1/29/20	0.50	Characterization Edits
<b>Sub-Total</b>		<b>43.75</b>	

### Task 7.2 Commercial Market Data

Resource	Date	Hours	Description
Alex Hill	1/07/20	1.50	QC market data
Alex Hill	1/09/20	0.75	discuss heating loads
Nick Martin	1/07/20	1.00	Metric data review, heating penetration
Nick Martin	1/09/20	0.25	Heating metrics follow up
<b>Sub-Total</b>		<b>3.50</b>	

### Task 7.3 Residential Market Characterization

Resource	Date	Hours	Description
Stephanie Willis	1/21/20	1.00	Determining approach to central heating and cooling systems in MF buildings.
<b>Sub-Total</b>		<b>1.00</b>	

### Task 7.4 Commercial Market Characterization

Resource	Date	Hours	Description
Jon Soehl	1/02/20	7.00	HVAC/Lighting Market Characterization
Jon Soehl	1/03/20	5.50	Commercial Market Characterization
Jon Soehl	1/06/20	4.00	QC
Jon Soehl	1/07/20	4.50	QC
<b>Sub-Total</b>		<b>21.00</b>	

### Task 8.1 Economic and Baseline Inputs

Resource	Date	Hours	Description
Ahmed Hanafy	1/24/20	0.75	Rates/Avoided costs QC
David Baumann	1/06/20	2.00	Forecasts updates
David Baumann	1/07/20	1.25	RI Forecasts updates
David Baumann	1/08/20	2.50	Economic Inputs feedback responses
David Baumann	1/09/20	2.75	Economic Inputs responses to client
David Baumann	1/10/20	0.75	Economic Inputs Responses to Client

### Detailed Time Entries

David Baumann	1/14/20	0.25	Forecasts reconciliation with F.Bergeron
David Baumann	1/15/20	3.50	AC disaggregation for N.Martin
David Baumann	1/27/20	2.00	Avoided Costs updates
Nick Martin	1/06/20	1.00	Baseline changes QC
Nick Martin	1/09/20	0.50	AC rate feedback QC
Nick Martin	1/25/20	0.50	Updated energy DRIPE values
Sub-Total		17.75	

### Task 8.2 QC integration tool modification

Resource	Date	Hours	Description
Brent Langille	1/06/20	6.00	edit tables
Brent Langille	1/07/20	8.00	edit tables
Sub-Total		14.00	

### Task 8.4 Model Integration / QC

Resource	Date	Hours	Description
Alex Hill	1/21/20	1.50	review results
Alex Hill	1/23/20	2.00	story board presentation and QC tool rev
Alex Hill	1/29/20	3.00	EE and DR results meetings
Alex Hill	1/30/20	3.00	review model savings
Alex Hill	1/31/20	6.50	results QC
Anirudh Kshemendranath	1/03/20	4.50	Quality Check
Brent Langille	1/08/20	8.50	load residential and commercial sectors
Brent Langille	1/09/20	8.25	load residential and commercial sectors
Brent Langille	1/10/20	9.25	load residential and commercial sectors
Brent Langille	1/14/20	7.50	model running
Brent Langille	1/15/20	7.50	model running
Brent Langille	1/16/20	7.00	model running
Brent Langille	1/30/20	1.25	run model
Brent Langille	1/31/20	8.25	run scenarios, discuss BCA testing
Francois Bergeron	1/07/20	1.00	HRV measure update
Francois Bergeron	1/14/20	1.50	Correction on DMSHP low income market + attribute.HRF
Francois Bergeron	1/14/20	0.50	Model run briefing with Brent (lead for EE model)
Francois Bergeron	1/15/20	0.75	Pensat data for various measures/markets is at 0. Master list needs update.
Francois Bergeron	1/29/20	2.00	Error corrections from QC and Attic/Wall/Basement insulation check

### Detailed Time Entries

Francois Bergeron	1/30/20	1.25	Error corrections from QC - EUL on Tstats and boilers + WiFi Tstats on central heating systems
Francois Bergeron	1/30/20	1.25	Updated markets for CAC including RM0171 (share of Central AC used by single user)
Jon Soehl	1/23/20	1.00	QC
Jon Soehl	1/24/20	6.50	QC
Nick Martin	1/08/20	1.00	QC of RR and SPF inputs, ACs generally
Stephanie Willis	1/08/20	5.00	Preparing inputs for model run.
Stephanie Willis	1/08/20	0.75	Ancillary data edits and refresh
Stephanie Willis	1/09/20	0.50	Coordination on commercial measures.
Stephanie Willis	1/13/20	3.25	Dealing with various issues on the model inputs for both residential and commercial.
Stephanie Willis	1/14/20	1.00	Responding to ancillary data issues
Stephanie Willis	1/14/20	1.25	Model run
Stephanie Willis	1/15/20	0.25	Model run
Stephanie Willis	1/15/20	3.25	QC edits to ancillary data
Stephanie Willis	1/16/20	4.00	Fixes to commercial market. Responding to questions on commercial measure, Residential model run. Commercial model run.
Stephanie Willis	1/16/20	0.75	Scaling up energy savings percentages that don't equal 1.
Stephanie Willis	1/17/20	1.00	Tracking down source of reflector measures having no savings.
Stephanie Willis	1/17/20	1.50	Mapping NEI's and adding required fields to add them to commercial ancillary.
Stephanie Willis	1/17/20	1.00	Pulling NEI's into commercial ancillary data
Stephanie Willis	1/20/20	1.00	Finding source of commercial result issue and rerunning model with it fixed.
Stephanie Willis	1/20/20	0.75	Checking why 3 residential propane measures are not screening when they should be.
Stephanie Willis	1/20/20	1.75	Getting commercial NEIs working. Model run.
Stephanie Willis	1/20/20	0.50	Model run with real program inputs.
Stephanie Willis	1/21/20	0.75	Looking into issue with NEI's for gas food service measures.
Stephanie Willis	1/21/20	0.50	Updating NEI's based on feedback from National Grid.
Stephanie Willis	1/22/20	0.50	Resolving issues with hot water measures.
Stephanie Willis	1/22/20	4.50	Correcting issues in commercial measure. Preparing wrangler for model run.
Stephanie Willis	1/23/20	0.50	Adding metric on shared CAC systems.
Stephanie Willis	1/23/20	1.00	Reviewing high TRC for dishwasher measure.
Stephanie Willis	1/23/20	1.00	Establishing cause of erroneous demand savings for residential heating electrification measures.
Stephanie Willis	1/27/20	4.50	Ancillary for commercial HE measures. Review of EMS measure. Reviewing commercial HE CF's. Model run.
Stephanie Willis	1/27/20	0.25	Reviewing annual cooling load assumption.

**Dunsky Energy Consulting**

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### Detailed Time Entries

Stephanie Willis	1/28/20	3.50	Solving issues with res tstat measures and with HRV CF.
Stephanie Willis	1/28/20	0.25	Adjusting food service, kitchen barriers.
Stephanie Willis	1/28/20	2.25	ERV measure issues.
Stephanie Willis	1/29/20	9.00	QCing commercial space heating electrification measures, responding to issues on residential measures, re ancillary and commercial ancillary. Model run.
Stephanie Willis	1/31/20	2.50	Understanding low commercial heat pump numbers. Re-running the model.
<b>Sub-Total</b>		<b>153.25</b>	

### Task 9.1 DR Measure Characterization

Resource	Date	Hours	Description
Claire Cameron	1/06/20	4.75	Measure opt-out rates, connection failure rates, incentives.
Claire Cameron	1/07/20	1.75	DR research
Claire Cameron	1/08/20	1.25	DR research
Claire Cameron	1/10/20	1.25	Call with Karine
Jean-Philippe Hardy	1/27/20	0.75	Meeting w/KC for commercial DR measures
Jean-Philippe Hardy	1/29/20	0.25	Meeting w/KC for commercial DR measures
Karine Cazorla	1/02/20	2.50	Residential DR measure characterization
Karine Cazorla	1/03/20	2.50	Residential DR measure characterization
Karine Cazorla	1/06/20	3.25	DR Measure Characterization
Karine Cazorla	1/07/20	1.00	Weekly Meeting
Karine Cazorla	1/07/20	3.25	DR Measure Characterization
Karine Cazorla	1/08/20	3.00	DR Measure Characterization
Karine Cazorla	1/08/20	0.25	DR Measure Characterization
Karine Cazorla	1/13/20	8.00	DR project management & DR program characterization
Karine Cazorla	1/21/20	1.50	Weekly Meeting & DR management
<b>Sub-Total</b>		<b>35.25</b>	

### Task 9.2 DR Modelling

Resource	Date	Hours	Description
Francois Bergeron	1/02/20	0.50	DLC interaction with TOU - approach
Francois Bergeron	1/06/20	2.00	8760 + wrangler corrections for enduse breakdown
Francois Bergeron	1/06/20	0.50	DR update meeting
Francois Bergeron	1/07/20	1.00	impact of EE on utility load shape
Francois Bergeron	1/07/20	3.00	impact of EV & DG (solar) on utility load shape
Francois Bergeron	1/07/20	2.50	Add absolute value as import to load analysis tool (for National Grid forecast -> EE, EV & DG impact)



**Detailed Time Entries**

Francois Bergeron	1/08/20	1.25	DR meeting - End Use + Appliance load shape discussion
Francois Bergeron	1/14/20	1.50	Update industrial loads based on NECO data
Francois Bergeron	1/15/20	0.50	Discussion on industrial approach and modelling
Francois Bergeron	1/16/20	4.00	DR model run - 1st run with characterization
Francois Bergeron	1/17/20	1.00	Review of preliminary (1st run) results
Francois Bergeron	1/20/20	0.50	Meeting - DR Scenarios
Francois Bergeron	1/21/20	0.50	Discussion on modelling - Outputs
Francois Bergeron	1/23/20	1.25	Meeting with Karine for changes to Characterization and modelling
Francois Bergeron	1/27/20	3.00	Modifications to inputs for RI
Francois Bergeron	1/28/20	4.00	Model run for draft results
Francois Bergeron	1/29/20	1.50	Preliminary results internal meeting
Francois Bergeron	1/30/20	0.50	Discussion on Comm. Curtailment and auto-DR + Ouput
Francois Bergeron	1/31/20	1.00	Internal results discussion
Karine Cazorla	1/21/20	0.75	Modelling Tool Adjustment
Sub-Total		30.75	

**Expenses**

**Subcontractor Fees**

<u>Date</u>	<u>Description</u>	<u>Amount</u>
1/31/2020	1940 - ERS work for "Task.11 Combined Heat and Power (CHP)" in January (see Excel timesheets for details)	\$675.25
<b>Total Expenses</b>		<b>\$675.25</b>

**National Grid  
40 Sylvan Road  
Waltham, MA 02451  
USA**

**Invoice 20-2892**

March 31, 2020

**Attention: Mike Guerard, Managing consultant**

**Re: RI EERMC\_Potential Study**

February 2020	Resource	Hours	Rate	Amount
Task 12 Solar (DG)	Ahmed Hanafy	9.50	\$185.00	\$1,757.50
Task 12 Solar (DG)	Anirudh Kshemendranath	15.25	\$180.00	\$2,745.00
Task 12 Solar (DG)	Francois Bergeron	5.00	\$145.00	\$725.00
Task 12 Solar (DG)	Karine Cazorla	1.00	\$165.00	\$165.00
Task 12 Solar (DG)	Nick Martin	0.75	\$180.00	\$135.00
Task 13.1 Draft Report	David Baumann	1.75	\$180.00	\$315.00
Task 13.1 Draft Report	Nick Martin	2.00	\$180.00	\$360.00
Task 13.2 Final Report	Karine Cazorla	1.50	\$165.00	\$247.50
Task 13.3 Model Documentation	Alex Hill	1.00	\$250.00	\$250.00
Task 2 Draft Results	Jon Soehl	17.00	\$180.00	\$3,060.00
Task 2 Draft Results	Nick Martin	32.00	\$180.00	\$5,760.00
Task 3 Final Results	Jean-Philippe Hardy	0.25	\$225.00	\$56.25
Task 3 Final Results	Jon Soehl	11.50	\$180.00	\$2,070.00
Task 3 Final Results	Nick Martin	17.00	\$180.00	\$3,060.00
Task 3 Final Results	Stephanie Willis	10.50	\$145.00	\$1,522.50
Task 5.2 Project Coordination	Alex Hill	0.75	\$250.00	\$187.50
Task 5.2 Project Coordination	Francois Bergeron	0.50	\$145.00	\$72.50
Task 5.2 Project Coordination	Nick Martin	8.50	\$180.00	\$1,530.00
Task 8.1 Economic and Baseline Inputs	David Baumann	1.00	\$180.00	\$180.00
Task 8.4 Model Integration / QC	Alex Hill	19.50	\$250.00	\$4,875.00
Task 8.4 Model Integration / QC	Brent Langille	1.00	\$180.00	\$180.00
Task 8.4 Model Integration / QC	David Baumann	0.50	\$180.00	\$90.00
Task 8.4 Model Integration / QC	Stephanie Willis	1.25	\$145.00	\$181.25
Sub-Total February Fees				\$29,525.00
Sub-Total Fees				\$29,525.00

<b>Total</b>	<b>USD \$29,525.00</b>
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PAYABLE WITHIN 30 DAYS OF RECEIPT  
Internal Project Number: 1940

GST/HST #: 827843954  
PST #: 1213821713

## Detailed Time Entries

### Task 12 Solar (DG)

Resource	Date	Hours	Description
Ahmed Hanafy	2/03/20	1.25	QC Inputs + Planning + prep + check-in meeting with AK and FB
Ahmed Hanafy	2/03/20	0.25	QC Residential model outputs
Ahmed Hanafy	2/04/20	0.25	QC Preliminary results
Ahmed Hanafy	2/05/20	2.00	QC C&I inputs (Costs, system size) + REG Payback checks
Ahmed Hanafy	2/06/20	2.00	Residential QC + QC C&I Inputs
Ahmed Hanafy	2/07/20	1.50	Combined NEM+REG Update
Ahmed Hanafy	2/10/20	0.50	Meeting with FB and AK
Ahmed Hanafy	2/10/20	0.25	Planning + cost-effectiveness + program costs
Ahmed Hanafy	2/17/20	0.50	System sizing + Non-res calibration
Ahmed Hanafy	2/18/20	0.50	Check-in call with FB and AK
Ahmed Hanafy	2/21/20	0.50	Solar reporting tool + Storage results
Anirudh Kshemendranath	2/03/20	3.50	Model Set up
Anirudh Kshemendranath	2/04/20	2.50	Model Set up
Anirudh Kshemendranath	2/07/20	1.00	Model Set up
Anirudh Kshemendranath	2/17/20	0.75	Model Set up
Anirudh Kshemendranath	2/18/20	0.50	Model Set up
Anirudh Kshemendranath	2/18/20	1.00	Model Set up
Anirudh Kshemendranath	2/19/20	2.50	Energy Storage Modelling
Anirudh Kshemendranath	2/20/20	3.50	Energy Storage Modelling
Francois Bergeron	2/03/20	0.50	Weekly update meeting
Francois Bergeron	2/10/20	0.50	Weekly meeting
Francois Bergeron	2/12/20	1.00	Non-Res. calibration
Francois Bergeron	2/18/20	0.50	Solar check-in meeting
Francois Bergeron	2/18/20	0.50	Helped Anirudh commit solar model changes for RI specifics
Francois Bergeron	2/18/20	2.00	Solar forecast impact on utility peak load
Karine Cazorla	2/18/20	1.00	Support
Nick Martin	2/06/20	0.75	Call with A. Hanafy re: solar module next tasks.
<b>Sub-Total</b>		<b>31.50</b>	

### Task 13.1 Draft Report

Resource	Date	Hours	Description
David Baumann	2/18/20	0.50	Methodology reporting
David Baumann	2/19/20	1.25	Draft reporting methodology
Nick Martin	2/10/20	2.00	Reporting tool revisions

### Detailed Time Entries

Sub-Total 3.75

#### Task 13.2 Final Report

Resource	Date	Hours	Description
Karine Cazorla	2/20/20	1.00	Review NG comments
Karine Cazorla	2/21/20	0.50	Emails
Sub-Total		1.50	

#### Task 13.3 Model Documentation

Resource	Date	Hours	Description
Alex Hill	2/15/20	1.00	review appendices
Sub-Total		1.00	

#### Task 2 Draft Results

Resource	Date	Hours	Description
Jon Soehl	2/03/20	5.50	Preparation/Presentation
Jon Soehl	2/07/20	4.50	Measure/Market Presentation
Jon Soehl	2/08/20	3.00	Measure/Market Presentation
Jon Soehl	2/10/20	4.00	Market Meeting/Prep
Nick Martin	2/01/20	6.00	Draft results preparations
Nick Martin	2/02/20	6.00	Draft results preparations
Nick Martin	2/03/20	5.00	Draft results preparations
Nick Martin	2/03/20	3.50	Draft result presentation
Nick Martin	2/04/20	3.00	Draft results follow up
Nick Martin	2/05/20	2.75	Materials preparations and transmission
Nick Martin	2/06/20	3.50	Clarification call with MPS MT and National Grid + follow-up actions
Nick Martin	2/07/20	0.50	Program result data table
Nick Martin	2/09/20	0.50	Clarification call slides
Nick Martin	2/10/20	1.25	Clarification call, plus slides preparations
Sub-Total		49.00	

#### Task 3 Final Results

Resource	Date	Hours	Description
Jean-Philippe Hardy	2/20/20	0.25	Meeting w/SW for HRV measure
Jon Soehl	2/17/20	7.50	Feedback Review
Jon Soehl	2/18/20	4.00	Coordination
Nick Martin	2/12/20	2.50	Reviewing and responding to questions on baseline inputs

## Detailed Time Entries

Nick Martin	2/13/20	2.00	Call re: RI baseline data inputs + call preparations
Nick Martin	2/14/20	1.25	Revisions to RI baseline data calculations and checks based on DNV-GL summary tables
Nick Martin	2/14/20	0.25	Review market growth factors
Nick Martin	2/16/20	2.00	Revising reporting tool
Nick Martin	2/17/20	2.00	Review feedback, provide responses
Nick Martin	2/17/20	0.50	National Grid CHP Feedback Review
Nick Martin	2/18/20	1.25	Heating Electrification Updates
Nick Martin	2/18/20	2.00	updating reporting tool
Nick Martin	2/19/20	0.50	Feedback review
Nick Martin	2/20/20	0.50	Growth factors
Nick Martin	2/20/20	2.00	updating reporting tool
Nick Martin	2/28/20	0.25	Call w/ D. Baumann re: running reporting tool
Stephanie Willis	2/07/20	0.50	Notes on EM&V factors for measures.
Stephanie Willis	2/18/20	1.00	Coordination meeting
Stephanie Willis	2/19/20	1.00	Modifications to residential ancillary based on client feedback.
Stephanie Willis	2/20/20	6.75	Edits to LED tubes and luminaires measures. Edits to ERV measure. Edits to residential and commercial ancillary data based on client feedback. Refreshing all the inputs for the model run.
Stephanie Willis	2/21/20	1.00	Template admin. Removing ozone laundry measure in places with electric heating.
Stephanie Willis	2/24/20	0.25	Planning model runs.
Sub-Total		39.25	

## Task 5.2 Project Coordination

Resource	Date	Hours	Description
Alex Hill	2/10/20	0.50	weekly coord meeting
Alex Hill	2/14/20	0.25	review emails related to draft results
Francois Bergeron	2/18/20	0.50	Weekly Meeting - EE changes following draft feedback
Nick Martin	2/04/20	1.50	Draft results presentation follow-ups
Nick Martin	2/05/20	0.25	Travel and meeting plans
Nick Martin	2/05/20	0.25	Call with A. Hill re: travel plans, deliverables.
Nick Martin	2/06/20	0.25	Travel arrangements
Nick Martin	2/10/20	1.25	Check-in call with A. Hill and J. Soehl; invoicing review
Nick Martin	2/11/20	1.00	Cross-team coordination meeting
Nick Martin	2/11/20	0.25	Time sheet reviews
Nick Martin	2/14/20	1.00	Updating issue tracker, responding to emails
Nick Martin	2/18/20	1.00	Internal coordination meeting

### Detailed Time Entries

Nick Martin	2/19/20	0.25	Coordination
Nick Martin	2/21/20	1.00	Presentation prep call with A. Hill, S. Ross, M. Guerard
Nick Martin	2/21/20	0.50	Presentation prep call with S. Ross
Sub-Total		9.75	

### Task 8.1 Economic and Baseline Inputs

Resource	Date	Hours	Description
David Baumann	2/06/20	1.00	Prepare new rates and ACs for client review
Sub-Total		1.00	

### Task 8.4 Model Integration / QC

Resource	Date	Hours	Description
Alex Hill	2/01/20	4.00	slide prep.
Alex Hill	2/02/20	3.50	draft results
Alex Hill	2/03/20	7.00	draft results
Alex Hill	2/04/20	1.00	frameing results to send
Alex Hill	2/05/20	1.00	book travel
Alex Hill	2/06/20	1.50	call with RI team
Alex Hill	2/07/20	0.50	plan for presenting market approach on monday
Alex Hill	2/10/20	1.00	call with National Grid
Brent Langille	2/03/20	1.00	run scenarios
David Baumann	2/14/20	0.50	Benchmarking QAQC
Stephanie Willis	2/03/20	1.25	Checking residential gas results and commercial fuel switching results.
Sub-Total		22.25	