

Appendix J: Burden and Cost for Additional Sources of Fluorinated GHG (Subparts I, L, DD, QQ, SS)

Appendix J-1: Detailed Burden and Cost
Appendix J-2: Summary of Burden and Cost by Activity and Year
Appendix J-3: Change in Burden and Cost

J-1a: SUBPART I: ELECTRONICS MANUFACTURING (1) (2)

Source Category	Annual Burden & Cost, All Respondents											
	No. Respondents	Responses/ Respondent	Total Responses	Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
Non-Semiconductors	3	1	3	720.0	83.5	80.5	0.8	884.8	\$51,624	\$0	\$0	\$51,624
Large Semiconductors*	29	1	29	9,617.4	1,011.1	763.3	7.5	11,399.4	\$671,428	\$3,511,900	\$0	\$4,183,328
Non-Large Semiconductors	62	1	62	19,858.8	1,417.0	1,361.0	16.1	22,652.9	\$1,327,930	\$0	\$0	\$1,327,930
Total	94	1.0	94.0	30,196.3	2,511.6	2,204.8	24.4	34,937.1	\$2,050,981	\$3,511,900	\$0	\$5,562,881

(1) Does not include the burden or cost for provision of information on parent companies' NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).
 (2) EPA is currently updating certain provisions of subpart I. Those updates are reflected in the ICR for that rulemaking effort.

NON-SEMICONDUCTORS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	\$59.12	\$77.23	\$31.35	\$109.94	\$0
QA/OC	-	-	-	-	\$0
Recordkeeping	24.70	2.39	5.70	-	\$1,824
Sampling and Analysis (Calculations)	186.49	11.17	11.00	-	\$12,233
Reporting	28.82	14.26	10.14	0.26	\$3,152
Total	240.01	27.82	26.84	0.26	\$17,208

LARGE SEMICONDUCTORS*

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	\$59.12	\$77.23	\$31.35	\$109.94	\$0
QA/OC	-	-	-	-	\$0
Recordkeeping	24.70	2.39	5.70	-	\$1,824
Sampling and Analysis (Calculations)	246.14	18.18	10.32	-	\$16,279
Reporting	60.80	14.30	10.30	0.26	\$5,050
Total	331.64	34.87	26.32	0.26	\$23,153

*In addition, large semiconductors incur capital costs per facility of: \$121,100

NON-LARGE SEMICONDUCTORS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	\$59.12	\$77.23	\$31.35	\$109.94	\$0
QA/OC	-	-	-	-	\$0
Recordkeeping	24.70	2.39	5.70	-	\$1,824
Sampling and Analysis (Calculations)	266.78	6.21	6.11	-	\$16,443
Reporting	28.82	14.26	10.14	0.26	\$3,152
Total	320.30	22.86	21.95	0.26	\$21,418

J-1b: SUBPART L: FLUORINATED GHG PRODUCTION (1)

Source Category	Annual Burden & Cost, All Respondents											
	No. Respondents	Responses/ Respondent	Total Responses	Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
Process Vent	11	1	11	1,902.8	51.6	408.7	-	2,363.1	\$129,291	\$28,217	\$14,080	\$171,588
Mass Balance	3	1	3	165.6	12.7	50.1	-	228.4	\$12,344	\$5,152	\$0	\$17,496
Total	14	1.0	14.0	2,068.4	64.4	458.8	-	2,591.5	\$141,635	\$33,369	\$14,080	\$189,084

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

PROCESS VENT

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	\$59.12	\$77.23	\$31.35	\$109.94	\$0
QA/QC	17.00	0.85	8.50	-	\$1,337
Recordkeeping	32.83	2.39	16.33	-	\$2,637
Sampling and Analysis	107.73	0.75	-	-	\$6,427
Reporting	15.43	0.70	12.33	-	\$1,353
Total	172.98	4.69	37.15	-	\$11,754

MASS BALANCE

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	\$59.12	\$77.23	\$31.35	\$109.94	\$0
QA/QC	23.20	1.15	9.30	-	\$1,752
Recordkeeping	24.70	2.39	5.70	-	\$1,824
Sampling and Analysis	-	-	-	-	\$0
Reporting	7.30	0.70	1.70	-	\$539
Total	55.20	4.24	16.70	-	\$4,115

J-1c: SUBPART DD: Sulfur Hexafluoride (SF6) from Electric Power Systems (1)

Source Category	Annual Burden & Cost, All Respondents											
	No. Respondents	Responses/ Respondent	Total Responses	Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
Sulfur Hexafluoride (SF6) From Electric Power Systems	141	1	141	6,638.2	1,640.5	2,260.9	-	10,539.6	\$590,027	\$0	\$0	\$590,027
Total	141	1.0	141.0	6,638.2	1,640.5	2,260.9	-	10,539.6	\$590,027	\$0	\$0	\$590,027

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

Sulfur Hexafluoride (SF6) from Electric Power Systems

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	4.63	2.11	3.67	-	\$551
Recordkeeping	8.93	5.92	7.05	-	\$1,207
Sampling and Analysis	29.32	1.86	-	-	\$1,877
Reporting	4.20	1.74	5.32	-	\$550
Total	47.08	11.63	16.03	-	\$4,185

J-1d: Subpart QQ: Imports and Exports of Fluorinated GHGs in Products (1)

Source Category	No. Respondents	Responses/Respondent	Total Responses	Annual Burden & Cost, All Respondents		Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
				Burden - Technical (hrs)	Burden - Managerial (hrs)									
HFC Equipment Importers	50	1	50	2,954.0	366.5	156.5	-	-	-	3,467.0	\$207,079	\$0	\$0	\$207,079
Sf6 Equipment Importers	8	1	8	472.6	57.0	25.0	-	-	-	554.7	\$33,133	\$0	\$0	\$33,133
Close-Cell Foam Importers	50	1	50	2,954.0	366.5	156.5	-	-	-	3,467.0	\$207,079	\$0	\$0	\$207,079
HFC Equipment Exporters	25	1.0	25	1,477.0	178.3	78.3	-	-	-	1,733.5	\$103,540	\$0	\$0	\$103,540
Sf6 Equipment Importers	0	1.0	0	-	-	-	-	-	-	-	\$0	\$0	\$0	\$0
Close-Cell Foam Exporters	25	1.0	25	1,477.0	178.3	78.3	-	-	-	1,733.5	\$103,540	\$0	\$0	\$103,540
Total	158	-	158.0	9,334.6	1,126.5	494.5	-	-	-	10,955.7	\$654,376	\$0	\$0	\$654,376

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

HFC EQUIPMENT IMPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling and Analysis	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

Sf6 EQUIPMENT IMPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling and Analy	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

CLOSE-CELL FOAM IMPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling and Analysis	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

HFC EQUIPMENT EXPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

Sf6 EQUIPMENT IMPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

CLOSE-CELL FOAM EXPORTERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	-	-	-	-	\$0
QA/QC	-	-	-	-	\$0
Recordkeeping	25.08	3.13	3.13	-	\$1,823
Sampling	31.00	3.00	-	-	\$2,064
Reporting	3.00	1.00	-	-	\$255
Total	59.08	7.13	3.13	-	\$4,142

J-1e: Subpart SS: SF6 Equipment Producers (1)

Source Category	Annual Burden & Cost, All Respondents											
	No. Respondents	Responses/ Respondent	Total Responses	Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
Sf6 Equipment Producers	10	1	10	220.0	85.0	129.0	-	434.0	\$23,615	\$0	\$120	\$23,736
Total	10	1	10.0	220.0	85.0	129.0	-	434.0	\$23,615	\$0	\$120	\$23,736

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

SF6 EQUIPMENT PRODUCERS

Activity	Labor Hours / Rate				Labor\$/Yr per Unit or Facility (2011\$)
	Technical	Management	Clerical	Legal	
Planning	1.50	1.00	-	-	\$166
QA/OC	-	-	-	-	\$0
Recordkeeping	-	-	0.20	-	\$6
Sampling and Analysis (Calculations)	17.00	4.00	11.00	-	\$1,659
Reporting	3.50	3.50	1.70	-	\$531
Total	22.00	8.50	12.90	-	\$2,362

Capital costs per facility:

\$0

O&M costs per facility:

\$12

APPENDIX J-2: Summary of Burden and Cost for Additional Sources of Fluorinated GHG (Subparts I, L, DD, QQ, and SS)

Source Category	Annual Average - 3 year ICR Period											
	No. Respondents	Responses/ Respondent	Total Responses	Burden - Technical (hrs)	Burden - Managerial (hrs)	Burden - Clerical (hrs)	Burden - Legal (hrs)	Total Burden (hrs)	Total Labor Cost (\$)	Capital Cost (\$)	O&M Cost (\$)	Total Cost (\$)
I - Electronics Manufacturing	94	1	94	30,196	2,511.6	2,204.8	24.4	34,937.1	\$2,050,981	\$3,511,900	\$0	\$5,562,881
L - Fluorinated Gas Production	14	1	14	2,068	64.4	458.8	-	2,591.5	\$141,635	\$33,369	\$14,080	\$189,084
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	6,638	1,640.5	2,260.9	-	10,539.6	\$590,027	\$0	\$0	\$590,027
QQ - Imports and Exports of Fluorinated GHGs in Products	158	1	158	9,335	1,126.5	494.5	-	10,955.7	\$654,370	\$0	\$0	\$654,370
SS - SF6 Equipment Producers	10	1	10	220	85.0	129.0	-	434.0	\$23,615	\$0	\$120	\$23,736
TOTAL	417	1	417	48,457	5,428.0	5,548.0	24.4	59,458.0	\$3,460,628	\$3,545,269	\$14,200	\$7,020,098

J3. Change in Burden and Cost for Additional Sources of Fluorinated GHG (Subparts I, L, DD, QQ, and SS)

Current Cost & Burden (OMB No. 2060-0650, ICR No. 2373.02-2373.04)

First-Year Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$1,913,073	\$990,379	\$0	\$2,903,452
L - Fluorinated Gas Production	14	1	14	52,740	\$2,816,745	\$33,369	\$0	\$2,850,114
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$549,988	\$0	\$0	\$549,988
QQ - Imports and Exports of Fluorinated GHGs in Products	158	1	158	12,536	\$699,671	\$0	\$0	\$699,671
SS - SF6 Equipment Producers	10	1	10	434	\$22,006	\$0	\$120	\$22,127
TOTAL	417	1	417	111,186	\$6,001,483	\$1,023,748	\$120	\$7,025,351

Subsequent-Year Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$1,913,073	\$3,511,900	\$0	\$5,424,973
L - Fluorinated Gas Production	14	1	14	2,591	\$132,348	\$33,369	\$14,080	\$179,797
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$549,988	\$0	\$0	\$549,988
QQ - Imports and Exports of Fluorinated GHGs in Products	158	1	158	10,956	\$609,953	\$0	\$0	\$609,953
SS - SF6 Equipment Producers	10	1	10	434	\$22,006	\$0	\$120	\$22,127
TOTAL	417	1	417	59,458	\$3,227,369	\$3,545,269	\$14,200	\$6,786,838

Annual Average Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$1,913,073	\$2,671,393	\$0	\$4,584,466
L - Fluorinated Gas Production	14	1	14	19,307	\$1,027,147	\$33,369	\$9,387	\$1,069,903
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$549,988	\$0	\$0	\$549,988
QQ - Imports and Exports of Fluorinated GHGs in Products	158	1	158	11,482	\$639,859	\$0	\$0	\$639,859
SS - SF6 Equipment Producers	10	1	10	434	\$22,006	\$0	\$120	\$22,127
TOTAL	417	Varies	417	76,702	\$4,152,073	\$2,704,762	\$9,507	\$6,866,343

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

J3. Change in Burden and Cost for Additional Sources of Fluorinated GHG (Subparts I, L, DD, QQ, and SS)

Revised Burden & Cost

First-Year Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$2,050,981	\$3,511,900	\$0	\$5,562,881
L - Fluorinated Gas Production	14	1	14	2,591	\$141,635	\$33,369	\$14,080	\$189,084
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$590,027	\$0	\$0	\$590,027
QQ - Imports and Exports of Fluorinated GHGs in Products	158	0	158	10,956	\$654,370	\$0	\$0	\$654,370
SS - SF6 Equipment Producers	10	0	10	434	\$23,615	\$0	\$120	\$23,736
TOTAL	417	Varies	417	59,459	\$3,460,628	\$3,545,269	\$14,200	\$7,020,098

Subsequent-Year Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$2,050,981	\$3,511,900	\$0	\$5,562,881
L - Fluorinated Gas Production	14	1	14	2,591	\$141,635	\$33,369	\$14,080	\$189,084
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$590,027	\$0	\$0	\$590,027
QQ - Imports and Exports of Fluorinated GHGs in Products	158	0	158	10,956	\$654,370	\$0	\$0	\$654,370
SS - SF6 Equipment Producers	10	0	10	434	\$23,615	\$0	\$120	\$23,736
TOTAL	417	Varies	417	59,459	\$3,460,628	\$3,545,269	\$14,200	\$7,020,098

Annual Average Burden & Cost (1)

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	94	1	94	34,937	\$2,050,981	\$3,511,900	\$0	\$5,562,881
L - Fluorinated Gas Production	14	1	14	2,591	\$141,635	\$33,369	\$14,080	\$189,084
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	141	1	141	10,540	\$590,027	\$0	\$0	\$590,027
QQ - Imports and Exports of Fluorinated GHGs in Products	158	0	158	10,956	\$654,370	\$0	\$0	\$654,370
SS - SF6 Equipment Producers	10	0	10	434	\$23,615	\$0	\$120	\$23,736
TOTAL	417	Varies	417	59,459	\$3,460,628	\$3,545,269	\$14,200	\$7,020,098

(1) Does not include the burden or cost for provision of information on parent companies, NAICS codes, and whether emissions are from cogeneration. This adds another 0.68 hours and \$44 per respondent (see Appendix L).

J3. Change in Burden and Cost for Additional Sources of Fluorinated GHG (Subparts I, L, DD, QQ, and SS)

Change in Burden and Cost

Source Category	No. Respondents	Responses/ Respondent	Total Responses	Total Burden (hrs)	Total Labor Cost (\$K)	Capital Cost (\$K)	O&M Cost (\$K)	Total Cost (\$K)
I - Electronics Manufacturing	0	0	0	0	\$137,908	\$840,507	\$0	\$978,415
L - Fluorinated Gas Production	0	0	0	-16,716	-\$885,512	\$0	\$4,693	-\$880,819
DD - Sulfur Hexafluoride (SF6) from Electric Power Systems	0	0	0	0	\$40,039	\$0	\$0	\$40,039
QQ - Imports and Exports of Fluorinated GHGs in Products	0	-1	0	-527	\$14,511	\$0	\$0	\$14,511
SS - SF6 Equipment Producers	0	-1	0	0	\$1,609	\$0	\$0	\$1,609
TOTAL	0		0	-17,242	-\$691,445	\$840,507	\$4,693	\$153,755

Reason for Changes in Burden and Cost

- Adjusted the labor hours and labor cost per facility for subparts L and QQ to recognize the completion of the one-time activities that occurred in the first year of data collection.
- Updated the labor rates used to calculate labor costs, adopting an approach consistent with the approach used in the other subparts (see Appendix F).