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ADDENDUM TO INITIAL STATEMENT OF REASONS

ADDITIONS TO AND MODIFICATIONS OF REGULATIONS GOVERNING DATA COLLECTION AND DESIGNATION OF CONFIDENTIAL INFORMATION

California Code of Regulations

Title 20, Sections 1302, 1304, 1306, 1308, 1314, 1344, 1353, & 2505

California Energy Commission

Docket Number 16-OIR-03

January 26, 2018

The Energy Commission posted, mailed, and docketed an Initial Statement of Reasons (ISOR) on August 4, 2017, for the above-captioned rulemaking proceeding. The ISOR contained an Economic Impact Assessment as Attachment A. The Energy Commission is now proposing revisions to the original text that require changes to the Economic Impact Assessment. The *REVISED ATTACHMENT A, Updated Economic Impact Assessment for Title 20 Data Collection Regulation Modifications*, attached hereto, is hereby incorporated into the ISOR originally published on August 4, 2017. This document supersedes the original Economic Impact Assessment referenced on page 33 of the ISOR and attached thereto as Attachment A.

Changes to the original Economic Impact Assessment are indicated in underline and strike-out.

**REVISED ATTACHMENT A TO
INITIAL STATEMENT OF REASONS**

**Updated Economic Impact Assessment
for Title 20 Data Collection Regulation
Modifications**

~~July 18, 2017~~ January 26, 2018

Explanation of Updates To Economic Impact Assessment

As a result of revisions to the proposed regulations, reporting under the amendments adopted in this rulemaking in fiscal year 2017/2018 will not occur as originally anticipated. This Economic Impact Assessment has been updated to reflect the fact that reporting will begin in fiscal year 2018/2019, including all start-up costs. In addition, costs in fiscal year 2020/2021 were added to ensure that cost estimates are included for the first three years of implementation.

The specific elements required to be included in the Economic Impact Assessment pursuant to subdivision (b)(1)(A)-(D) of Gov. Code section 11346.3 are addressed at the end of the discussion of each section and subsection below. The Commission’s assessment of these elements has not changed as a result of the updates to this document.

Summary of Cost Impacts

The following table summarizes the costs for all modifications proposed for the Title 20 data collection regulations for the first three fiscal years of the data collection implementation. In the first row of each box, the total cost for each of the three years for the subsection or section is identified. The breakdown of these costs is identified in subsequent rows and discussed in detail in the portion of the document that follows the table. (Individual values are rounded to whole numbers and the reported totals may not match the sums of the individual rounded costs.)

Table 1. Summary of Costs for Proposed Regulations

Proposed Regulation Sections	Fiscal Year				Total
	2017/18	2018/19	2019/20	2020/21	
Section 1302 Definitions (Total)	\$0	\$0	\$0	\$0	\$0
Private Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
Local Public Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
State Costs	\$0	\$0	\$0	\$0	\$0
Section 1304 (a) Combined Heat and Power Data (Total)	\$0 169,497	\$196,965 67,695	\$69,726	\$71,818	\$338,510 307,406
Private Obligated Party Costs	\$0 119,552	\$141,477 47,024	\$48,435	\$49,888	\$239,800 215,011
Local Public Obligated Party Costs	\$0 44,070	\$52,152 17,334	\$17,855	\$18,390	\$88,397 79,259
State Costs	\$0 6,363	\$3,336	\$3,437	\$3,540	\$10,313 13,136

Fiscal Year					
Proposed Regulation Sections	2017/18	2018/19	2019/20	2020/21	Total
Section 1304 (b)					
Interconnection Data (Total)	\$0 696,570	\$1,049,178 665,088	\$682,658	\$703,137	\$2,434,973 2,044,316
Private Obligated Party Costs	\$0 58,590	\$94,079 68,969	\$71,038	\$73,169	\$238,286 198,597
Local Public Obligated Party Costs	\$0 637,980	\$933,720 574,740	\$591,982	\$609,742	\$2,135,444 1,804,702
State Costs	\$0	\$21,379	\$19,638	\$20,227	\$61,244 41,017
Section 1306 (a) Quarterly UDC Reports (Total)	\$0	\$0 1,896	\$1,953 3,719	\$2,011	\$3,964 5,615
Private Obligated Party Avoided Costs*	\$0	\$0 758	\$781 1,561	\$804	\$1,585 2,319
Local Public Obligated Party Avoided Costs*	\$0	\$0 505	\$520 1,041	\$536	\$1,056 1,546
State Avoided Costs*	\$0	\$0 633	\$652 1,117	\$671	\$1,323 1,750
Section 1308 (a) and (b) Monthly Natural Gas Data (Total)	\$0	\$0	\$0	\$0	\$0
Private Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
Local Public Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
State Costs	\$0	\$0	\$0	\$0	\$0
Section 1308 (c) Monthly Natural Gas Deliveries (Total)	\$0	\$0 4,438	\$4,571 9,142	\$4,708	\$9,279 13,579
Private Obligated Party Avoided Costs*	\$0	\$0 3,579	\$3,686 7,373	\$3,797	\$7,483 10,951
Local Public Obligated Party Avoided Costs*	\$0	\$0	\$0	\$0	\$0
State Avoided Costs*	\$0	\$0 859	\$884 1,769	\$911	\$1,796 2,628
Section 1314 Natural Gas Modeling Data (Total)	\$0 10,300	\$14,482	\$14,917	\$15,364	\$44,763 39,699
Private Obligated Party Costs	\$0 6,541	\$6,737	\$6,939	\$7,147	\$20,823 20,216
Local Public Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
State Costs	\$0 3,760	\$7,745	\$7,978	\$8,217	\$23,940 19,483

Fiscal Year					
Proposed Regulation Sections	2017/18	2018/19	2019/20	2020/21	Total
Section 1344 (f) Load Impact Data (Total)	\$0 147,172	\$57,346 46,984	\$31,440 48,394	\$32,383	\$121,169 242,549
Private Obligated Party Costs	\$0 60,264	\$33,335 17,242	\$17,759	\$18,292	\$69,387 95,266
Local Public Obligated Party Costs	\$0 40,176	\$22,223 11,495	\$11,840	\$12,195	\$46,258 63,510
State Costs	\$0 46,732	\$1,787 18,247	\$1,841 18,794	\$1,896	\$5,525 83,773
Section 1353 (a) Disaggregated Data Reporting (Total)	\$0 146,248	\$179,373 35,477	\$36,542	\$37,638	\$253,552 218,267
Private Obligated Party Costs	\$0 93,000	\$114,948 22,990	\$23,679	\$24,390	\$163,017 139,669
Local Public Obligated Party Costs	\$0 46,500	\$57,474 11,495	\$11,840	\$12,195	\$81,508 69,834
State Costs	\$0 6,748	\$6,951 993	\$1,023	\$1,053	\$9,027 8,764
Section 1353 (b) Monthly and Interval Meter Data (Total)	\$0 159,173	\$486,186 227,815	\$486,962 155,292	\$676,307	\$1,649,455 542,280
Private Obligated Party Costs	\$0 53,568	\$110,350 64,371	\$18,943	\$19,512	\$148,805 136,882
Local Public Obligated Party Costs	\$0 35,712	\$73,567 42,914	\$12,629	\$13,008	\$99,203 91,255
State Costs	\$0 69,893	\$302,269 120,530	\$455,390 123,720	\$643,787	\$1,401,446 314,143
Section 1353 (c) Monthly Natural Gas Customer Data (Total)	\$0 248,587	\$437,615 371,466	\$265,106 226,297	\$229,519	\$932,240 846,349
Private Obligated Party Costs	\$0 94,860	\$136,264 80,464	\$82,878	\$85,364	\$304,505 258,201
Local Public Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
State Costs	\$0 153,727	\$301,352 291,002	\$182,228 143,419	\$144,155	\$627,735 588,148
Section 2505 Designation of Confidential Records (Total)	\$0	\$0	\$0	\$0	\$0
Private Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
Local Public Obligated Party Costs	\$0	\$0	\$0	\$0	\$0
State Costs	\$0	\$0	\$0	\$0	\$0

Fiscal Year					
Proposed Regulation Sections	2017/18	2018/19	2019/20	2020/21	Total
Total Private Obligated Party Costs	\$0 486,374	\$637,189 307,796	\$269,672	\$277,762	\$1,184,622 1,063,842
Total Local Public Obligated Party Costs	\$0 804,438	\$1,139,136 657,978	\$646,145	\$665,529	\$2,450,810 2,108,561
Total State Costs	\$0 287,223	\$644,820 463,234	\$671,534 318,008	\$822,876	\$2,139,230 1,068,464
Total Costs	\$0 1,578,025	\$2,421,145 1,429,008	\$1,587,350 1,233,825	\$1,766,167	\$5,774,662 4,240,867
Private Obligated Party Avoided Costs*	\$0	\$0 4,337	\$4,467 8,934	\$4,601	\$9,068 13,271
Local Public Obligated Party Avoided Costs*	\$0	\$0 505	\$520 1,041	\$536	\$1,056 1,546
State Avoided Costs*	\$0	\$0 1,491	\$1,536 2,886	\$1,582	\$3,119 4,378
Total Avoided Costs*	\$0	\$0 6,334	\$6,524 12,861	\$6,719	\$13,243 19,194

* The avoided costs derive from the deletion of a requirement to file aggregated data, with some utilities being required to file disaggregated data. These avoided costs, therefore, should be considered in conjunction with the costs associated with the requirement to file disaggregated data, addressed under the discussion for Section 1353.

General Assumptions

The underlying assumptions regarding evaluating the cost impacts of the proposed regulations include assumptions about the implementation date of regulations, the date reporting by obligated parties is first required, the amount of time required of obligated parties to report and of the Energy Commission to process and store the data, salaries and annual increases in salaries of both Energy Commission staff and the staff of employees responsible for filing the information, the availability of Energy Commission data repositories that will be used for data, and modifications of existing data handling procedures and processes that may be required.

The evaluation assumes that the proposed regulations are adopted in ~~early 2018~~2017 and are effective ~~July 1, 2018~~when approved. The first reporting of data would be in ~~early~~summer 2018.

Staffing Resources Assumptions

To estimate the impact of the proposed changes in reporting requirements on staffing resources, the Energy Commission looked at the time associated with the any increased or decreased reporting requirements and the salaries of Energy Commission employees and the employees who would be responsible for filing the information with the Energy Commission. The general cost calculation for the proposed regulations follows the basic formula of:

$$Cost_y = Hourly Salary^{(Inflation)^{(y-2017)}} \times Hours \times Parties$$

Where:

Cost_y = Total Fiscal Year cost in year *y*.

y = the fiscal year in which costs are being evaluated.

Hourly Salary = is the annual average hourly rate in 2017 for the work being performed.

Hours = the estimated number of hours needed to perform the activities in a Fiscal Year.

Inflation = the assumed annual salary inflation of three percent.

Parties = the number of obligated parties for the proposed regulations.

Depending on the proposed regulations being evaluated, there may be additional factors included in the calculation such as frequency of reporting or scaling to distribute to private or public obligated parties.

Hourly Salary Assumptions

The private industry 2017 annual average hourly salaries were developed by looking at consultant rates established by the Department of General Services IT Consulting Services Contractor Classifications and Rates for contractors eligible to perform programming activities. (See Master Services Agreement for contracts with a value of up to \$1.5 million. This list can be found on the DGS website:

<http://www.dgs.ca.gov/Portals/9/Documents/MAU%201/ITMSA/Contractorslist.xlsx>)

The Energy Commission concluded that a Programmer classification was appropriate for estimating private salaries. The average hourly salary of contractors for the Programmer classification was determined to be \$93 per hour in 2017; this hourly salary is used throughout most of the regulation cost estimates.

For Energy Commission employees, the Energy Commission assumed that the workload for one contractor (System Analyst) and three different classifications of state employees (Electric Generation System Specialist I, Energy Commission Specialist II, and Senior Programmer Analyst) would be affected by the proposed regulations. For classifications Electric Generation System Specialist I (EGSS I) and Energy Commission Specialist II (ECS II), the Energy Commission used the highest salary converted to an hourly rate for the purposes of these estimates, \$57.84 and \$48.20, respectively. For the Senior Programmer Analyst, staff did a survey of the classification and took the highest salary and converted it into an hourly rate. The hourly salary for the state Senior Programmer Analyst is \$51.75.

The System Analyst position is a contractor who would be employed by the state and is conservatively assumed to earn the same rate as the Programmer, \$93 per hour. The Energy Commission also assumed that analytical activities associated with collection of the new data - developing disaggregated forecasts, tracking the effectiveness of GHG emissions reduction efforts, and making policy recommendations for achieving additional GHG emissions reductions and meeting other important state energy goals - would not require new staff resources. This is due to the fact that staff can use highly automated methodologies for processing the new data; these analytical efforts will replace some of the more labor-

intensive efforts that have been used in the past to conduct forecasting activities and develop concomitant policy recommendations.

Over the course of evaluation, all salaries, both consultant and state, are increased by 3 percent annually.

Data Storage Costs

Changes to Sections 1306 and 1308 will result in a reduction of data submitted to the Energy Commission; changes to Sections 1304, 1314, and 1344 will result in additional data that can be accommodated on existing servers. Therefore there are no data storage costs associated with these proposed changes. Section 1353, however, would result in new data storage needs that are addressed below.

The Energy Commission developed an annual data storage cost estimate for proposed Section 1353 (b) and (c). The amount of data to be collected in Section 1353 (b) is estimated by creating a proxy data set consisting of a single customer record with scaling the number of fields currently collected for the Energy Commission's Clean Energy Jobs Act program (under which the Energy Commission receives interval meter data) to the number of fields identified in the proposed regulation.¹ This leads to an estimated size for each customer data record reported of 2.072 9.375 megabytes per year for the interval meter data and 0.2 megabytes per year for monthly data. The number of customers for the five largest utilities was estimated using Energy Information Administration reported values for 2015.² Multiplying 13,887,678, the number of customers, by the annual per-customer data record size of 2.072 9.375 megabytes for interval meter data and 0.2 megabytes for monthly data yielded an estimated data size of about 28.8130.2 TB of interval meter data and about 2.8 TB of monthly data being collected each year. The cost for storage was then calculated using the storage rate for the state data center housed at California Natural Resources Agency commercial prices for Amazon Web Services' (AWS) Standard S3 Storage rates.³ This resulted in an estimated cost of \$204,46239,659 for Fiscal Year 2018/19, and \$390,92678,718 for Fiscal Year 2019/20, and \$577,390 for Fiscal Year 2020/21. However, the Energy Commission will likely be using a cheaper service from the Resources Agency which will require a cost of \$50,000 in Fiscal Year 2018/19 but should result in lower costs in the long run. To be conservative, the Energy Commission used \$50,000 for Fiscal Year 2018/19 and \$78,718 for Fiscal year 2019/20. This estimate is for storage of electricity data collected pursuant to Section 1353 only; the amount of natural gas data that will be collected is much smaller. In fact, the Energy Commission estimates that the overall size of the natural gas data would be between 20 GB and just over 1 TB, all of which is easily held on a single hard drive or server. Assuming however, that Amazon Web Services' Standard S3 Storage AWS S3

¹ Existing detailed data used for this evaluation included school consumption data, proxy consumption data, which was compared to other data sets including industrial sector consumption, energy efficiency evaluation data, and discussions with data contractors. The proxy data set for the school data was approximately 12.5 MB per record of 24 15 fields for 15 minute annual data was approximately 2 megabytes per year per record. Since the regulations involve only 15 fields and may be at 15 minute intervals, the 12.5 MB value was reduced by nearly a quarter and resulted in the 9.375 MB estimate.

² <https://www.eia.gov/electricity/data.php#sales>

³ The current rate for storage is \$0.06 per gigabyte per month. <https://aws.amazon.com/s3/pricing/>

prices are used for the estimate, the cost of natural gas data storage may be an additional \$1 - \$28 a year. Because this amount is exceedingly small and speculative, we have not included it in the cost estimate.

Identifying Costs to Private and Public Obligated Parties

The regulations impose new or modified reporting requirements on owners of cogeneration facilities, and natural gas utilities and UDCs, with some of the modifications affecting only the larger of the latter two. Owners of cogeneration facilities can be private (e.g., a small business or an investor-owned utility regulated by the California Public Utilities Commission or CPUC) or public (e.g., a local publicly-owned electric utility). Natural gas utilities are private, while UDCs can be either private (e.g., an investor-owned utility regulated by the CPUC) or public (e.g., a local publicly-owned electric utility). In order to separately identify the costs of private and public obligated parties, the Energy Commission assumed all obligated parties for each proposed section had the same costs for each data requirement and scaled the costs to the number of private and public entities impacted by the proposed regulations. For example, the proposed language in Sections 1344 and 1345 impacts the five largest California UDCs, three of which are private investor-owned utilities and two of which are local publicly-owned electric utilities. Thus, 60 percent of the estimated costs would be borne by investor-owned utilities and the remaining 40 percent would be borne by local publicly-owned electric utilities.

An exception to this approach was used for 1304(a). Of the 349 cogeneration facilities impacted by Section 1304 (a) changes, 94 are local publicly-owned units and 255 are private. Because costs are established on a per unit basis, 73 percent of the costs are private and 27 percent are public. The proposed changes to Section 1304 (a) only impact cogenerator owners, not the owners of approximately 450 other power plants for which data is reported under Section 1304.

Natural gas utilities are all privately owned so there is no need to differentiate between public and private costs for changes to natural gas data collection requirements.

Estimates for First 3 Fiscal Years

Estimates are provided for fiscal years ~~2017/18, 2018/19, and 2019/20, and 2020/21~~. ~~Although the regulations are expected to go into effect January 1, July 1, 2018, or shortly thereafter, some with one-time startup costs captured in the first fiscal year 2018/19, may be incurred before the regulations go into effect during the first fiscal year, so we have provided an estimate for fiscal year 2017/18.~~

Fiscal year 2018/19 is the first year in which compliance with the regulation is required. However, general costs may be higher than a typical compliance year in fiscal year ~~2018/19~~ ~~2017/18~~ as new data activities are undertaken.

Fiscal year 2019/20 represents full implementation, representative of the costs associated with the regulations on an ongoing basis.

Section 1302 Definitions

The proposed regulatory changes within Section 1302 focus on clarifying and adding definitions to improve the understanding of the proposed regulations. Since the changes to Section 1302 are administrative in nature and do not independently require reporting, the Energy Commission estimates there would be no cost impacts due to the proposed regulations in this section.

Costs to Obligated Parties

There are no cost impacts to any obligated parties due to clarifying and adding definitions to this section. The proposed language would not result in any changes to reporting processes.

Costs to the State

There are no cost impacts to the state due to clarifying and adding definitions to this section. The proposed language would not result in any changes to reporting processes.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

The proposed regulations within Section 1302 would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform all the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment.

Section 1304 (a)(1) and (2) Cogeneration Data

Changes to these subdivisions require the provision of waste heat and useful thermal output along with customer classification codes of recipients by the 139 owners of 349 cogeneration facilities. These owners already provide detailed energy data about the facilities to the Energy Commission as part of the existing Section 1304 (a)(1) and (2) regulations. Non-cogenerator power plant owners who currently report under Section 1304 will not be impacted by the proposed regulatory changes.

The changes will allow the Energy Commission to collect information needed to estimate cogeneration (also referred to as combined heat and power or CHP) efficiencies by obtaining the useful thermal output. Current regulations focus only on total thermal energy data and do not distinguish between the useful and waste components. Most of the targets/goals for CHP development are based on the idea that they are more fuel-efficient and therefore have lower emissions. Currently CHP facility fuel-efficiency is estimated. The useful thermal output data would provide a solid analytical basis for current and future CHP policy and ensure promoting CHP development is still consistent with state environmental goals.

Costs to Obligated Parties

Obligated parties impacted by the proposed regulations are comprised of 139 power plant owners of an estimated 349 cogeneration facilities; these entities report generation data to the Energy Commission as part of the existing Section 1304 regulations. Non-cogeneration power plant owners will continue to

report in accordance with the Section 1304 and will not be impacted by the proposed modifications. Of the 139 owners required to report on cogeneration facilities, 37 are public, and the rest are private. The proposed regulations would require two additional data points for each unit to identify the useful thermal output that is being captured and the customer classification code of the recipient.

There would be no expansion of any industries to comply with the data request. Staff estimates that obligated parties maintain this data for business purposes and would be able to retrieve it from existing datasets. The new requirement may involve the development of an additional process or query to extract the detailed data for reporting. Developing a single initial process for pulling data from an existing system would take, approximately 24 minutes for each facility. Staff estimates it would take about 3.5 hours to test (24 minutes), revise (24 minutes), obtain internal approval on reporting (just under 1.6 hours), and integrate with existing reporting processes (1.2 hours). This leads to a conservative estimate of approximately 4 hours to develop a reporting process for the new data reporting requirement per unit for a one-time effort in the first fiscal year.

Not all obligated parties have staff on hand to perform this work and it may require using a database administrator or programmer to perform some of these tasks. Therefore, the Energy Commission has used the average hourly rate of \$93 for a Programmer as defined in the California Department of General Services procurement list for IT services.

The described estimates results in a fiscal year ~~2018/19~~~~2017/18~~ cost, including development work, of ~~\$141,477,419,552~~ for private cogeneration facility owners, and ~~\$52,152,44,070~~ for local public cogeneration facility owners.⁴

Once developed, the recurring reporting will be accomplished through the use of a standard query to collect the data, followed by a creation of a summary, and filing a report. Querying, validating, and summarizing two additional data points should take no more than 30 minutes (0.25 hours + 0.25 hours) and reporting the data on the Energy Commission's modified forms would take a couple of minutes per unit. Including additional time to confirm the data is entered properly, staff has estimated the reporting to take 7 and half minutes (0.125 hours) per unit. About 69 percent of units (242 units of 349 total units) report quarterly while the remaining unit data is reported annually. ~~In fiscal year 2017/18 only two quarterly reports are assumed to be submitted.~~

Using the \$93 per hour average programmer rate and the fact that 73 percent of units are private, the recurring reporting costs are estimated for fiscal year 2018/19 to be \$141,477,47,024 for private cogeneration facility owners and \$52,152,17,334 for local public cogeneration facility owners. For fiscal year 2019/20 costs are estimated at \$48,435 for private cogeneration facility owners and \$17,855 for local public cogeneration facility owners. For fiscal year 2020/21 costs are estimated at \$49,888 for private cogeneration facility owners and \$18,390 for local public cogeneration facility owners.

⁴ The total costs are allocated equally across all cogeneration facilities with 255 of the 349 units being identified as private. The remaining 94 units are public.

Costs to the State⁵

The proposed section 1304 (a)(1)&(2) would require Energy Commission staff to undertake two categories of activities.

First, in order to facilitate the reporting of the new data Energy Commission staff would need to modify, disseminate, and answer questions regarding updated templates used to collect related data. Additionally, Energy Commission staff responsible for extracting the data would need to be informed about the new data. In total, over the course of modifications, staff estimates this would result in 80 hours of staff time dedicated to the one-time modifications necessary to obtain the data. This work would be completed by an Electric Generation System Specialist I at an hour rate of \$57.84 and result in a total one-time cost of \$4,628 in fiscal year 2017/18 only.

Second, for each reported value, Energy Commission staff would need to acquire, validate, and review the data submittal. Since this is part of an existing data management process, the staff time to perform these activities would take less than a minute for each data point submitted. As there would be two new data points (useful thermal energy and customer classification code of the recipient) for each of the 349 cogeneration facilities and considering the frequency of reporting, either quarterly or annually based upon total generation capacity by obligated party, there would be approximately 1182 new data points for a half year of reporting and 2150 new data points for a full year of reporting. A conservative estimate would be that this reporting would require 1200 minutes or 20 hours of Energy Commission staff time for a half year of reporting and 2150 minutes or approximately 36 hours for a full years of reporting This work is assumed to be completed by an Electric Generation System Specialist I at a rate of \$57.84 per hour and would result in a total annual cost of ~~\$1,157 in fiscal year 2017/18,~~ \$2,145 in fiscal year 2018/19, ~~and \$2,209 in fiscal year 2019/20,~~ and \$2,276 in fiscal year 2020/21. As a conservative estimate, the Energy Commission also assumed a need to resolve data reporting issues with the reporting parties. These efforts are estimated to result in an additional 5 hours of work for each quarter although this may decrease as parties become familiar with the required data. This work is assumed to be completed by an Electric Generation System Specialist I at a rate of \$57.84 per hour and would result in a total annual cost of ~~\$578 in fiscal year 2017/18,~~ \$1,192 in fiscal year 2018/19, ~~and \$1,227 in fiscal year 2019/20,~~ and \$1,264 in fiscal year 2020/21.

Summing the costs associated with these two categories of activities together, the revisions to section 1304 (a) are estimated to cost the state ~~\$6,363 in fiscal year 2017/18,~~ \$3,336 in fiscal year 2018/19, ~~and \$3,437 in fiscal year 2019/20,~~ and \$3,540 in fiscal year 2020/21.

⁵ As this data would be collected and managed with other data reported to the Energy Commission, there should be no cost to the state outside of staff time to update the relevant data reporting templates. Staff time consists of entering two additional pieces of data to the updated reporting templates, which should conservatively take approximately 2 minutes. Given that approximately 349 cogeneration facilities have data reported to the Energy Commission, this should result in approximately 35 hours 50 minutes of staff time per year. (2 staff minutes/facility report) x ((242 facilities) x (4 facility reports/facility/year)+(107 facilities) x (1 facility report/facility/year)) = 2,150 staff minutes per year = 35 hours 50 minutes of staff time per year.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the owners of cogeneration facilities are required to comply with the reporting requirements of this section. For these entities, the costs associated with compliance with the proposed revisions to this section are negligible, and could be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed revisions to Section 1304 (a)(1) and (2) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect facility operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits, including estimating the efficiency of these facilities and their role in helping the state meet its greenhouse gas emissions reduction goals. These are discussed generally in the Benefits section of the initial statement of reasons (ISOR), and specifically in the explanation of the Purpose and Necessity for this section.

Section 1304 (b) Interconnection Data

The proposed changes in subdivision (b) would require the inclusion of energy storage systems data in reporting interconnections and would eliminate the reporting threshold for interconnected electric generation resources, thereby expanding the interconnected resources required to be reported to the Energy Commission.⁶ Utility Distribution Companies (UDCs) would be required to provide interconnection data collected as part of the interconnection application process twice a year. There are 56 California UDCs that will be impacted by this regulation, most of which are smaller local publicly-owned electric utilities, the remainder of which are private investor-owned utilities.⁷

Costs to Obligated Parties

All UDCs are obligated to provide interconnection data to the Energy Commission under the existing regulation. The modifications would result in the elimination of the size threshold, so that all interconnected facilities would need to be reported by each UDC. In addition, UDCs would be required to report the interconnection of energy storage systems. Of the 56 obligated parties, five UDCs have an electric load greater than 1,000 MW. The three large UDCs that are investor-owned utilities that currently have the obligation to collect and provide some of the interconnection data identified in the proposed modifications to the California Public Utilities Commission, and the additional reporting to the Energy Commission should involve negligible cost. Additionally, the two largest local publicly-owned electric utilities have significant electric generation resources that are tracked in detailed electronic databases. As such, the cost impacts to these five large UDCs for reporting data to the Energy Commission would be small and would primarily involve sending information to the Energy Commission

⁶ The term "interconnections" refers to electric generators, including roof top solar, and storage systems interconnections to utility distribution company (UDC) distribution systems.

⁷ http://www.energy.ca.gov/almanac/electricity_data/utilities.html

that is already collected in the course of business. Still, these five UDCs may need to revise existing queries to capture the data required in the proposed regulations. This would involve expanding the existing process of gathering interconnection data by revising current queries, testing, resolving issues, and developing reports for the submission to the Energy Commission. Staff estimates this should take 10 hours to complete since much, if not all, of the data is already collected in an electronic format. The recurring costs would involve running the query, summarizing the data appropriately, and sending the data to the Energy Commission and annually would take 60 hours, 40 hours, and 20 hours, respectively.⁸

For the smaller UDCs with electric load that is 1,000 MW and lower, data delivery to the Energy Commission may involve querying existing interconnection agreement data and summarizing into a single data set for delivery to the Energy Commission. The one-time cost of query development is estimated as 80 hours to write the query, test the query, and identify and resolve any issues with the data reporting. Similar to the larger UDCs, the recurring costs would involve running the query, summarizing the data appropriately, and sending the data to the Energy Commission. The smaller UDCs would likely have much lower costs than estimated here due to the smaller number of interconnected resources.⁹

The five largest UDCs would likely employ a programmer to write and implement the queries at an average rate of \$93 per hour. As another conservative assumption, \$93 per hour is also used to estimate the costs for other obligated parties, although data entry would likely be performed by someone at a lower rate than \$93 an hour. Taking into account the difference in costs between large and small UDCs, total costs for fiscal year ~~2017/18~~ 2018/19 are ~~\$94,079~~\$94,079~~58,590~~ for investor-owned utilities, and ~~\$933,720~~\$933,720~~637,980~~¹⁰ for local publicly-owned electric utilities. (The costs are greater for local publicly-owned electric utilities both because there are a greater number of them, and because some may lack the automated systems used by the larger UDCs.)

In each of the following years, because the query will already be developed, the estimated costs for all obligated parties would be lower. Costs are estimated to be ~~\$68,969~~ and ~~\$574,740~~ respectively for ~~privately owned and local publicly-owned electric utilities in 2018/19~~, and \$71,038 and \$591,982

⁸ Since fiscal year 2017/18 is only half a year, the costs are estimated as 30 hours for data collection, 20 hours for summarizing, and 10 hours for reporting.

⁹ Not all UDCs have fully automated systems to report the information and, in some instances, procedures would need to be implemented for summarizing and reporting the data. In 2014, there were a total of 4,826 interconnections reported to the Energy Commission by the 51 smaller obligated parties. Historically, approximately 17 of these UDCs have identified fewer than 10 total interconnections. Entering the information manually for all 4,826 interconnections into a file from interconnection agreement documents is conservatively estimated to take just over three hours for each obligated party. Staff arrived at the 3 hour estimate by performing its own timed data entry for 18 data elements, as requested in the proposed regulations, and deriving an estimate of just over 3 minutes per entry. Rounding this up to 4 minutes, multiplying by 4,826 for all the interconnections and dividing by 60 minutes per hour, 51 obligated parties, and 2 for each annual reporting event resulted in an estimate of 3 hours and 9 minutes.

¹⁰ Of the 56 electricity utilities obligated to report under this section, 6 are investor-owned utilities while 50 are publicly-owned utilities. Most of the publicly-owned utilities are smaller and would need to spend more time automating their data collection processes in contrast to the larger utilities whose billing and metering systems are mature and are largely automated.

respectively for privately owned and local publicly-owned electric utilities in 2019/20, and \$73,169 and \$609,742 respectively for privately owned and local publicly-owned electric utilities in 2020/21. These costs increase slightly over time as salaries increase and as the number of interconnections increase although these increases would be mitigated by possible reporting automation.

Costs to the State

In order to facilitate the reporting of the new data, Energy Commission staff would be modifying, disseminating, and answering questions regarding new data requirements. The data provided under Section 1304 (b) ~~isn't~~ not standardized; UDCs can use any format they find convenient. This practice would continue under the proposed change to Section 1304 (b). Energy Commission staff responsible for extracting the data would need to be informed about the new data and staff may need to answer questions regarding the new fields. In total, over the course of modifications, staff estimates this would result in 40 hours of staff time dedicated to the one-time modifications necessary to obtain the data. This one time activity would add a cost of \$2,314 to the state's costs in fiscal year 2018/19 since data reporting is required semi-annually requiring the first data to be submitted in July of 2018.

Energy Commission staff would also need to acquire, validate, and review the new data submittal. Much of this is handled with automated validation checks of submitted data and would not result in significant additional time. In total additional staff time to manage the new data is estimated at 125 hours to process and validate the data, 30 hours to resolve any data issues, and 5 hours to ensure the data is properly imported for each reporting event. Annually this would result in a total of 320 hours (250 hours to process, 60 hours for data issues, 10 hours for importing) of work being performed since there are two reporting events each year and combined with the one-time development costs (40 hours, costing \$2,314) would result in an estimated cost of \$21,379¹¹ in fiscal year 2018/19, ~~and \$19,638 in fiscal year 2019/20, and \$20,227 in fiscal year 2020/21.~~ Note that state costs are expected to decrease in the final year as staff becomes familiar with data, issues with data reporting are resolved, and data management processes are automated.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

California investor and publicly-owned utilities are required to comply with the reporting requirements of this section. For these utilities, the costs associated with compliance with this section are negligible, and can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed revisions to Section 1304 (b) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect UDC operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit to the direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits, including monitoring the expansion and adoption of

¹¹ Assumes the work is performed by an Electric Generation System Specialist at an hourly rate of \$57.84.

interconnected resources, and their role in the state's efforts to achieve greenhouse gas emissions reduction and other energy goals. These are discussed generally in the Benefits section of the ISOR, and specifically in the explanation of the Purpose and Necessity for this section.

Section 1306 (a) Quarterly UDC Reports

The proposed modifications would relieve the five largest utility distribution companies (UDCs) from quarterly reporting of customer data identified in Section 1306 (a) after ~~January 1~~ February 15, 2020~~19~~. This change would result in a savings to both UDCs and Energy Commission staff for processing, managing, and validating the submitted data. It is important to note that the reduction in reporting under this section is coupled with a new requirement that more customer data be provided by the five UDCs under proposed Section 1353. The costs associated with those reporting requirements are addressed in the discussion of that section, below. The following costs savings are estimated for both obligated parties and state staff due to the reduction in reporting requirements under this section.

Avoided Costs to Obligated Parties

UDCs under the current regulation have to report various types of customer data on a quarterly basis to the Energy Commission. The UDCs that will be relieved of the reporting obligation under this proposed modification have automated much of the reporting process and submit their information via email. The submittal is internally automatically processed at the Energy Commission. If there are specific issues with reporting, Energy Commission staff must resolve the issues by talking with UDC staff. On a quarterly basis, about 30 minutes is estimated to query the data and format, 30 minutes to compose the message to the Energy Commission, attach the data file, and transfer the data. Historically there are a few mistakes in data reporting, which take an estimated 4 hours every quarter to discuss and resolve. The reporting requirement is not eliminated until ~~January 1~~ after February 15, 2020~~19~~; therefore, there ~~are~~ is no avoided costs in the first and second fiscal years. Elimination of the reporting requirement would result in an avoided cost in fiscal year 2019/20~~2018/19~~ of ~~\$781,758~~ for the three investor-owned utilities, and ~~\$520,505~~ for the two local publicly-owned electric utilities. In fiscal year 2020/21~~2019/20~~, avoided costs are estimated to be ~~\$804,564~~ for investor-owned utilities and ~~\$536,044~~ for local publicly-owned electric utilities).¹²

Avoided Costs to the State

The Energy Commission has two staff that manage and work on the electricity data which is submitted through Section 1306 (a). According to estimates from past reporting, staff estimates that they would annually spend 4 hours less on validating and reviewing data, 16 hours less on resolving data issues, and 4 hours less on appending and updating the database. It is assumed this work would be performed by an Energy Commission Specialist I at an hour rate of \$43.88. The reporting requirement does not change until ~~January 1~~ after February 15, 2020~~19~~; therefore, there is no avoided cost in fiscal year ~~2017/18~~ and ~~2018/2019~~. Estimated savings of ~~\$652,633~~ begin in fiscal year ~~2018/19~~ and ~~\$1,117~~ in the fiscal year 2019/20 and rise to \$671 in fiscal year 2020/21.

¹² Assumes the work is performed by a senior engineering utility staff with an hourly rate of \$68.13 estimated from a PG&E engineering positions Glassdoor salary survey.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

The proposed regulations within Section 1306 (a) would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment.

Section 1308 (a) and (b) Monthly Natural Gas Data

The proposed regulatory language is a clarification of existing language that has been inserted at the request of obligated parties to reflect current conditions within California's natural gas distribution network. No changes to reporting would result from the changing of the proposed location names.

Costs to Obligated Parties

There are no cost impacts to obligated parties due to clarifying distribution location names. The proposed language would not result in any changes to reporting processes.

Costs to the State

There are no cost impacts to obligated parties due to clarifying distribution location names. The proposed language would not result in any changes to reporting processes.

Potential Impacts of Proposed Regulations

The proposed regulations within Section 1308 (a) and (b) would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform all the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment.

Section 1308 (c) Monthly Natural Gas Deliveries

The proposed regulation would relieve the three largest natural gas utilities from quarterly reporting of customer data identified in Section 1308 (c) after ~~January 1~~February 15, 2020~~19~~. This change would result in a savings to both natural gas utilities and Energy Commission staff for processing, managing, and validating the submitted data. It is important to note that the reduction in reporting under this section is coupled with a new requirement that more customer data be provided by the natural gas utilities under proposed Section 1353. The costs associated with those reporting requirements are addressed in the discussion of that section, below. The following costs savings are estimated for both obligated parties and state staff from the reduction in reporting requirements under this section.

Avoided Costs to Obligated Parties

Natural gas utilities have to report under the current regulation various types of customer data on a quarterly basis to the Energy Commission. The natural gas utilities that would be relieved of the reporting obligation under this proposed modification have automated much of the reporting process and only have to submit their information in electronic format; this information is then internally automatically processed. If there are specific issues with reporting, Energy Commission staff must resolve the issue by talking with natural gas utilities. On a quarterly basis, about 30 minutes is estimated to query the data and format, 30 minutes to compose the message to the Energy Commission, attach the data file, and transfer the data. There can be a few mistakes that take time to resolve and this is estimated to take about 30 hours every quarter and would involve communicating with Energy Commission staff to resolve. The three natural gas utilities would no longer be required to report after ~~January 1~~ February 15, 2020~~19~~; therefore, there ~~are~~ is no avoided cost in the first and second fiscal years. For fiscal year ~~2018/19~~ 2019/20 estimated savings are ~~\$3,579~~ and fiscal year ~~2019/20~~ 2020/21 estimated savings are ~~\$3,686,373~~ and for fiscal year 2020/21 estimated savings are \$3,797.¹³

Avoided Costs to the State

The Energy Commission has staff that manages and works on the natural gas data which is submitted through Section 1308 (c). Based on past experience working with this data, staff estimates that every year they would spend 4 hours fewer on validating and reviewing data, 30 hours fewer on resolving data issues, and 4 hours fewer on appending and updating the database. It is assumed this work would be performed by an Energy Commission Specialist I at an hour rate of \$43.88. The reporting requirement does not change until ~~January 1~~ after February 15, 2020~~19~~; therefore, there ~~are~~ is no avoided costs in the first and second fiscal years. In the fiscal year ~~2019/2018/19~~ 2019/20 state avoided costs are estimated at ~~\$884859~~ and \$1,769 for fiscal year ~~2019/20~~ 2020/21 state avoided costs are estimated at \$911.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

The proposed regulations within Section 1308 (c) would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform all the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment.

Section 1314 Natural Gas System Analysis Modeling Data

The natural gas utilities are responsible for monitoring and managing the natural gas distribution systems to ensure the safe operation of the distribution system, and to ensure an adequate supply of cost effective resources is available to customers, including electric generators. One important activity natural gas utilities perform to meet these responsibilities is modeling the natural gas distribution

¹³ Assumes the work is performed by a senior engineering utility staff with an hourly rate of \$68.13 estimated from a PG&E engineering positions Glassdoor salary survey.

system using hydraulic modeling software. The proposed data regulations require the three California natural gas utilities to provide their hydraulic modeling data to the Energy Commission.

Costs to Obligated Parties

Since the modeling work is already performed in the normal course of business for the obligated three largest natural gas utilities, this regulation would not require them to collect additional data. Similarly, the data infrastructure already exists to manage the data and there is no need for additional databases or querying to gather the data. However, there is estimated to be a small cost associated with gathering the data, transferring it to the Energy Commission, and being available to address any questions and resolve data issues. Gathering the data is expected to cost ~~\$2,105,044~~ and the data transfer is estimated to cost ~~\$421,409~~ in fiscal year ~~2018/19~~~~2017/18~~ and would involve the delivery of the data via a secure electronic method. Although the natural gas utility staff time to address questions and data issues may change over time, the Energy Commission estimates that on average it would take 20 hours at a total annual cost of ~~\$4,210,088~~ in the first year of reporting, assuming the work is performed by a Senior Gas Control System Engineer with an hourly rate of \$68.13. In summary, the Energy Commission estimates the total costs for all three obligated natural gas utilities to be ~~\$6,541~~ in fiscal year ~~2017/18~~, \$6,737 in 2018/19, ~~and~~ \$6,939 in 2019/20, and \$7,147 in 2020/21.

Costs to the State

The state has approved one position for the Energy Commission through a Budget Change Proposal (BCP). This position is for an engineer who will perform modeling and assessment of the natural gas sectors to ensure electric service reliability. The Department of Finance 2016-2017 Finance Letter Worksheet (3360-001-0381-2016) indicates a net impact of \$579,666 for the one position with salary and wages, staff benefits, and operating expenses. Because this position has already been approved, the costs associated with it are not included in the fiscal impacts associated with the new regulation. No special equipment or infrastructure is required to handle or house the data.

In addition to the approved position, other Energy Commission employees will work with this data. State costs attributable to this work include those associated with data validation and review, resolving any issues, and finalizing data sets for simulation work. Annually the validation, resolving issues, and data finalization work will require 90 hours, 30 hours, and 10 hours, respectively.¹⁴ This work is estimated to total ~~\$3,760~~ in fiscal year ~~2017/18~~, \$7,745 in fiscal year 2018/19, \$7,978 in fiscal year 2019/20, and \$8,217 in fiscal year 2020/21.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the three largest natural gas utilities are required to comply with the reporting requirements of this section. For these utilities, the costs associated with compliance with this section are negligible and can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed Section 1314 would likely not result in the creation or elimination of any

¹⁴ Reporting will be half way through fiscal year 2017/18 so the costs are estimated at half the total annual costs.

jobs within California. Furthermore, because compliance with this section would not affect natural gas utility operations, this section would neither create nor eliminate any businesses doing business in California, nor would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits, including the ability to perform modeling of the natural gas distribution network and develop associated energy policies to address natural gas and electric system reliability and impacts to the environment associated with the state's natural gas and electricity systems. These are discussed generally in the Benefits section of the ISOR, and specifically in the explanation of the Purpose and Necessity for this section

Section 1344 (f) Emerging Behind-the-meter Load Impacts

At any given time, the energy demand information collected from customer meters represents only the amount of energy sold to the customer at that time, not the actual amount of energy being consumed by the customer. For example, if the customer owns generation, such as a photovoltaic system or storage, such as a battery system, the amount of energy sold by the UDC to the customer does not necessarily reflect the amount of energy consumed. In addition, the use of electric vehicles can have a profound effect on the grid. Electric vehicles (EV) require charging and also have the potential to act as mobile energy storage resources. Much research has been performed to evaluate the process for what is referred to as vehicle-to-grid integration, creating the infrastructure and information to utilize electric vehicles to assist with electric grid management.

These resources and loads modify the consumption measured by the UDC meter. In order to evaluate and understand the magnitude of these resources on the broader energy needs, the rates of adoption, and the operational behaviors, the amount of energy consumed by electric vehicles and the amount generated by PV systems and storage (including EVs) need to be quantified. This requires data on activities that occur 'behind-the-meter,' meaning that the information being collected must come from the location where the activity occurs, and not at the UDC meter, where customer demand and supply are aggregated. This information can be collected by methods such as surveying or monitoring representative populations over time, measuring the demand of specific end-uses or generation (called sub-metering), collecting information from generation sources through smart inverters, or estimating loads by leveraging other studies or research. As part of the operation, planning, and monitoring of the electricity grid, utilities study grid impacts using these methods.

In order to improve the peak demand load forecasts, disaggregate the impacts of these new behind-the-meter resources, track the success or failures of specific policies and programs, and assist with development of new policies, the amendments proposed for this regulation would require the five largest UDCs to provide a detailed summary of the detailed load data from their behind-the-meter research targeting three specific potential impacts: photovoltaic installations, energy storage systems, and electric vehicles.

Costs to Obligated Parties

The proposed regulations obligate the five largest UDCs to provide a summary of their ~~the~~ behind-the-meter impact research information to the Energy Commission. Since the regulation is explicitly limited to work being performed by the UDCs, there is only a cost to transmit the information to the Energy Commission. In some cases, there would be minimal coordination required by the UDC staff to gather the information obtained during the load research to provide to the Energy Commission.

There are likely instances where multiple groups within a UDC would lead different areas of load research, which would require some coordination within the UDC to gather the summary information necessary to comply with the proposed regulations. Most of the cost would involve the initial identification ~~and coordination~~ of the research performed ~~data collection~~ with a much shorter amount of time required afterwards, since key UDC staff would be engaged in the reporting process. The Energy Commission estimates that it would take approximately ~~80160~~ hours in the first fiscal year to gather the existing reports ~~data~~ for reporting, which would include identifying and contacting appropriate UDC staff, internally discussing and reviewing information, and collecting the required summary documents ~~data~~. Energy Commission staff estimates it would take 40 hours each subsequent year to complete this work, since it assumed a procedure for communication, identification, and delivery of summary reports ~~data~~ would be promulgated.

Once the information is collected, the summary reports ~~data~~ would be organized and transferred to the Energy Commission. The Energy Commission estimates that it would take 8 hours to organize and describe the data and another 8 hours to determine appropriate transfer methods and transfer the files to the Energy Commission in fiscal year 2017/18. Once the initial procedures are developed for document ~~data~~ transfer, it is estimated to take only 4 hours to transfer the information. Following delivery, clarifying questions regarding the research ~~data~~ would need to be addressed and are estimated to initially cumulatively involve ~~2040~~ hours of UDC staff time for the first document ~~data~~ delivery and only 8 hours for future documents ~~data~~, since many of the types of questions would have been identified. Using the hourly rate for a Systems Analyst of \$93, the total costs for fiscal year ~~2018/19~~ ~~2017/18~~ are ~~\$33,335,602,64~~ for the three investor-owned utilities and are ~~\$22,223,401,76~~ for the two local publicly-owned electric utilities. Costs for fiscal year ~~2019/20~~ ~~2018/19~~ are estimated to be ~~\$17,759,17,242~~ and ~~\$11,840,11,495~~ respectively for investor-owned utilities and local publicly-owned electric utilities, and for fiscal year ~~2020/21~~ ~~2019/20~~ are estimated to be ~~\$18,292,17,759~~ and ~~\$12,195,11,840~~ respectively for investor-owned utilities and local publicly-owned electric utilities.

Costs to the State

The energy load impact research ~~data~~ would need to be reviewed, and categorized, ~~and formatted.~~ After the load research summaries ~~are~~ ~~data~~ is provided to the Energy Commission, the documentation ~~data~~ would need to be evaluated for to understand the scope and depth of the research performed ~~quality, representativeness, and any missing data~~. This work is estimated to take Energy Commission staff ~~2040~~ hours. Energy Commission staff would then need to resolve any issues with the summary documentation ~~data~~ collaboratively with the obligated utilities. The resolution of issues should be straightforward and would primarily involve obtaining additional descriptive or explanatory

information from the utilities. Communicating with UDC staff and clarifying the documents data is estimated to take 816 hours. ~~Once the data is complete and clearly understood, Energy Commission staff would evaluate the data and format to integrate into the development of regional or local area peak load estimates. The evaluation and formatting of the data is estimated to take 80 hours.~~ This work involves an understanding of both the research data and the peak load evaluations and would be performed by a mid-level Energy Commission staff, Energy Commission Specialist II. The fiscal year ~~2018/19~~~~2017/18~~ total annual cost for these activities is estimated at ~~\$1,787,556~~, for fiscal year ~~2019/20~~~~2018/19~~ the costs are ~~\$1,841,752~~, and for fiscal year ~~2020/21~~~~2019/20~~ the costs are ~~\$1,896,955~~.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the five largest UDCs are required to comply with the reporting requirements of this section. For these utilities, the costs associated with compliance with this section are negligible, and can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed Section 1344 (f) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect UDC operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this proposed regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits by incorporating peak load impacts from emerging behind-the-meter loads into the load data provided using electric meters. These benefits are discussed generally in the Benefits section of the ISOR, and specifically in the ISOR explanation of the Purpose and Necessity for this section.

The proposed regulations within Section 1344 (f) would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform all the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits, including the development of better electricity demand forecasts and an improved ability to track the role of these specific behind-the-meter activities in meeting the state's greenhouse gas emissions reduction and other energy goals. These are discussed generally in the Benefits section of the ISOR, and specifically in the explanation of the Purpose and Necessity for this section.

Section 1353 Disaggregated Demand Data

The proposed Section 1353 regulation requires each UDC that has either a peak electricity demand of 1,000 megawatts or more or natural gas utility that delivers 200 million therms or more for both of the

two preceding calendar years to report detailed customer data to the Energy Commission. This data would include interval meter data when available and would provide the data necessary to support data quality measures, track progress to meet goals, and allow for local forecasting analytics. Similar data is also required from the state's largest three natural gas utilities.

Section 1353 (a) Disaggregated Data Reporting

As the Energy Commission begins collecting more detailed information from the UDCs and natural gas utilities, specific reporting requirements associated with the new detailed information are required to ensure appropriate reporting, transmission, and explanations of the data. The proposed data reporting regulations specify the frequency and scope of the data delivery. In addition, the proposed regulations require the obligated parties to provide explanations of the data provided so the Energy Commission understands what the data represents and can make informed decisions about the appropriateness and uncertainty of the data use for Energy Commission analytical purposes.

Costs to Obligated Parties

The only costs attributable to subdivision (a) are those associated with the requirement that the obligated parties provide information regarding the methodology and procedures for estimating values would involve work on the part of the utilities to summarize and report to the Energy Commission. On the electric side, UDCs San Diego Gas & Electric Company, Southern California Edison Company, Pacific Gas and Electric Company, Los Angeles Department of Water and Power, and Sacramento Municipal Utility District will report. On the natural gas side, natural gas utilities Southern California Gas Company, San Diego Gas & Electric Company, and Pacific Gas and Electric Company will report. The six electric and natural gas utilities (four investor-owned utilities and two local publicly-owned electric utilities) required to report under Section 1353 (b) and (c) would need to identify and determine all methods used to estimate data that they would be reporting.¹⁵ It is estimated that it would take 160 hours in fiscal year ~~2018/19~~~~2017/18~~ to identify all the appropriate methods and would involve communication within the utilities across staff. The explanation of the methods and procedures would have to be summarized, which is estimated to take 80 hours. Once completed, the report would need to be provided to the Energy Commission and is estimated to take 5 hours each reporting cycle. It is assumed each of the six obligated parties use Systems Analyst staff at a rate of \$93 per hour.¹⁶ This results in costs for fiscal year ~~2018/19~~~~2017/18~~ of ~~\$114,948~~~~93,000~~ for investor-owned utilities, and ~~\$57,474~~~~46,500~~ for local publicly-owned electric utilities.¹⁷ Recurring costs would include packaging and sending the information, estimated at 5 hours for each submittal, and the additional time necessary to update the document if there are any changes to the methods or procedures, estimated at an average of ~~20~~~~10~~ hours for fiscal year ~~2018/19~~~~2017/18~~ and 20 hours for each subsequent fiscal year. Using the

¹⁵ There are six obligated parties for 1353 (a) since it covers both electricity (5) and natural gas (3) with two overlapping obligated parties.

¹⁶ The Energy Commission was unable to find a reference to salaries or rates specifically for a utility Systems Analyst but believes that the average contracted programmer rate of \$93 is a conservative estimate of the potential costs for the utilities. The actual rate of a utility analyst would likely be lower.

¹⁷ Of the 6 obligated utilities, 4 are investor-owned utilities while 2 are publicly owned.

\$93 per hour rate for UDC staff time, fiscal year ~~2018/19~~ costs are ~~\$22,990~~ for investor-owned utilities and ~~\$11,495~~ for local publicly-owned electric utilities, and for fiscal year 2019/20 costs are \$23,679 for investor-owned utilities and \$11,840 for local publicly-owned electric utilities, and for fiscal year 2020/21 costs are \$24,390 for investor-owned utilities and \$12,195 for local publicly-owned electric utilities.

Costs to the State

In order to understand the data provided to the Energy Commission, staff would need to evaluate and understand any estimation methodologies being used to compile the data provided to the Energy Commission. A review and discussion regarding the methodologies of the procedures identified by the utilities is estimated to take 120 hours. It is also estimated that staff would have questions regarding the methods and would need to work with utilities to clarify their understanding of the procedures. The communication and clarification of the methods is initially estimated to take 20 hours. The costs for fiscal year ~~2018/19~~~~2017/18~~ are ~~\$6,951~~~~6,748~~, assuming an Energy Commission Specialist II would be responsible for this work. Once the procedures are understood, future changes to the methods and any clarification discussions are estimated to take 20 hours total per year and result in a cost for fiscal year ~~2018/19~~ of ~~\$993~~, and a cost for fiscal year 2019/20 of \$1,023, and a cost for fiscal year 2020/21 of \$1,053.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the five largest electricity and three natural gas utilities are required to comply with the reporting requirements of this section. For these utilities, the costs associated with compliance with this section are negligible, and can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed Section 1353 (a) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect UDC or natural gas utility operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting the estimation methodologies would have indirect benefits, similar to those discussed below for subdivisions (b) and (c).

Section 1353 (b) Monthly and Interval Meter Electricity Data

The proposed data regulations require the largest five UDCs to provide customer-level monthly and interval data, with the interval depending on the metering technology for the customer. This data would be provided quarterly. Current data regulations require the UDCs to provide monthly consumption and revenue information aggregated by county and customer classification code on a quarterly basis. The proposed regulations would instead require the UDCs to replace the aggregated data by providing data by the customer meter.

Costs to Obligated Parties

The utilities are currently required to provide aggregated customer consumption information whereas the proposed regulations would require the UDCs to provide meter level customer data. Since the UDCs have been aggregating this data to report to the Energy Commission, providing the disaggregated information would require a modification of existing queries to their databases. The development of a query of the system to provide the proposed data is estimated to take ~~320~~¹⁶⁰ hours for each UDC over the first ~~two~~ fiscal years, costing approximately ~~\$153,264,750,000~~ each year (~~\$74,400~~ in fiscal year 2017/18 and ~~\$76,632~~ in fiscal year 2018/19) assuming a consultant Systems Analyst rate of \$93 per hour.

The collection of the data using the automated reporting process is estimated to take 10 hours for each quarterly report which would include data quality checks and resolving issues with the queried data. The data would need to be briefly summarized with a data dictionary or other explanations and then delivered to the Energy Commission. Summarizing the data is estimated to take 5 hours and reporting should only take an hour for each submitted report. This work would also be performed by a Systems Analyst with an hourly rate of \$93 per hour.

This results in costs for fiscal year ~~2018/19~~^{2017/18} of ~~\$110,350,535,568~~ for investor-owned utilities and ~~\$73,567,357,712~~ for local publicly owned electric utilities.¹⁸ Costs are estimated to be ~~\$18,943,643,371~~ and ~~\$12,629,429,914~~ respectively for privately owned and local publicly owned electric utilities in ~~2019/20~~^{2018/19}, and ~~\$19,512,189,943~~ and ~~\$13,008,12,629~~ respectively for privately owned and local publicly-owned electric utilities in ~~2020/21~~^{2019/20}.

Costs to the State

The Energy Commission is implementing a data repository solution that would be capable of managing the monthly and interval meter data proposed for collection in Section 1353 (b). The cost of data storage for this new data is discussed in the “Data Storage Costs” section of this Economic Impact Assessment. Because the Energy Commission’s existing framework for data governance and data management processes will apply to this new data there are no governance or management costs associated with the receipt of this new data. As discussed in that section, the Energy Commission estimates costs of ~~\$204,462,500,000~~ for ~~fiscal year 2018/19~~, and ~~\$390,926,787,718~~ for ~~fiscal year 2019/20~~, and ~~\$577,390~~ for ~~fiscal year 2020/21~~.⁴⁹

The data acquisition staging, testing, validation, and developing access procedures work will take a group of Energy Commission staff comprised of Senior Programmer Analysts and Energy Commission

¹⁸ Of the five obligated UDCs, three are investor-owned utilities while two are local publicly-owned electric utilities. All reporting and data collection costs are assumed to equal across all five utilities.

⁴⁹ As discussed in the General Assumption, Data Storage Costs estimation, the AWS S3 cost estimate is at \$39,659 for Fiscal Year 2018/19 and \$78,718 for Fiscal Year 2019/20. However, to be conservative, the Energy Commission has used \$50,000 for Fiscal Year 2018/19 as estimated by the Resources Agency to provide storage services.

Specialist IIs an estimated 1240 hours to complete these one-time activities across fiscal years ~~2017/18~~ and ~~2018/19~~ and 2019/20.

Ongoing data review and validation work would take about 160 hours each quarter. Resolving data issues is estimated to take 40 hours per quarter. Additionally, data analysis and making the data usable for forecasting staff is estimated to take another 60 hours per quarter. All of this work would be performed by Energy Commission Specialist IIs. The data review, data issue, and analysis work would result in fiscal year ~~2018/19~~~~2017/18~~ costs of ~~\$31,775,452~~, ~~\$7,944,856~~, and ~~\$11,916,784~~, respectively. The cost of housing the data is estimated to be ~~\$204,462,500~~ fiscal year 2018/19. The total costs to the Energy Commission are estimated at ~~\$302,269,893~~ in fiscal year ~~2018/19~~~~2017/18~~, ~~\$455,390,530~~ in fiscal year ~~2019/20~~~~2018/19~~, and ~~\$643,787,720~~ in fiscal year ~~2020/21~~~~2019/20~~.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the five largest UDCs are required to comply with the reporting requirements of this section. For these UDCs, the costs associated with compliance with this section are negligible, and the required reporting can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed revisions to Section 1353 (b) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect UDC operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit to the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would have indirect benefits, including the to the ability to perform regional and local electricity demand forecasts, the ability to perform data quality analyses, and the ability to cross reference data across data sets. These in turn will allow the Energy Commission to track the various factors that affect electricity consumption and the effectiveness of programs and policies designed to assist the state in meeting its reliability, greenhouse gas emissions reduction, and other energy goals. These are discussed generally in the Benefits section of the ISOR, and specifically in the explanation of the Purpose and Necessity for this section.

Section 1353 (c) Monthly Natural Gas Customer Data

The proposed regulations obligate natural gas utilities whose annual natural gas deliveries exceed 200 million therms in the two preceding calendar years (Pacific Gas and Electric, Southern California Gas, and San Diego Gas & Electric~~PG&E, SoCalGas, and SDG&E~~), to provide monthly data for each customer to which service is provided. This is basically the disaggregated data set of what is already provided to the Energy Commission in aggregated form under Section 1308.

Costs to Obligated Parties

In order to provide customer level natural gas data, each of the three obligated parties would need to develop queries of their metering and billing systems. Given the current aggregated reporting

requirements, the Energy Commission expects existing queries or methods for reporting could be modified to comply with the proposed customer-level data requirements. The Energy Commission estimates that to develop, test, validate the data collected, and develop reports for data delivery (the initial one-time query development) would take 200 hours in fiscal year 2018/19~~FY 2017/18~~. Data collection activities, compiling, validating, and summarizing the data is estimate to take a total of 60 hours (30 hours for collection and 30 hours for validation and summarizing) for each quarterly reporting. Once summarized, the data would be transferred to the Energy Commission to be incorporated into the existing data base that houses the current aggregated data. The Energy Commission estimates there to be an additional 10 hours of work for each quarterly reporting to deliver the detailed information. In fiscal year 2018/19~~2017/18~~, the total cost for obligated parties is estimated at \$136,264~~94,860~~ and includes the one-time costs. Annual costs in fiscal year 2019/20~~2018/19~~ are estimated at \$82,878~~80,464~~ and in fiscal year 2020/21~~2019/20~~ are estimated at \$85,364~~82,878~~.

Costs to the State

The Energy Commission would need to modify the existing data collection process to accommodate the new customer level data. This would involve expanding the existing data base, modifying the data acquisition processes, and performing new data quality and validation work on the data. One time development costs are estimated using a consultant programmer at an hourly rate of \$93 and Energy Commission Senior Programmer Analysts at an hourly rate of \$51.75. Most of this work would be modifying the system to incorporate the new data, to manage a web-based data loading process for reporting, and to test the new system.²⁰ These costs estimates include contracting for programming services.

The Energy Commission staff time would focus on reviewing, validating the data, and resolving data issues. It is estimated that it would take Energy Commission staff 80 hours to review and validate and an additional 40 hours to resolve any reporting issues for each quarterly reporting. Costs estimates are \$301,352~~153,727~~ for fiscal year 2018/19~~2017/18~~, \$182,228~~291,002~~ for fiscal year 2019/20~~2018/19~~, and \$144,155~~143,419~~ in fiscal year 2020/21~~2019/20~~.

Potential Impacts of Proposed Regulations (Gov. Code § 11346.3, subd.(b).)

Only the three largest natural gas utilities are required to comply with the reporting requirements of this section. For these utilities, the costs associated with compliance with this section are negligible, and can likely be performed by existing staff, without creating new positions. Similarly, the Energy Commission would be able to process this information with existing staff, without creating new positions. Consequently, the proposed revisions to Section 1353 (c) would likely not result in the creation or elimination of any jobs within California. Furthermore, because compliance with this section would not affect natural gas utility operations, this section would neither create nor eliminate any businesses doing business in California, or would it expand any existing businesses in California. Finally, because this regulation only provides for the collection of information by the Energy Commission for analytical purposes, there would be no direct benefit to the data collection to the health and welfare of California residents, to worker safety, or to the state's environment. However, collecting this information would

²⁰ The 3 year total hours for state work is 8410 hours of which 7210 is included as one time infrastructure costs.

have indirect benefits, including the data needed to perform regional and local forecasts, the ability to perform data quality processes, and the ability to cross reference data across data sets. These are discussed generally in the Benefits section of the ISOR, and specifically in the explanation of the Purpose and Necessity for this section. However, collecting this information would have indirect benefits, including the to the ability to perform regional and local natural gas demand forecasts and the ability to cross reference data across data sets. These in turn will allow the Energy Commission to track the various factors that affect natural gas consumption and the effectiveness of programs and policies designed to assist the state in meeting its reliability, greenhouse gas emissions reduction, and other energy goals. These are discussed generally in the Benefits section of the ISOR, and specifically in the ISOR explanation of the Purpose and Necessity for this section.

Section 2505 Designation of Confidential Records

The proposed regulatory changes within Section 2505 add a subdivision identifying new data collected under sections 1314 and 1353 as automatically confidential. Since the changes are purely administrative in nature and do not independently require additional reporting, the Energy Commission estimates there are no associated cost impacts.

Costs to Obligated Parties

There are no cost impacts to any obligated parties due to automatically designating new data submitted in sections 1314 and 1353 as confidential. The proposed language would not result in any changes to reporting processes.

Costs to the State

There are no cost impacts to the state due to automatically designating new data submitted in sections 1314 and 1353 as confidential. The proposed language would not result in any changes to reporting processes not already captured in other section evaluations.

Potential Impacts of Proposed Regulations

The proposed regulations within Section 2505 would not result in the creation or elimination of any jobs within California. Existing businesses and staff would perform all the work necessary to meet the new obligation. No new businesses would be created and neither would any existing business be eliminated by the new regulations. The proposed regulatory changes would not expand any existing businesses doing business in California and there would be no direct benefits of the data collection to the health and welfare of California residents, to worker safety, or to the state's environment.

Form 399 Methodology Discussion

Economic Impact Statement

A. Estimated Private Sector Cost Impacts

The total economic impact of the proposed regulations is estimated at ~~\$5,774,662,240,867~~ for the first three years, which would fall in the “below \$10 million” per year category.

The number of total businesses being impacted is the sum of private cogeneration owners and investor-owned utilities. There are 102 private owners of cogeneration facilities and 7 investor-owned utilities for a total number of businesses of 109.

The Energy Commission has identified only a single private owner of a cogeneration facility which could meet the statutory definition of a small business. Given that the total number of businesses impacted is 109, the percent of small businesses impacted is 1 divided by 109 or approximately 0.9 percent.

B. Estimated Costs

Energy Commission estimates the total cost for the first three years of implementation as being ~~\$5,774,662,240,867~~. As all reporting obligations would continue as long as the regulations were in place, salaries and state data storage costs would continue to increase, and the number of obligated parties might change, the total lifetime cost would be difficult to capture. Since the Economic and Fiscal Impact State document mentions a three-year time span, and because the regulations will be fully implemented after three years, Energy Commission staff used this as the basis of this total statewide cost estimate.

Table 2. Initial and Annual Ongoing Business Costs

Business	Number of Businesses	2017/18	2018/19	2019/20	2020/21
Investor Owned Utility	7	\$0 107,433	\$142,652 73,513	\$59,933	\$61,731
Private Cogeneration Owner	102	\$0 1,177	\$1,393 463	\$477	\$491
Weighted Average Cost	109	\$0 8,001	\$4,295 5,154	\$4,295	\$4,424

1. a. Small Business Cost Discussion

The small business “initial” cost is the estimated as the amount the small business is likely to pay in the year of implementation, fiscal year ~~2018/19~~~~2017/18~~. The small business is one of the 139 private and public owners of cogeneration facilities in the state and the total cost to these owners is ~~\$193,629,163,622~~ (~~\$129,270 + \$25,744 + \$25,744 + \$12,872~~~~\$119,552 + \$44,070~~); therefore, the fiscal year ~~2018/19~~~~2017/18~~ cost would be ~~\$1,393,177~~ (or (1/139) * ~~\$193,629,163,622~~). Similarly, during fiscal year ~~2019/20~~~~2018/19~~ the cost to the small business would be ~~\$477,463~~ (or (1/139) * ~~\$66,290,64,359~~) and ~~\$491,477~~ (or (1/139) * ~~\$68,278,66,290~~) in fiscal year ~~2020/21~~~~2019/20~~ both of which include a 3 percent annual salary increase. The three-year average for the impacted small business is ~~\$623,706~~.

1. b. Typical Business Cost Discussion

The typical initial costs for all affected businesses represents the cost of compliance with all new reporting requirements for private owners of cogeneration facilities and investor-owned utilities in fiscal year ~~2018/192017/18~~, divided by the total number of such entities. The sum of all costs in fiscal year ~~2018/192017/18~~ is ~~\$1,3931,177~~ for private owners of cogeneration facilities, and ~~\$142,652107,433~~ for investor-owned utilities. As mentioned above, the number of private owners of cogeneration facilities is 102 while the number of investor-owned utilities is 7. Therefore the weighted average initial cost impact is $((\$142,652107,433*7)+(\$1,3931,177*102))/(102+7)$ which equals ~~\$10,4658,001~~ in fiscal year ~~2018/192017/18~~.

By fiscal year ~~2020/212019/20~~, the regulations will be fully implemented; therefore, the costs in year three represent the ongoing cost of compliance, or the “typical annual impact” for each type of business affected by the proposed regulations. This represents ~~\$491477~~ for private owners of cogeneration facilities owners (including the single small business) and ~~\$61,73159,933~~ for investor-owned utilities, with a weighted average of ~~\$4,4244,295~~.

2. Discussion

The costs for owners of cogeneration facilities are ~~is~~ only due to proposed Section 1304 (a) regulations. The total cost over three years for owners of cogeneration facilities is ~~\$328,197294,270~~, the sum of both private and publicly-owned cogenerators three year costs in Table 1 (~~\$239,800215,011 + \$88,39779,259~~). The total three-year local public and private obligated party cost is ~~\$3,635,4333,172,403~~ (also from Table 1, ~~\$1,184,6221,063,842 + \$2,450,8102,108,561~~). Therefore the percentage of costs for cogeneration facility owners is 9 percent and the percentage of utility costs is 91 percent.

C. Estimated Benefits

Over the first three fiscal years the total statewide benefit would be sum of avoided costs to all obligated parties and the state which totals ~~\$13,24319,194~~ as shown at the bottom of Table 1.

Fiscal Impact Statement

A. Fiscal Effect on Local Government

Approximate annual savings is calculated using the total avoided cost for public obligated parties (local publicly-owned electric utilities), ~~\$5281,546~~ from Table 1, and dividing by ~~21.5~~ since the avoided costs are estimated for will begin in the middle of fiscal years ~~2019/20 and 2020/2118/19~~. Therefore the approximate annual savings is ~~\$1,5591,031~~.

B. Fiscal Effect on State Government

The approximate estimated expenditures are for the fiscal year when the regulations are implemented, fiscal year ~~2018/192017/18~~. From Table 1 above, the total state costs in fiscal year ~~2018/192017/18~~ are ~~\$644,820253,795~~.