

UCSB Economic Forecast Project

The Economic Impact of Developing the Cat Canyon Oilfield

Economic Impact Study
January 2015

Executive Summary

The goal of this project is to measure the economic impacts of the development of the East Cat Canyon oilfield by Aera Energy LLC (henceforth referred to as Aera). Aera commissioned this study to analyze the impacts that will occur over approximately 37 years from permitting and start up construction through the drilling and ongoing production operations of the field. The analysis utilizes economic modeling (IMPLAN Pro) and statistical analysis, relying on current and projected data provided by Aera.

The Cat Canyon oilfield in Santa Maria is the largest oilfield in Santa Barbara County. In spite of also being one of the oldest oilfields in the county, there has been renewed interest in its potential as technological advances have created a situation where reserves previously considered unrecoverable are now deemed to be recoverable. Aera is seeking to redevelop the East Cat Canyon oilfield, and the report's findings show that this project will have a significant impact on Santa Barbara County's economy as a result of investment in new structures and equipment, purchases of goods and services (intermediate inputs), and employment within the county.

In input-output terminology, expenditures by a firm will generate three types of impact: direct impacts, indirect impacts, and induced impacts. In the context of this study, for example, an initial expenditure by Aera (such as a payment to a local company for raw materials) is referred to as a *direct impact*. The company receiving the payment from Aera is expected to buy some of its inputs locally. If the company receiving the payment from Aera increases its purchases because of its business with Aera, these additional purchases are referred to as *indirect impacts*. Finally, employees of the firms that are impacted both directly and indirectly are expected to spend some of their income locally. The additional local spending by these employees generated through this mechanism is referred to as the *induced impact*. In describing the economic impact, we consider these three types of impact.

We recreate the significant findings of the report in the tables and bullet points below. Because of the significant upfront capital expenditures, we discuss the total impact in two parts - dividing capital expenditures that occur in the initial years of the project (capital expenditure impacts) from annual ongoing well drilling, operating expenses, and labor costs (annual impacts) that occur during the production period.

Between 2014 and 2024, a significant amount of capital expenditures will be spent on technical and environmental consulting, engineering, project management, and construction. The impacts from these expenditures, detailed below, are in addition to the annual economic impacts from drilling and production (detailed further below).

Table 1: East Cat Canyon Development – Capital Expenditures, 2014-2024: Cumulative Economic Impacts

Impact Type	Employment	Output
Direct Effect	1,542.7	\$ 323,590,308
Indirect Effect	433.8	\$ 56,823,303
Induced Effect	504.7	\$ 65,627,102
Total Effect	2,481.3	\$ 355,040,713

Note: Impacts stated in 2014 dollars.

- The total economic impact of these capital expenditures will be roughly \$355 million; an additional 2,481 jobs will be supported over this ten-year period because of the capital expenditures associated with the redevelopment of the East Cat Canyon oilfield.
- The most heavily impacted sectors (as measured by both employment and output) are construction of new nonresidential structures; architectural, engineering, and related services; and management, scientific, and technical consulting services. The impact to these sectors accounts for 61 percent of the total employment impact and 63 percent of the total output impact.
- It is also estimated that the capital expenditures in the 2014-2024 period will support a total of \$28.8 million in federal taxes and \$15.8 million in state and local taxes.
- Companies producing onshore oil and gas in Santa Barbara are taxed by the assessed property taxes on land and structures as well as inspection fees of equipment (ad valorem taxes). Cumulative ad valorem taxes over the entire redevelopment of the East Cat Canyon oilfield are estimated to range between \$128 and \$134 million.
- All the estimated impacts associated with capital expenditures are cumulative. That is, while capital expenditures are projected to fluctuate and occur over the ten-year period, the estimated impacts described above account for the impact from all the expenses for the entire period.

Table 2: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Average Annual Economic Impacts

Impact Type	Employment	Output
Direct Effect	67.8	\$ 18,467,667
Indirect Effect	28.9	\$ 4,472,961
Induced Effect	54.3	\$ 7,079,285
Total Effect	150.9	\$ 30,019,913

Note: Impacts stated in 2014 dollars.

- The projected average annual economic impact from drilling and production at the East Cat Canyon oilfield will be \$30 million. Direct impacts account for \$18.5 million, while indirect impacts and induced impacts account for \$4.5 million and \$7 million respectively.
- The corresponding output multiplier effect is 1.6. This implies that for every dollar Aera spends on drilling and production at the East Cat Canyon oilfield, an additional \$0.60 will be generated by the activity of its suppliers and employees.
- Drilling and production at the East Cat Canyon oilfield will support an average of 151 jobs every year. Almost 68 of these jobs will be supported through direct expenditures made by Aera, while the remaining 83 jobs will be supported by indirect and induced impacts.
- The corresponding jobs multiplier is 2.2. This implies that for every job supported by Aera through direct expenditures, another 1.2 jobs are created through the additional economic activity.
- Drilling and production at East Cat Canyon oilfield will support, on average, an estimated \$3.6 million in tax revenue annually; \$2.2 million will go towards federal tax revenue, while \$1.3 million will go towards state and local tax revenue.

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Introduction

Project Context

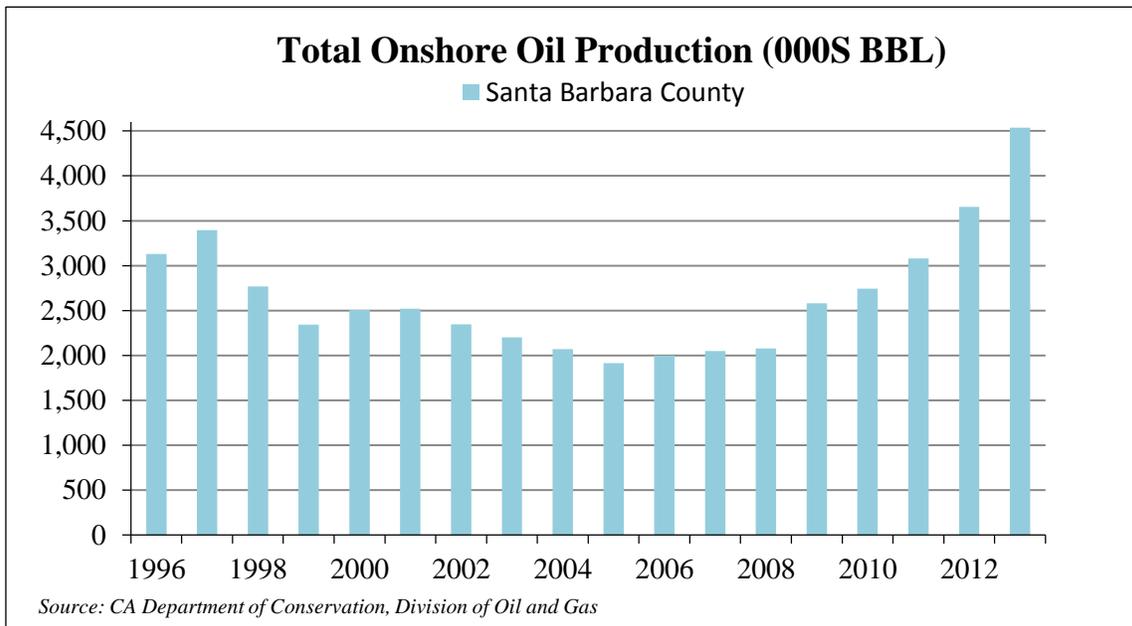
The Cat Canyon oilfield in Santa Maria is not only the largest oilfield in Santa Barbara County, it was the twentieth largest oilfield in California, based on cumulative production in 2010. The field was first discovered in 1908 and was eventually developed to become one of the most productive fields in California.¹ The Cat Canyon oilfield is now one of the oldest in Santa Barbara County, but there has been renewed interest in its potential as technological advances have created a situation where reserves previously considered unrecoverable are now deemed to be recoverable. The East Cat Canyon area comprises Cat Canyon North and Cat Canyon South, both areas with numerous existing oil wells.

Santa Barbara County Oil Trends

We briefly present current oil production trends to provide a context for the East Cat Canyon project. Onshore oil trends in Santa Barbara County have exhibited varying tendencies over the past 20 years. From the mid-1990s to the mid-2000s there was a significant drop in production; 2005 was the lowest production year in recent history. However, the oil industry began to pick back up in 2009 and production has grown by 76 percent over the last five years. Onshore oil production in Santa Barbara County is currently around 4.5 million barrels of oil per year and is at the highest production level in the past 20 years.

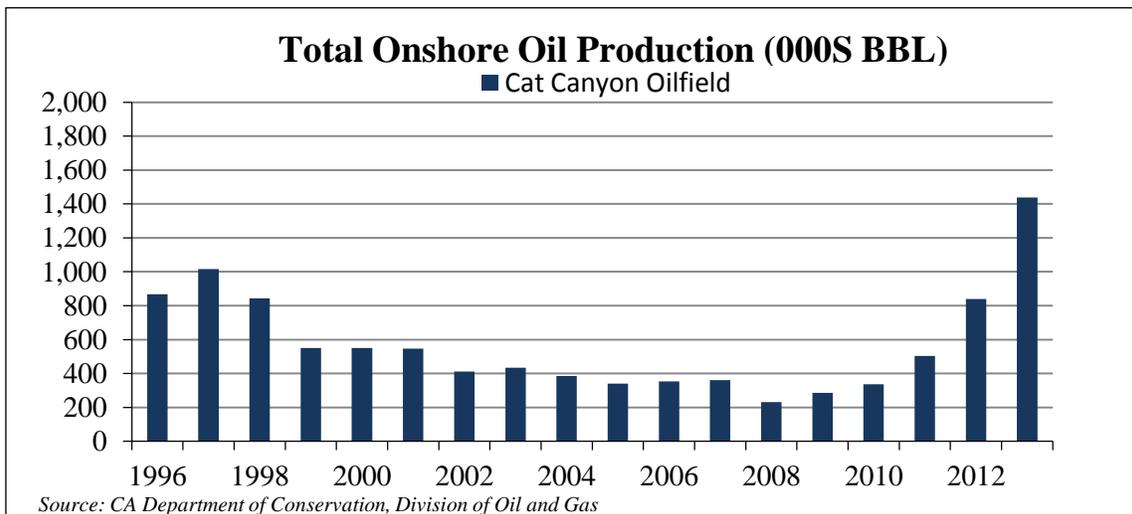
¹ California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, “2009 Report of the State Oil and Gas Supervisor”.

Figure 1: Onshore Oil Production, Santa Barbara County, 1996-2013



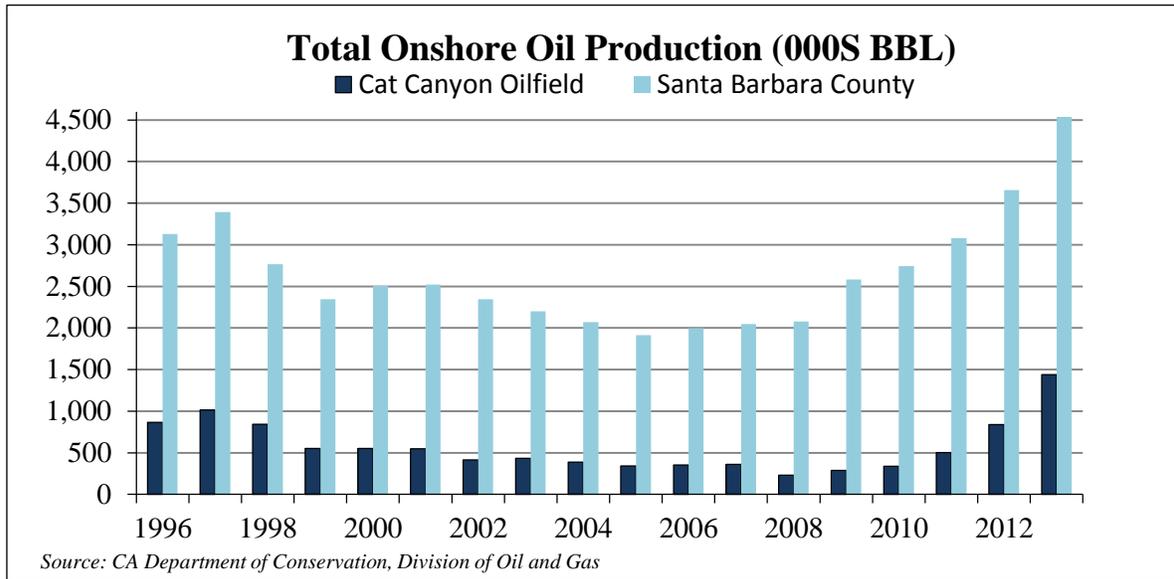
Oil production trends for the Cat Canyon oilfield have been very similar to those for Santa Barbara County as a whole. Oil production in the field experienced a steady decline from 1997-2005, but made a resurgence beginning in 2011. By 2013, oil production had increased so much that it was 34 percent higher than the previous peak in the past 20 years.

Figure 2: Onshore Oil Production, Cat Canyon, 1996-2013



When oil trends for Santa Barbara County and the Cat Canyon oilfield are viewed on the same graph, it can be seen that, on average, oil production in the Cat Canyon oilfield comprises 20 percent of the total onshore oil production for Santa Barbara County.

Figure 3: Onshore Oil Production, Cat Canyon and Santa Barbara County, 1996-2013



Project Description

Aera is seeking to redevelop the East Cat Canyon oilfield over several years pending approval of a Santa Barbara County land use development permit. The development project will be built out in two phases. Start up construction, expected to begin in 2017, includes plans to build facilities and drill wells to produce 5,000 barrels of oil per day. Full build out of the project will include a second phase of construction, expanding facilities and drilling additional wells to increase capacity to 10,000 barrels of oil per day. The operational results and monitoring data collected from the first phase will help to confirm the project’s reservoir models and production forecasts, prior to additional second phase investment and construction. Phase one results will also help to optimize the phase two design, minimize its footprint, and evaluate the feasibility of alternatives such as pipeline transportation.

The oil produced at the East Cat Canyon oilfield will be transported to the San Joaquin Valley. In the San Joaquin Valley, existing infrastructure can facilitate shipment to either San Francisco or Los Angeles area refineries.

Methodology

The goal of this study is to capture the total economic impact of the development of the East Cat Canyon oilfield by Aera. This is accomplished by examining the project within the context of the local economy and examining the *backward linkages* that occur in the economy. Backward linkages measure the effect of the company's purchases of goods and services (intermediate inputs), investment in new structures and equipment, and employment within the county. This section describes the methodology in calculating the economic impact including the study area definition, modeling software, and data sources.

Study Area Description

We define the study area as Santa Barbara County for the years 2014-2050. Aera is one of California's largest oil and gas producers and is classified under the *National American Industry Classification System* (NAICS) industry 21111 – Oil and Gas Extraction, defined below.

***NAICS 21111. Oil and Gas Extraction.** This industry comprises establishments primarily engaged in operating and/or developing oil and gas field properties and establishments primarily engaged in recovering liquid hydrocarbons from oil and gas field gases. Such activities may include exploration for crude petroleum and natural gas; drilling, completing, and equipping wells; operation of separators, emulsion breakers, de-silting equipment, and field gathering lines for crude petroleum and natural gas; and all other activities in the preparation of oil and gas up to the point of shipment from the producing property. This industry includes the production of crude petroleum, the mining and extraction of oil from oil shale and oil sands, the production of natural gas, sulfur recovery from natural gas, and the recovery of hydrocarbon liquids from oil and gas field gases.*

IMPLAN

The modeling software used for the economic analysis was IMPLAN Pro™, an input-output model first developed by the U.S. Forest Service, the Bureau of Land Management and the Federal Emergency Management Agency for use in land planning and resource management. Input-output models are accounting tables tracing the linkages of inter-industry purchases and sales in a specific study area, and they are used to calculate the effects per dollar of spending on jobs, income, and output in that specific area. These

models produce estimates of local spending impacts (referred to as multipliers) using these inter-industry linkages.

IMPLAN uses information about the types and amounts of production factors – raw materials, labor, and intermediate goods – needed to produce any given output. IMPLAN uses dollar valuations of these inputs, and traces the currency flows from the original purchases of goods as they work their way through the study area economy.

In input-output terminology, expenditures by a firm will generate three types of impact: direct impacts, indirect impacts, and induced impacts. In the context of this study, for example, an initial expenditure by Aera (such as a payment to a local company for raw materials) is referred to as a *direct impact*. The company receiving the payment from Aera is expected to buy some of its inputs locally. If the company receiving the payment from Aera increases its purchases because of its business with Aera, these additional purchases are referred to as *indirect impacts*. Finally, employees of the firms that are impacted both directly and indirectly are expected to spend some of their income locally. The additional local spending by these employees generated through this mechanism is referred to as the *induced impact*.

Data Description

Aera’s development of the East Cat Canyon oilfield will be implemented in a phased approach. These phases, which were outlined in the [Project Description](#) section, are outlined in Table 3 and provide a natural framework to analyze the total economic impact of the development of the East Cat Canyon oilfield.

Table 3: Phases of the Development of East Cat Canyon

Phase	Brief Description
Phase I	Permitting, construction and start up activities. Well-drilling begins; central processing facility (CPF) constructed; producing operations commence
Phase II	Design enhancements implemented, processing capacity of the CPF is doubled; additional wells drilled; producing operations continue

Aera created capital expenditure projections for each of the two phases of development. These projections were used in conjunction with staffing projections and operating expense projections to determine the total economic impact of the development of East Cat

Canyon. Operating expense projections were obtained by analyzing the current operating expenses for a similar (both in terms of size and production capacity) oilfield in California. Using this analog field allowed projections to be as accurate and detailed as possible, resulting in more reliable estimates of the economic impacts. Staffing projections were created by Aera for the East Cat Canyon oilfield and found to be similar to the staffing needs and wages existing in the analog oilfield.

Table 4 below shows the breakdown of the total expenditures Aera will make on the development of the East Cat Canyon oilfield. Over half of the total expenditures will be spent on drilling oil and gas wells and support activities for oil and gas operations. Construction expenditures will account for almost 19 percent of total expenditures while wholesale trade businesses will receive 12 percent of total expenditures. The remaining sectors listed in Table 4 will each account for less than 3 percent of total expenditures.

Table 4: Percent Breakdown of Total Operating and Capital Expenditures, by Expenditure Sector, 2014-2050

IMPLAN Sector	Percentage of Total Expenditures (%)
Drilling oil and gas wells	27.1%
Support activities for oil and gas operations	24.4%
Construction of new nonresidential commercial buildings	15.5%
Construction of other new nonresidential structures	13.0%
Wholesale trade businesses	12.3%
Architectural, engineering, and related services	2.6%
Management, scientific, and technical consulting services	2.6%
Environmental and other technical consulting services	0.8%
Maintenance and repair construction	0.3%
Electric power generation, transmission, and distribution	0.3%

Economic Impacts

In this section, we present the economic impact of the development of the East Cat Canyon oilfield by Aera. The economic impact consists of impacts associated with capital expenditures in the development stage (2014-2024), as well as the impacts associated with drilling and operations through 2050.

This project requires significant capital investment in the initial years of the project. Over 70 percent of the total amount spent on technical consulting - including engineering, project management, and permitting – occurs during the first 5 years of the study. The remaining 30 percent will be spent by 2024. Similarly, the central processing facility (CPF) is largely constructed during the years 2018-2019, with the second major round of construction occurring during the years 2022-2024.

Because of these significant upfront capital expenditures, we discuss the total impact in two parts - dividing capital expenditures that occur in the initial years of the project from well drilling, operating expenses, and labor costs.

First, we present the capital expenditure economic impacts. While the capital expenditures will fluctuate in magnitude throughout the ten-year period of the two development phases, the impacts are presented as a cumulative impact. That is, they represent the total impact from capital expenditures occurring between 2014 and 2024.

Second, we present the economic impacts of the well drilling, operating expenses, and labor costs. Because of the long span of the project, the impacts associated with well drilling, operating expenses, and labor costs are presented as an annual average for the period 2014-2050. That is, while well drilling, operating expenses, and labor costs will fluctuate in magnitude throughout the life of the project, the numbers presented here were calculated by determining the total impacts and dividing them by 37 years (corresponding to the 2014-2050 period). Each annual table presented below has a corresponding table in Appendix A where the total (cumulative) impacts for the next 37 years are detailed.

As described below, this project has a widespread impact throughout many sectors in Santa Barbara County. The total impact includes the *direct impact* through the initial expenditures, the *indirect impact* through the jobs created and value added occurring throughout the supply chain, and the *induced impact* through the additional spending that occurs as a result of increased labor income.

Capital Expenditure Economic Impacts, 2014-2024

In the start up years (2014-2024), large capital expenses occur on technical and environmental consulting, engineering, and project management. Throughout this period, construction of the central processing facility (CPF) will take place. This facility will provide the necessary infrastructure to clean and produce oil. In addition, office, warehouse, and plant control room buildings will be constructed. Toward the end of this ten-year period, the processing capacity of the CPF will be doubled to handle the increase in produced fluids. The resulting total (cumulative) impacts are presented below.

Table 5: East Cat Canyon Development – Capital Expenditures, 2014-2024: Cumulative Economic Impacts

Impact Type	Employment	Output
Direct Effect	1,542.7	\$ 323,590,308
Indirect Effect	433.8	\$ 56,823,303
Induced Effect	504.7	\$ 65,627,102
Total Effect	2,481.3	\$ 355,040,713

Note: Impacts stated in 2014 dollars.

The total economic impact of the capital expenditures will be approximately \$355 million. Roughly \$232 million of this impact will come from direct expenditures made by Aera; the remaining \$133 million will come from indirect and induced impacts. These capital expenditures will support a total of 2,481 jobs over the years 2014-2024.

Output Impacts by Sector

Table 6: East Cat Canyon Development – Capital Expenditures, 2014-2024: Cumulative Output Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Total Output Impact
Construction of new nonresidential commercial and health care structures	\$ 158,150,195
Architectural, engineering, and related services	\$ 37,988,065
Management, scientific, and technical consulting services	\$ 27,584,933
Wholesale trade businesses	\$ 22,089,174
Imputed rental activity for owner-occupied dwellings	\$ 10,534,983
Real estate establishments	\$ 8,058,853
Monetary authorities and depository credit intermediation	\$ 7,031,493
Food services and drinking places	\$ 6,916,929
Environmental and other technical consulting services	\$ 5,606,711
Offices of physicians, dentists, and other health practitioners	\$ 4,805,095

Note: Impacts stated in 2014 dollars.

The bulk of the economic impact – both in terms of output and employment – occurs in three main sectors: Construction of new nonresidential commercial and health care structures; architectural, engineering, and related services; and management, scientific, and

technical consulting services. Together, these sectors will experience an output increase of \$224 million over the 2014-2024 period, and 1,520 jobs will be supported in these three sectors during this period.

Employment Impacts by Sector

Table 7: East Cat Canyon Development – Capital Expenditures, 2014-2024: Cumulative Employment Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Total Employment Impact
Construction of new nonresidential commercial and health care structures	958.8
Architectural, engineering, and related services	319.1
Management, scientific, and technical consulting services	242.9
Food services and drinking places	105.7
Wholesale trade businesses	99.8
Environmental and other technical consulting services	64.7
Employment services	52.2
Real estate establishments	41.0
Offices of physicians, dentists, and other health practitioners	37.7
Private hospitals	25.8

Annual Average Drilling and Production Operations Economic Impacts, 2014-2050

The estimated annual average economic impact to the Santa Barbara County economy directly attributable to the development of the East Cat Canyon oilfield is roughly \$18.5 million. These direct expenditures in the county will support almost 68 jobs every year.

Table 8: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Average Annual Economic Impacts

Impact Type	Employment	Output
Direct Effect	67.8	\$ 18,467,667
Indirect Effect	28.9	\$ 4,472,961
Induced Effect	54.3	\$ 7,079,285
Total Effect	150.9	\$ 30,019,913

Note: Impacts stated in 2014 dollars.

This direct spending will lead to annual indirect impacts of \$4.5 million and induced impacts of approximately \$7 million. These further impacts will support an additional 83 jobs in the county every year.

The total economic impact of the development of the East Cat Canyon oilfield will be roughly \$30 million annually. The corresponding output multiplier of the project is 1.6 ($30,019,913/18,467,667 = 1.6$). This implies that for every dollar Aera spends developing the East Cat Canyon oilfield, an additional \$0.60 will be generated by the activity of its suppliers and employees.

The development of the East Cat Canyon oilfield will support a total of 151 jobs annually. The corresponding jobs multiplier is 2.2 ($150.9/67.8 = 2.2$). This implies that for every job supported by Aera through direct expenditures, another 1.2 jobs are created through the additional economic activity.

Output Impacts by Sector

The sectors most affected by the activity of the development of the East Cat Canyon oilfield are for services related to drilling oil and gas wells and supporting the day-to-day oil and gas operations. Drilling oil and gas wells accounts for \$7.4 million of the total annual output impact, or 25 percent. Support activities for oil and gas operations account for another 23 percent, or \$6.8 million of the annual output impact. Construction activities will be another heavily impacted sector and is expected to experience \$3.6 million output impact annually.

Other sectors heavily impacted include imputed rental activity for owner occupied dwellings (\$1.1 million), architectural, engineering, and related services (\$0.7 million), and

real estate establishments (\$0.7 million). Table 5 below details the top ten sectors whose output is most affected by Aera’s development of the East Cat Canyon oilfield.

Table 9: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Average Annual Output Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Annual Output Impact
Drilling oil and gas wells	\$ 7,470,253
Support activities for oil and gas operations	\$ 6,766,644
Construction of other new nonresidential structures	\$ 3,589,793
Imputed rental activity for owner-occupied dwellings	\$ 1,143,595
Architectural, engineering, and related services	\$ 715,213
Real estate establishments	\$ 712,627
Monetary authorities and depository credit intermediation	\$ 611,052
Securities, commodity, and investment services	\$ 609,136
Food services and drinking places	\$ 606,369
Wholesale trade businesses	\$ 536,202
Note: Impacts stated in 2014 dollars.	

Employment Impacts by Sector

In terms of employment, the development of the East Cat Canyon oilfield will support 34 jobs annually in companies that provide support activities for oil and gas operations. In the construction sector, 21 jobs will be supported every year. Other sectors that will be impacted include drilling oil and gas wells (10 jobs will be supported annually), food services and drinking places (9 jobs will be supported annually), and architectural, engineering, and related services (6 jobs will be supported annually). Table 6 below details the top ten sectors whose employment will be most affected by Aera’s development of the East Cat Canyon oilfield.

Table 10: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Average Annual Employment Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Annual Employment Impact
Support activities for oil and gas operations	33.6
Construction of other new nonresidential structures	21.1
Drilling oil and gas wells	9.5
Food services and drinking places	9.3
Architectural, engineering, and related services	6.0
Offices of physicians, dentists, and other health practitioners	4.1
Securities, commodity, and investment services	3.7
Real estate establishments	3.6
Private hospitals	2.8
Employment services	2.7

Tax Impacts

The IMPLAN model generates the estimated impact on federal, state, and local tax revenue as a result of the economic impacts discussed above. These tax revenue estimates are a result of the spending and employment that occurs because of the development of the East Cat Canyon oilfield. Although ad valorem taxes are not included in the model, estimates provided by Aera are presented in Table 20. The tax estimates below do not include further governmental fees that Aera is required to pay for compliance and permitting. To better identify when tax impacts occur, we again divide the analysis into tax impacts that result from significant capital investment in the initial years of the project from tax impacts that occur annually due to well drilling, operating expenses, and labor costs.

Capital Expenditure Cumulative Tax Impacts

Detailed cumulative tax impacts resulting from the initial investment of capital expenditures in the 2014-2024 period is presented below in Table 11. During this ten-year period, roughly \$44.5 million will be collected in federal, state, and local taxes as a result of the development of the East Cat Canyon oilfield. Of this amount, \$15.8 million will go to state and local governments, while the rest will be paid to the federal government.

Table 11: East Cat Canyon Development – Capital Expenditures, 2014-2024: Cumulative Tax Impacts

Description of Tax	Estimated Contribution
<i>Federal Taxes</i>	
Social Insurance Tax- Employee Contribution	\$6,723,983
Social Insurance Tax- Employer Contribution	\$7,336,832
Indirect Business Tax: Excise Taxes	\$726,463
Indirect Business Tax: Custom Duty	\$288,006
Indirect Business Tax: Fed NonTaxes	\$82,533
Corporate Profits Tax	\$2,208,389
Personal Tax: Income Tax	\$11,382,307
Total Federal Tax	\$28,748,512
<i>State and Local Taxes</i>	
Dividends	\$23,886
Social Insurance Tax- Employee Contribution	\$196,743
Social Insurance Tax- Employer Contribution	\$386,816
Indirect Business Tax: Sales Tax	\$4,772,747
Indirect Business Tax: Property Tax	\$4,214,095
Indirect Business Tax: Motor Vehicle License	\$104,306
Indirect Business Tax: Severance Tax	\$3,028
Indirect Business Tax: Other Taxes	\$711,969
Indirect Business Tax: S/L NonTaxes	\$65,472
Corporate Profits Tax	\$501,373
Personal Tax: Income Tax	\$4,008,549
Personal Tax: Non-taxes (Fines and Fees)	\$563,139
Personal Tax: Motor Vehicle License	\$169,314
Personal Tax: Property Taxes	\$63,505
Personal Tax: Other Tax (Fish/Hunt)	\$38,644
Total State and Local Taxes	\$15,823,586
Note: Impacts stated in 2014 dollars.	

Drilling and Production Average Annual Tax Impacts

Average annual tax impacts from drilling and production are reported in Table 12.

Table 12: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Average Annual Tax Impacts

Description of Tax	Estimated Contribution
<i>Federal Taxes</i>	
Social Insurance Tax- Employee Contribution	\$471,299
Social Insurance Tax- Employer Contribution	\$562,085
Indirect Business Tax: Excise Taxes	\$65,777
Indirect Business Tax: Custom Duty	\$26,077
Indirect Business Tax: Fed NonTaxes	\$7,473
Corporate Profits Tax	\$332,240
Personal Tax: Income Tax	\$776,931
Total Federal Tax	\$2,241,883
<i>State and Local Taxes</i>	
Dividends	\$3,593
Social Insurance Tax- Employee Contribution	\$15,073
Social Insurance Tax- Employer Contribution	\$29,635
Indirect Business Tax: Sales Tax	\$432,144
Indirect Business Tax: Property Tax	\$381,562
Indirect Business Tax: Motor Vehicle License	\$9,444
Indirect Business Tax: Severance Tax	\$274
Indirect Business Tax: Other Taxes	\$64,465
Indirect Business Tax: S/L NonTaxes	\$5,928
Corporate Profits Tax	\$75,429
Personal Tax: Income Tax	\$273,615
Personal Tax: Non-taxes (Fines and Fees)	\$38,439
Personal Tax: Motor Vehicle License	\$11,557
Personal Tax: Property Taxes	\$4,335
Personal Tax: Other Tax (Fish/Hunt)	\$2,638
Total State and Local Taxes	\$1,348,130
Note: Impacts stated in 2014 dollars.	

The development of the East Cat Canyon oilfield will support an estimated \$3.6 million in tax revenue every year. The federal annual tax revenue impact is estimated to be \$2.2 million, or 62% of the total annual tax impact. Roughly \$1.0 million of this \$2.2 million

is in the form of social insurance taxes (i.e. Medicare), while \$777,000 is estimated to come from personal income taxes paid by households. Federal corporate profit taxes comprise roughly \$332,000 of the federal annual tax impact.

The state and local annual tax revenue impact is estimated to be \$1.3 million. The largest component is generated by sales taxes paid by businesses; we estimate the impact on sales tax revenue to be approximately \$432,000. Property taxes paid by businesses also comprise a large amount of the state and local tax impacts; roughly \$382,000 is expected to come from this source.

How Santa Barbara County Taxes Petroleum (Ad Valorem Taxes)

Companies producing onshore oil and gas in Santa Barbara are taxed by the assessed property taxes on land and structures as well as inspection fees of equipment. Santa Barbara County reports that in 2010, it collected a total of approximately \$8 million in property taxes from onshore oil production land and infrastructure. An additional \$318,000 was collected from fees for inspection wells and tanks.²

Property taxes are based on capital expenditures, production and projected economic reserves. Aera estimates the cumulative ad valorem taxes over the entire project will range between \$128 - \$134 million. In the early phases of the project, annual ad valorem taxes will range between \$1.5 - 2.5 million per year, reaching a high of \$5 - \$8 million per year in the mid years of the project. Taxes will start to track downward to \$1.5 - 2.5 million per year as reserves are depleted in the remaining years of the project.

Conclusion

The development of the East Cat Canyon oilfield by Aera will be a source of strong, stable growth in an industry that has continued to generate economic activity in Santa Barbara County. Over the 2014 to 2024 period, capital expenditure investment will result in an increase of \$345 million in total output. An additional 2, 427 jobs will be supported over this same time period.

In addition, over its projected life (2014 – 2050), this project will add, on average, \$30 million in output every year to Santa Barbara County's economy through drilling and op-

² Source: Oil Production Tax Proposal: Staff Report to the Board of Supervisors on Oil Production Tax Operations, *County of Santa Barbara*, 2012

erating expenses. About 151 jobs will be supported annually, on average, through these expenditures.

The development of the East Cat Canyon oilfield is part of a growing investment in new production technology to recover previously unrecoverable reserves. As the infrastructures are put in place to produce the oil available, this and other similar projects will provide a strong source of future economic vitality to Santa Barbara County.

Appendix A: Total Drilling and Production Operations Impacts over the years 2014-2050

Table 8A: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Cumulative Economic Impacts

Impact Type	Employment	Output
Direct Effect	2,507.9	\$ 683,303,679
Indirect Effect	1,068.5	\$ 165,499,561
Induced Effect	2,007.6	\$ 261,933,541
Total Effect	5,584.0	\$ 1,110,736,782

Note: Impacts stated in 2014 dollars.

Table 9A: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Cumulative Output Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Total Output Impact
Drilling oil and gas wells	\$ 276,399,368
Support activities for oil and gas operations	\$ 250,365,811
Construction of other new nonresidential structures	\$ 132,822,333
Imputed rental activity for owner-occupied dwellings	\$ 42,313,023
Architectural, engineering, and related services	\$ 26,462,897
Real estate establishments	\$ 26,367,197
Monetary authorities and depository credit intermediation	\$ 22,608,913
Securities, commodity, and investment services	\$ 22,538,018
Food services and drinking places	\$ 22,435,639
Wholesale trade businesses	\$ 19,839,459

Note: Impacts stated in 2014 dollars.

Table 10A: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Cumulative Employment Impacts by Economic Sector, Top Ten Impacted Sectors

Sector	Total Employment Impact
Support activities for oil and gas operations	1,241.3
Construction of other new nonresidential structures	780.7
Drilling oil and gas wells	352.8
Food services and drinking places	343.0
Architectural, engineering, and related services	222.3
Offices of physicians, dentists, and other health practitioners	151.7
Securities, commodity, and investment services	135.0
Real estate establishments	134.2
Private hospitals	103.7
Employment services	100.3

Table 12A: East Cat Canyon Development – Drilling and Production Operations, 2014-2050: Cumulative Tax Impacts

Description of Tax	Estimated Contribution
<i>Federal Taxes</i>	
Social Insurance Tax- Employee Contribution	\$17,438,081
Social Insurance Tax- Employer Contribution	\$20,797,152
Indirect Business Tax: Excise Taxes	\$2,433,747
Indirect Business Tax: Custom Duty	\$964,858
Indirect Business Tax: Fed NonTaxes	\$276,497
Corporate Profits Tax	\$12,292,897
Personal Tax: Income Tax	\$28,746,443
Total Federal Tax	\$82,949,675
<i>State and Local Taxes</i>	
Dividends	\$132,959
Social Insurance Tax- Employee Contribution	\$557,691
Social Insurance Tax- Employer Contribution	\$1,096,478
Indirect Business Tax: Sales Tax	\$15,989,339
Indirect Business Tax: Property Tax	\$14,117,781
Indirect Business Tax: Motor Vehicle License	\$349,439
Indirect Business Tax: Severance Tax	\$10,145
Indirect Business Tax: Other Taxes	\$2,385,192
Indirect Business Tax: S/L NonTaxes	\$219,341
Corporate Profits Tax	\$2,790,868
Personal Tax: Income Tax	\$10,123,741
Personal Tax: Non-taxes (Fines and Fees)	\$1,422,229
Personal Tax: Motor Vehicle License	\$427,610
Personal Tax: Property Taxes	\$160,384
Personal Tax: Other Tax (Fish/Hunt)	\$97,596
Total State and Local Taxes	\$49,880,793
Note: Impacts stated in 2014 dollars.	

