

# NATURAL GAS MORATORIUM: LOS ANGELES COUNTY



*an  
EXECUTIVE  
SUMMARY*



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The LAEDC Institute for Applied Economics provides objective economic and policy research for public agencies and private firms. The group focuses on economic impact studies, regional industry analyses, economic forecasts and issue studies, particularly in workforce development, transportation, infrastructure and environmental policy.

Every reasonable effort has been made to ensure that the data contained herein reflect the most accurate and timely information possible and they are believed to be reliable.

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## EXECUTIVE SUMMARY

On December 15<sup>th</sup>, 2017, the California Public Utilities Commission (CPUC) issued a draft resolution, G-3536, to impose an emergency moratorium on all new natural gas service connections across Los Angeles County for commercial and industrial users. The moratorium is proposed to begin on January 11, 2018 and last until CPUC lifts the abeyance or March 31, 2018, whichever occurs first.

The Los Angeles County Economic Development Corporation's (LAEDC) Institute for Applied Economics examined the potential economic implications of the proposed moratorium, including the direct, indirect and induced employment impacts within Los Angeles County.

### Background and Purpose of Inquiry

CPUC Draft Resolution G-3536 proposes to temporarily halt all new commercial and industrial natural gas connections in Los Angeles County.

There may be discernible economic costs associated with such a suspension, primarily due to the fact that industrial, commercial and retail industries depend on natural gas to fulfill their energy needs. And, this temporary suspension could make electric service connections much more expensive for business and real estate development, leading potentially to the suspension or termination of current development contracts as well as the postponement of new commercial projects.

To address these concerns and provide additional insight into potential economic ramifications of this policy proposal, the LAEDC performed a preliminary empirical analysis using relevant data and econometric techniques, as described in the following section.

### Data and Methodology

Econometric time series analysis was used to forecast the resulting effect on jobs for two scenarios: first, the current, "business as usual" path without the implementation of the moratorium; and second, the implementation of the proposed moratorium. Each case was simulated to generate an ensemble of forecasts, and the *difference* in average number of *projected jobs created* under both scenarios yielded a final estimate of the jobs impact of the moratorium in Los Angeles County.

Indirect and induced impacts were estimated using models developed with software and data from the IMPLAN Group, Inc. The economic region of interest was circumscribed to Los Angeles County. Utilizing county-level employment from the State of California Employment Development Department and limited natural gas port installation data from a natural gas utility, the LAEDC used econometric simulation techniques to forecast the effects of the proposed moratorium.

As noted above, the economic forecast employed two competing scenarios, one in which the moratorium went into effect and one in which natural gas service installation continued unabated. For purposes of this analysis, the moratorium scenario was regarded as a hard moratorium, that is, one in which an alternative utility connection was not offered to offset or mitigate the loss in natural gas connections. This assumption was made in the absence of data to suggest otherwise. Since the moratorium, if implemented, is projected to last from January 11<sup>th</sup> through March 2018, the forecasts were similarly tailored to reflect this time span.

Industry level employment, revenue and economic loss predictions reflect the current industry breakdown of current employment in Los Angeles County. Meaning, job loss predictions were based upon current industry employment distribution in the county, and income, output and tax losses reflect the hypothesized scenario of these people not working. Specific industry-level predictions should be interpreted with these assumptions in mind and do not reflect the economic dynamics that would also likely impact the actual number of jobs and associated economic losses precipitated by the moratorium.

It should again be noted that none of the economic impact forecast estimates were mitigated by the projected implementation of an alternative energy source. All forecasts were performed using the assumption of either regular natural gas port installation or a complete moratorium on new commercial and industrial connection installation. Moreover, it should be noted that these impacts may be underestimated due to spillover effects into neighboring counties. Furthermore, the limited temporal range of the forecasts did not account for continuing employment losses in successive months. Finally, all losses should be regarded under a *ceteris paribus* assumption, that is, all other unaccounted economic variables remain constant.

## LAEDC Employment Impact Forecast

If implemented, Draft Resolution G-3536, which would impose an emergency moratorium on all new natural gas service connections across Los Angeles County for commercial and industrial users, will have the following estimated economic and job impacts over the course of the moratorium (January 11<sup>th</sup> through March 2018):

- ▶ 5,160 *fewer* total jobs would be created
- ▶ \$879.5 million lost in future economic output
- ▶ \$323.9 million lost in future labor earnings
- ▶ \$119.7 million lost in future federal, state and local tax revenues, of which \$13.3 million and \$5.8 million will be lost in tax revenues to Los Angeles County and local cities, respectively

The total jobs lost are distributed amongst the current industry employment composition in Los Angeles County. Forecast specifics are presented in Exhibits 1 through 4 below. Again, non-aggregate estimates were made under the *ceteris paribus* assumption and between two competing scenarios. For the purpose of these forecasts, a hard moratorium implies a suspension of natural gas service expansion with no substitute service. The assumption of a hard moratorium was made in lieu of data suggesting substitute to natural gas services.

It should be reiterated that employment loss figures are meant to indicate that roughly 5,200 jobs *would not* be created under the forecast scenario assuming the implementation of a moratorium. This figure should not be taken to mean that this number of jobs will be lost as a result of the moratorium. Rather, the proper inference is that of an opportunity cost, that is, the policy goals of the moratorium will result in almost 5, 200 *not* being created or supported in Los Angeles County.

LAEDC notes that this forecast is *only* intended to provide an initial insight into the potential economic implications and impacts of a moratorium. LAEDC suggests that a more comprehensive report be commissioned by policymakers using a more extensive sample of past natural gas service data, employing more specific industry impact data and assimilating information related to natural gas connection substitutions.

Exhibit 1 shows the total economic and fiscal impact of the estimated 5,160 jobs *not* being created in Los Angeles County absent of any mitigating impacts.

### Exhibit 1

#### Economic and Fiscal Impact

<b>Total Economic Impact:</b>	
Output (\$ millions)	\$879.5
Employment (jobs)	5,160
<i>Direct</i>	2,970
<i>Indirect and induced</i>	2,190
Labor earnings (\$ millions)	\$323.9
<b>Total Fiscal Impact (\$ millions)</b>	
State and local tax revenues	\$45.7
Federal tax revenues	74.0

Source: Estimates by LAEDC

Exhibit 2 includes a detailed fiscal impact of the total *loss* in tax revenues from the 5,160 jobs *not* being created in Los Angeles County including federal, state and local government impacts.

### Exhibit 2

#### Detailed Fiscal Impact

##### By Type of Tax (\$ millions):

Personal income taxes	\$34.0
Social insurance	34.4
Sales and excise taxes	17.7
Property taxes	12.7
Corporate income taxes	14.4
Other taxes and fees	6.4
<b>Total</b>	<b>\$119.7</b>

##### By Type of Government (\$ millions):

Federal	\$74.0
State	26.5
County	13.3
<i>Property taxes</i>	\$10.4
<i>Sales taxes</i>	2.9
Cities	\$5.8
<i>Property taxes</i>	2.3
<i>Sales taxes</i>	1.2
<i>Other fees and fines</i>	2.3
<b>Total</b>	<b>\$119.7</b>

Source: Estimates by LAEDC; May not sum due to rounding

Exhibit 3 estimates direct, indirect and induced employment impacts of the moratorium. Please note that the distribution of employment impacts reflects the current industry distribution in Los Angeles County.

### Exhibit 3

#### Employment Impacts by Industry Sector

	Direct	Indirect	Induced	Total
11 Ag, Forestry, Fish & Hunting	2	-	-	3
21 Mining	8	6	1	15
22 Utilities	6	2	1	9
23 Construction	95	17	9	122
31-33 Manufacturing	172	19	10	201
42 Wholesale Trade	140	31	27	198
44-45 Retail trade	230	48	163	441
48-49 Transportation & Warehousing	90	66	30	187
51 Information	126	47	19	193
52 Finance & insurance	154	119	84	357
53 Real estate & rental	188	103	66	356
54 Professional- scientific & tech svcs	275	153	47	475
55 Management of companies	33	31	7	71
56 Administrative & waste services	208	216	63	487
61 Educational svcs	70	3	51	125
62 Health & social services	382	3	264	648
71 Arts- entertainment & recreation	109	42	41	191
72 Accomodation & food services	224	52	164	439
81 Other services	182	39	119	340
92 Government & non NAICs	278	19	11	308
<b>Total</b>	<b>2,972</b>	<b>1,016</b>	<b>1,177</b>	<b>5,160</b>

Source: Estimates by LAEDC; May not sum due to rounding

Exhibit 4 includes an estimate the *total* employment, labor income and output that will not be created in Los Angeles County as a result of the moratorium and absent any mitigating impacts.

### Exhibit 4

#### Employment Impacts by Industry Sector

	Employment	Labor Income (\$M)	Output (\$M)
11 Ag, Forestry, Fish & Hunting	3	\$0.1	\$0.2
21 Mining	15	2.8	7.0
22 Utilities	9	1.5	7.5
23 Construction	122	8.5	24.3
31-33 Manufacturing	201	16.21	100.1
42 Wholesale Trade	198	15.8	47.5
44-45 Retail trade	441	18.7	42.0
48-49 Transportation & Warehousing	187	11.8	30.7
51 Information	193	26.1	107.0
52 Finance & insurance	357	27.8	71.1
53 Real estate & rental	356	9.3	105.3
54 Professional- scientific & tech svcs	475	43.0	86.1
55 Management of companies	72	8.7	18.2
56 Administrative & waste services	487	18.9	33.6
61 Educational svcs	125	6.5	10.8
62 Health & social services	648	36.4	62.6
71 Arts- entertainment & recreation	191	9.9	21.5
72 Accomodation & food services	439	13.9	32.0
81 Other services	340	15.7	27.3
92 Government & non NAICs	308	32.3	44.9
<b>Total</b>	<b>5,160</b>	<b>\$323.9</b>	<b>\$879.5</b>

# Appendix

## Description of Industry Sectors

The industry sectors used in this report are established by the North American Industry Classification System (NAICS). NAICS divides the economy into twenty sectors, and groups industries within these sectors according to production criteria. Listed below is a short description of each sector as taken from the sourcebook, *North American Industry Classification System*, published by the U.S. Office of Management and Budget (2012).

*Agriculture, Forestry, Fishing and Hunting:* Activities of this sector are growing crops, raising animals, harvesting timber, and harvesting fish and other animals from farms, ranches, or the animals' natural habitats.

*Mining:* Activities of this sector are

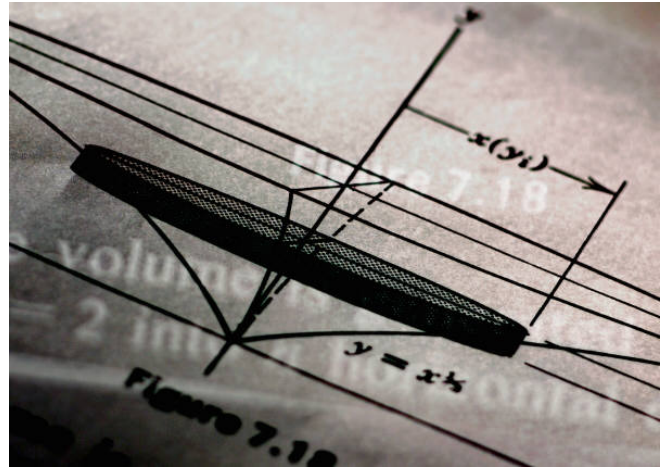
extracting naturally-occurring mineral solids, such as coal and ore; liquid minerals, such as crude petroleum; and gases, such as natural gas; and beneficiating (e.g., crushing, screening, washing and flotation) and other preparation at the mine site, or as part of mining activity.

*Utilities:* Activities of this sector are generating, transmitting, and/or distributing electricity, gas, steam, and water and removing sewage through a permanent infrastructure of lines, mains, and pipes.

*Construction:* Activities of this sector are erecting buildings and other structures (including additions); heavy construction other than buildings; and alterations, reconstruction, installation, and maintenance and repairs.

*Manufacturing:* Activities of this sector are the mechanical, physical, or chemical transformation of material, substances, or components into new products.

*Wholesale Trade:* Activities of this sector are selling or arranging for the purchase or sale of goods for resale; capital or durable non-consumer goods; and raw and intermediate materials and supplies used in production, and providing services incidental to the sale of the merchandise.



*Retail Trade:* Activities of this sector are retailing merchandise generally in small quantities to the general public and providing services incidental to the sale of the merchandise.

*Transportation and Warehousing:* Activities of this sector are providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.

*Information:* Activities of this sector are distributing information and cultural products, providing the means to transmit or distribute these products as data or communications, and processing data.

*Finance and Insurance:* Activities of this sector involve the creation, liquidation, or change of ownership of financial assets (financial transactions) and/or facilitating financial transactions.

*Real Estate and Rental and Leasing:* Activities of this sector are renting, leasing, or otherwise allowing the use of tangible or intangible assets (except copyrighted works), and providing related services.

*Professional, Scientific, and Technical Services:* Activities of this sector are performing professional, scientific, and technical services for the operations of other organizations.

*Management of Companies and Enterprises:* Activities of this sector are the holding of securities of companies and enterprises, for the purpose of owning controlling interest or influencing their management decision, or administering, overseeing, and managing other establishments of the same company or enterprise and normally undertaking the strategic or organizational planning and decision-making of the company or enterprise.

*Administrative and Support and Waste Management and Remediation Services:* Activities of this sector are performing routine support activities for the day-to-day operations of other organizations, such as: office administration, hiring and placing of personnel, document preparation and similar clerical services, solicitation, collection, security and surveillance services, cleaning, and waste disposal services.

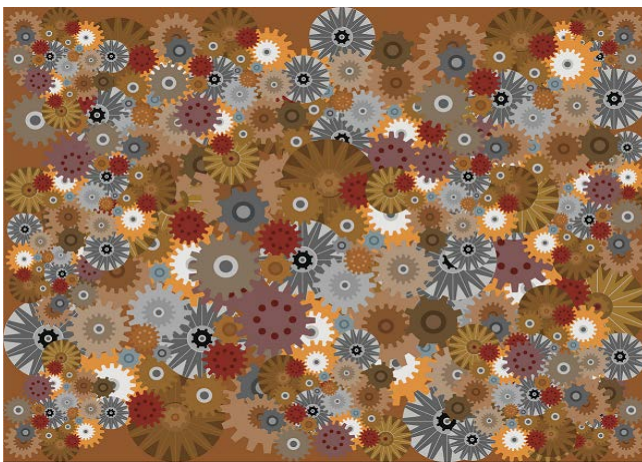
*Educational Services:* Activities of this sector are providing instruction and training in a wide variety of subjects. Educational services are usually delivered by teachers or instructors that explain, tell, demonstrate, supervise, and direct learning. Instruction is imparted in diverse settings, such as educational institutions, the workplace, or the home through correspondence, television, or other means.

*Health Care and Social Assistance:* Activities of this sector are operating or providing health care and social assistance for individuals.

*Arts, Entertainment and Recreation:* Activities of this sector are operating facilities or providing services to meet varied cultural, entertainment, and recreational interests of their patrons, such as: (1) producing, promoting, or participating in live performances, events, or exhibits intended for public viewing; (2) preserving and exhibiting objects and sites of historical, cultural, or educational interest; and (3) operating facilities or providing services that enable patrons to participate in recreational activities or pursue amusement, hobby, and leisure-time interests.

*Accommodation and Food Services:* Activities of this sector are providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.

*Other Services (except Public Administration):* Activities of this sector are providing services not specifically provided for elsewhere in the classification system. Establishments in this sector are primarily engaged in activities, such as equipment and machinery repairing, promoting or administering religious activities, grant-making, advocacy, and providing dry-cleaning and laundry services, personal care services, death care services, pet care services, photofinishing services, temporary parking services, and dating services. ❖





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