

JOINT LEGISLATIVE COMMITTEE ON CLIMATE CHANGE POLICIES

Assemblymember Eduardo Garcia, Chair

ASSEMBLY COMMITTEE ON JOBS, ECONOMIC DEVELOPMENT, AND THE ECONOMY

Assemblymember Sharon Quirk-Silva, Chair



Photos Courtesy of Green Tech

Informational Hearing

*Supporting a Just Transition to a Lower Carbon
Economy*

August 30, 2017

Joint Legislative Committee on Climate Change Policies

Assembly Member Eduardo Garcia (Chair)
State Senator Ben Hueso (Vice Chair)
Assembly Member Autumn Burke
State Senator Anthony Cannella
Assembly Member Jordan Cunningham
Assembly Member Jim Frazier
State Senator Nancy Skinner
State Senator Henry Stern

Assembly Committee on Jobs, Economic Development, and the Economy

Assemblywoman Sharon Quirk-Silva (Chair)
Assemblyman Travis Allen (Vice Chair)
Assembly Member Marc Berman
Assembly Member Sabrina Cervantes
Assembly Member Timothy Grayson
Assembly Member Freddie Rodriguez
Assembly Member Marc Steinorth

Committee Staff

Toni Symonds, Chief Consultant
Katie Valenzuela Garcia, Principal Consultant
Matthew Hurley, Committee Secretary

Republican Caucus, Offices of Policy

Julia King, Principal Consultant
John Kennedy, Senior Consultant
Morgan Branch, Senate Policy Consultant

Supporting a Just Transition to a Lower Carbon Economy

Table of Contents

Hearing Overview	Page 1
Background on California's High-Carbon Economy	Page 2
Framing the Issues	Page 6
Key Policy Questions	Page 8
Materials in the Appendices	Page 9
Committee Contact Information	Page 9

Appendices

Appendix A - Hearing Agenda	Page iii
Appendix B - Fast Facts on the California Economy	Page iv
Appendix C Selection of Related-Legislation	Page vii
Appendix D Selection of Related-Reports	Page ix
Appendix E Materials Submitted by the California Independent Petroleum Association	Page ix
Appendix F Witness Biographies	Page xvii

Supporting a Just Transition to a Lower Carbon Economy

Wednesday, August 30, 2017, the Joint Legislative Committee on Climate Change Policies (JLCCCP) will be convening the fourth in a series of informational hearings designed to provide committee members with a foundation from which to undertake the committee's statutory mission of overseeing the state's climate change policies. The hearing will be jointly convened with the Assembly Committee on Jobs, Economic Development, and the Economy (JEDE), the Assembly policy committee which oversees issues related to business and economic development, including workforce preparation.

Hearing Overview

While climate change is an environmental problem, its solutions are rooted in economic and social change. In this hearing, Members will have an opportunity to hear directly from business, labor, and community leaders about actions already being undertaken, as well as discuss new actions and priorities to provide for a just transition to a lower carbon economy. The goal is to assist the state in moving from a range of one-off environmental initiatives to an integrated set of actions that engage across a broad set of business and community players.

For the purposes of the hearing, the Committees will be using the term "just transition" to refer to intentional actions and investments that result in new economic opportunities, sustainable business enterprises, vibrant communities, and viable career pathways for those potentially displaced, disenfranchised, or otherwise impacted by climate change. Because the state's objective is to transition to a lower carbon economy, it will be important that state actions be carefully examined to ensure that they do not further exacerbate existing social and economic conditions, such as income inequality, poverty, environmental injustice, and other challenges to economic growth, upward mobility, and community prosperity.

The hearing is organized in three parts: opening remarks by Members to set the framework for the hearing; a dialogue with industry and labor leaders on industry innovations and evolving workforce needs; and presentations on models and initiatives that could be employed to set an equitable and comprehensive transition to a lower carbon economy. A public comment period is scheduled upon the conclusion of the formal presentations. An agenda for the hearing can be found in *Appendix A* (page iii) and *Appendix F* (page xvii) includes biographies of the invited speakers.

Industry Dialogue on Technology Innovations and Evolving Workforce Needs

Emission trends have historically been correlated to economic growth. However, as California invests in a less carbon intensive economy that correlation is becoming less significant. Industry and labor leaders will discuss how technological innovations are changing how they do business, and how the state can continue to partner with businesses and workers to ensure emissions reductions efforts continue to expand even as greenhouse gas emissions (GHG) decline. **Kristin Decas** of the California Association of Port Authorities, **Michael Shaw** of the California Manufacturing and Technology Association, and **Rock Zierman** of the California Independent Petroleum Association will speak about the innovations taking place within their various industry groups and their predictions for what the future needs will be, both for industry and their workforce. **Cesar Diaz** of the State Building & Construction Trades Council of California will speak about labor's perspective on the transition to a lower carbon economy and what

his organization is doing to ensure their members are able to take advantage of new green collar job opportunities.

Presentations on Models and Initiatives for an Inclusive Transition

Although California's unemployment rates have completely rebounded from the recession, reaching 5.4% in 2016, this rise in employment does not mean that potential workers in a majority of the state can access quality jobs. As California continues to invest millions in transitioning to a lower carbon economy, it is important for the Legislature to track implementation and encourage the adoption of best practices. This is essential to the goal of achieving and maintaining high quality jobs and ensuring the success of businesses participating in this transition. **Bob Lanter** of the California Workforce Association will speak about statewide employment trends and barriers to entry. **Jim Caldwell** of the California Community Colleges Strong Workforce Program, **Malaki Seku-Amen** of the California Urban Partnership, and **Simeon Gant** of Green Technical Education and Employment will discuss best practices in workforce development and their predictions for continued workforce needs to ensure an equitable and inclusive transition.

Public Comment

A public comment period will follow the panel discussion and presentations. Representatives from business, industry, labor, and workforce development are encouraged to sign-up and add their voices to this important dialogue.

Individuals interested in providing testimony during Public Comment may sign-up through the JEDE Committee Office, 24 hours prior to the hearing, or on the Public Comment sheet that will be available at the Sergeants' Desk during the hearing. Written comments may also be submitted to the JLCCCP or JEDE offices up until September 30, 2017.

Background on California's High-Carbon Economy

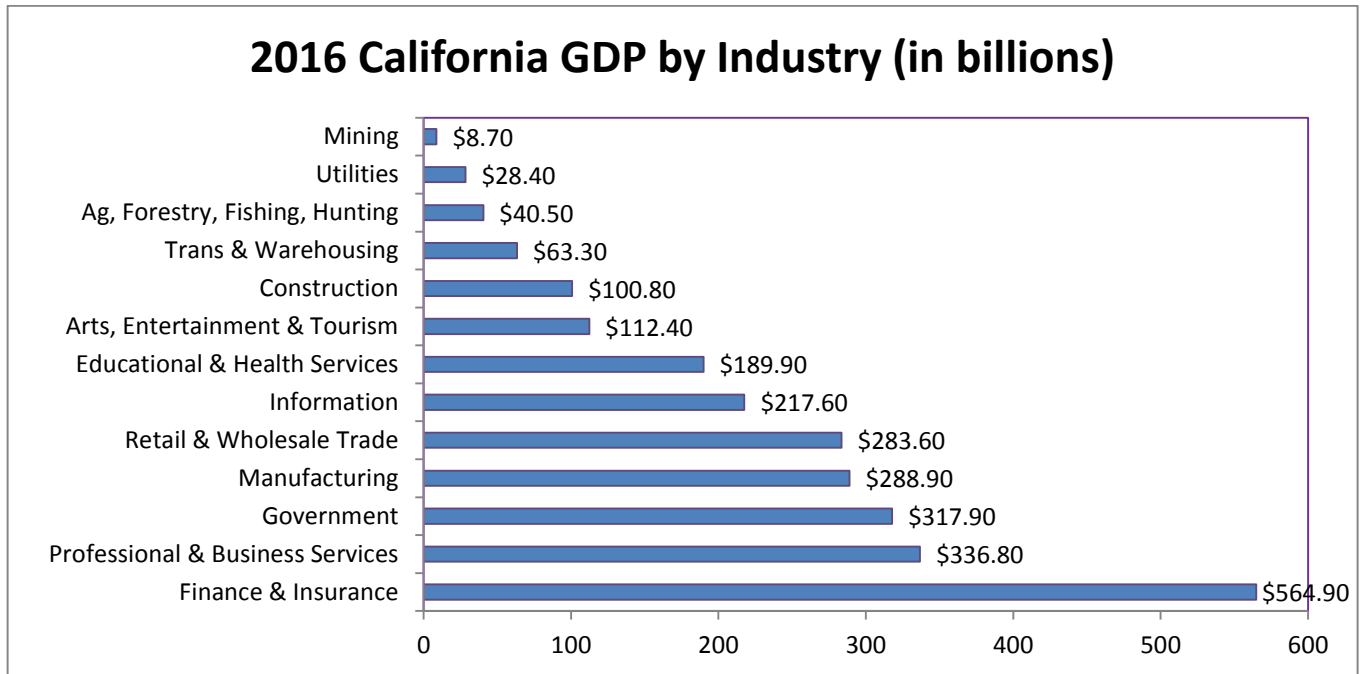
This section includes background on the state's current economy and the opportunities for setting policies and making investments to support an equitable transition to a lower carbon economy.

California's Economy

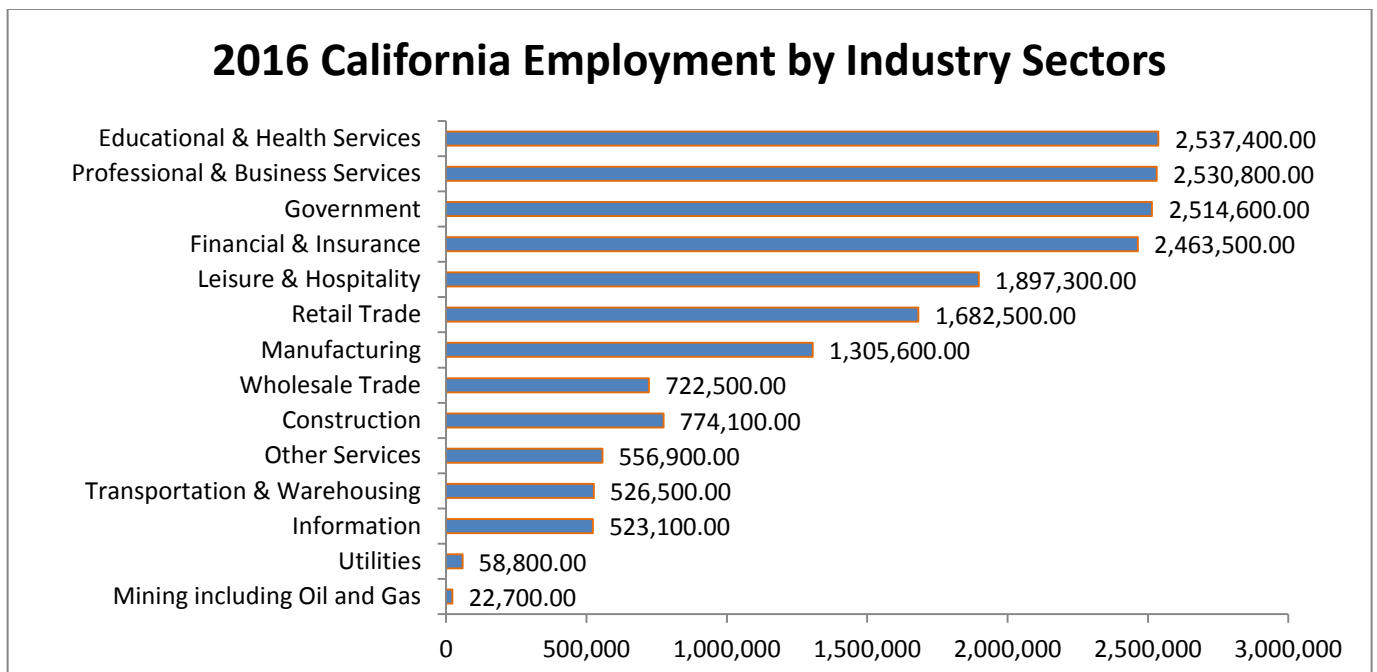
California is home to over 39 million people, providing the state with one of the most diverse populations in the world, often comprising the single largest concentration of nationals outside their native country. In 2016, this diverse group of business owners and workers produced \$2.6 trillion in goods and services; \$163.6 billion of which were exported to over 220 countries around the world. California's 2016 GDP ranks the state economy as the sixth largest in the world.

Many policy makers and economists describe California as having not a single economy, but having a highly integrated network of a dozen or so regional economies. While biotech has a comparative advantage in some regions, information technology drives growth in others. This economic diversity is one of the reasons California was able to so aggressively move out of the recession, ranking number two in the nation by *Business Insider* for fastest growing economy in the nation in August 2014 and as having the fourth best overall economy in March 2015. More recently, Bloomberg, a financial news service, reported that without California, the US economic growth rate would have been flat in 2016.

There are approximately 19.2 million people within the California workforce, generally contributing to over a dozen industry sectors, plus government. *Appendix B* includes a fact sheet on the California economy (page iv). The chart below displays California 2016 GDP as reported by industry sector.



The Finance and Insurance sector is consistently the largest contributor to state GDP. In 2016 contributing 21.7% to the California economy, including 14% of all jobs in the state. The state's two primary industry sectors in terms of GDP, Finance & Insurance and Professional & Business Services, provide a foundation to other industry sectors, including Manufacturing and Information. As shown in the chart below, Education & Health Services represent the industry with the largest number of employees.



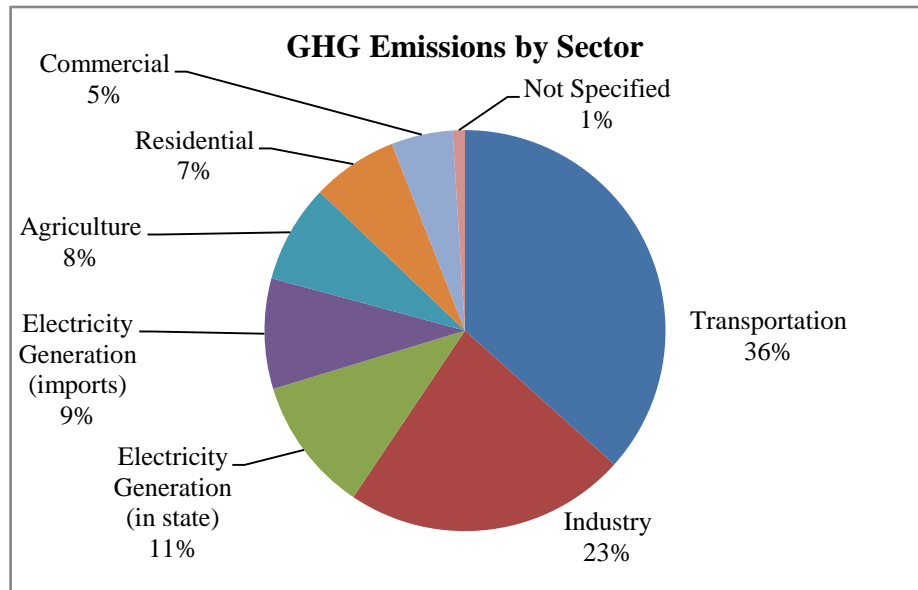
Global and domestic markets are constantly evolving. The pace of this change is increasing as digitization, among other trends, causes the radical reordering of "traditional" industry boundaries and interrelationships. As California transitions to a lower carbon economy, it is important to note that each of these industry sectors will also be impacted/disrupted by a range of other external inputs.

Greenhouse Gas Emissions and Economic Growth

While providing significant economic advantages in terms of revenue and jobs, California's industry sectors are also primary contributors to the state's greenhouse gas emissions. Since 2008, California has adopted GHG emission reduction limits and a range of policies to mandate and in some cases encourages the attainment of these limits. A selected list of this legislation is located in *Appendix C* (Page vii).

In January 2015, Governor Brown announced a commitment to set new greenhouse gas emissions reduction targets. The Governor's Integrated Plan calls for:

- 50% of the state's electricity to come from renewable energy sources by 2030;
- A 50% reduction in petroleum by 2030;
- Doubling the energy efficiency savings at existing buildings by 2030;
- A Carbon sequestration strategy that involves new management techniques for the state's working landscapes, including farms, ranch lands, forests, and wetlands;
- A reduction in short-lived climate pollutants; and
- Mitigation strategies to safeguard California against the impacts of climate change.



Meeting these new policy goals will require substantial restructuring within the economy, especially for manufacturing, energy production, and transport-related activities. Both workers and businesses will be impacted, requiring retraining, retooling, and repositioning. While this transition opens new opportunities for some, it also places new burdens on those that have not necessarily recovered from the impact of the Financial Crisis and subsequent recession.

California's current economy appears to be diverging in two disparate directions. On the one hand, state unemployment is at a seven-year low (4.7%) and certain businesses and regions are experiencing strong economic growth. On the other hand, there are areas of the state and certain population groups who

remain economically distressed with high unemployment rates among blacks (7.7%), Hispanics (6.1%), young workers (19.2%), and inland California [Imperial County at (20.8%) and Colusa (11.9%)].

California's poverty rate is the highest in the nation, with one-in-five Californians living below the federal poverty rate. In June 2017, more than 863,000 persons (4.7% of those employed) worked part time involuntarily, with an estimated employment participation rate of 62.2% in California.

Transitioning to a lower carbon economy has economic costs which need to be acknowledged if the state is to successfully move forward. The development and adoption of new technologies at a scale sufficient to meet the state's climate change goals requires smarter regulatory frameworks, new investments in human and physical infrastructure, and policies that recognize that no one is disposable. Research shows that a high level of income inequality serves as an impediment to long-term economic growth. An inclusive economy that embraces change and recognizes and addresses business challenges can provide a path toward upward mobility and economic security, while still meeting GHG reduction goals.

Opportunities in the Lower Carbon Economy

California's clean energy and technology economy encompasses a broad range of products and services, touching upon multiple industry sectors. This includes clean technologies such as alternative energy generation, wastewater treatment, and the production of environmentally-friendly consumer products. Although some of these industries are very different, they all use innovative technologies, products, and services that have environmental benefits.

Growth within the cleantech industry is driven by two separate, but convergent factors. One, continuing advances in technologies, research methods, manufacturing, and communications that lower the cost of environmentally sensitive technologies; and two, an increasing number of consumers and businesses that are looking for ways to reduce energy costs, increase clean water supply, and meet new environmental regulatory requirements at the local, state, and global levels. Governments, in turn, have adopted new regulatory frameworks that require greater use of recyclable materials, higher percentages of renewable energy, and lower levels of air pollution and GHG emissions.

Addressing climate change, in particular, requires a range of products and services for increasing building efficiency, upgrading electricity generation, delivery and management, and advanced transportation and fuel production. These technologies are continually evolving, as illustrated in the chart below, which was adapted from a chart developed by the Cleantech San Diego.

Examples of Cleantech Businesses	
Agriculture	Bio-based materials; farm efficiency technologies; micro-irrigation systems; bio-remediation; and non-toxic cleaners and natural pesticides.
Air & Environment	Air purification products and air filtration systems; energy efficient HVAC; universal gas detectors; multi-pollutant controls; and fuel additives to increase efficiency and reduce toxic emissions.
Materials	Biodegradable materials derived from seed proteins; micro-fluidics technology for conducting biochemical reactions; nano-materials; composite materials; thermal regulating fibers and fabrics; environmentally-friendly solvents; nano-technology components for electronics, sensor applications and energy storage; electro-chromic glass; and thermoelectric materials.

Energy	<p><u>Energy Efficiency</u>: Energy management systems; systems that improve output of power generating plants; intelligent metering; solid state micro refrigeration; control technology for HVAC systems; and automated energy conservation networks.</p> <p><u>Energy Generation</u>: Distributed and renewable energy and conversion, including wind, solar/photovoltaic (PV), hydro/marine, biofuels, fuel cells, gasification technologies for biomass, and flywheel power systems.</p> <p><u>Energy Infrastructure</u>: Wireless networks to utilities for advanced metering; power quality monitoring and outage management; integrated electronic systems for the management of distributed power; and demand response and energy management software.</p> <p><u>Energy Storage</u>: Batteries, e.g. thin film and rechargeable; power quality regulation; flywheels; and electro-textiles.</p>
Manufacturing and Industrial	Advanced packaging; natural chemistry; sensors; smart construction materials; business process and data flow mapping tools; precision manufacturing instruments & fault detectors; and chemical management services.
Recycling & Waste	Recycling technologies; waste treatment; internet marketplace for materials; hazardous waste remediation; and bio-mimetic technology for advance metals separation and extraction.
Transportation	Hybrid vehicle technology; lighter materials for cars; smart logistics software; car-sharing; and temperature pressure sensors to improve transportation fuel efficiency; telecommuting.
Water & Wastewater	Water recycling and ultra-filtration systems (e.g. UV membrane & ion exchange systems); sensors and automation systems; and water utility sub-metering technology; desalination equipment.
Source: Cleantech San Diego	

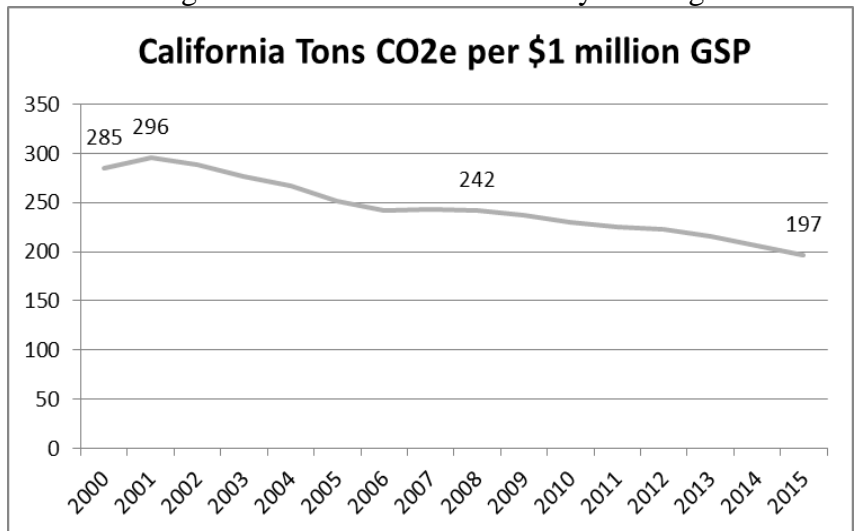
According to the 2017 Market Report by the Advanced Energy Economy Institute, the U.S. advanced energy subsector alone generates \$200 billion in revenue, which is equal to pharmaceutical manufacturing and approaching wholesale consumer electronics. While environmental needs, such as climate change, drive clean technologies, so do other factors impacting businesses, including digitization, automation, lack of a skilled workforce, and access to expanding global markets.

Framing the Issues

As California continues to reduce emissions to reach the necessary climate goals in SB 32, the state must adopt integrated policies that support both economic growth and GHG reduction. By offering businesses and workers a rational pathway toward a vibrant, creative and successful economy, we can mitigate the impacts of such an unprecedented economic transition. Historically it was believed that greater economic growth was directly correlated to higher emission and pollution levels. Success will be dependent upon challenging that conception.

As California invests in a less carbon-intensive economy, the state is proving that both are possible.

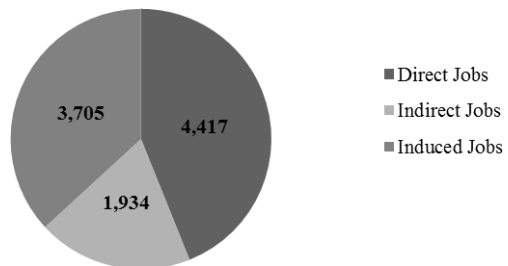
According to data from the California Greenhouse Gas Emissions Inventory and the California Department of Finance, tons of carbon dioxide equivalent per million dollars in gross state product have been reduced significantly, and are projected to continue to decline as the state and private companies



invest in the development of green collar businesses and jobs through the development and integration of cleaner technologies.

Proposition 39 Employment Impact, February 2014-June 2016

(Source: California Workforce Development Board)



Perhaps a more significant economic driver, however, has been the simultaneous transition to automation and digitalization, resulting in an increase in overall productivity. Higher productivity and an expanding global market place have supported significant increases in California GDP. The productivity dividend has not, however, yielded an equitable increase in wealth for most Californians. In fact, over the past decade, income has become more concentrated among the state's most wealthy,

while wages and incomes for the working class have stagnated. As noted earlier, income inequality has a measurable drag on the length and breadth of economic growth. Given the tangible impacts of any significant economic transition, the state must treat this issue holistically.

Calling for an integrated approach is not necessarily a new idea. As an example, in the 1990s, Tony Mazzocchi of the Oil, Chemical & Atomic Workers (now affiliated with the Steelworkers) proposed a "Superfund for workers."¹ His idea was that workers who lost their jobs due to otherwise beneficial changes, like environmental protection, should receive financial support and educational opportunities to find new jobs. This idea built momentum with labor and environmental organizing groups, who later titled this concept "Just Transition."

Today, just transition most commonly refers to the rights of displaced workers, as well as the ability of communities impacted by climate change and pollution reduction policies to access green and other collar job and business opportunities. This hearing looks at the practical realities of operationalizing the state's climate change goals, including their impact on businesses and entrepreneurs on whom the state also relies on to provide jobs for displaced workers and drive future economic growth.

Implementation of a just transition will require significant public investment in business transition, new business development, and workforce training.

California has taken several steps toward a just transition, first with the creation of the Green Collar Jobs Council and later with the passage of the California Clean Energy Jobs Act (Proposition 39). The Green Collar Jobs Council released "California Climate Investments and Jobs: Proposed Jobs and Workforce Development Program Elements for Carbon Reduction Investments in California" in January 2014. The Workforce Development Board estimates that the Clean Energy Job Creation Fund has created 10,056 additional jobs in California from February 2014 until June 2016.²

Advancing Equity in California Climate Policy

A 2016 report by the Center for Labor Research and Education at UC Berkeley proposes a new social contract for the state's transition to a lower carbon economy, including 3 criteria:

- Does the policy promote Environmental Justice?
- Does the policy promote Economic Equity?
- Does the policy promote public accountability?

<http://laborcenter.berkeley.edu/advancing-equity/>

¹ Tony Mazzocchi, "A Superfund for Workers," Earth Island Journal, 9(1).

² California's Citizen Oversight Board. "2nd Annual Report: Proposition 39 Clean Energy Jobs Act Report to the Legislature." March 2017.

Elsewhere, California has missed key opportunities to create a more inclusive process by, among other things, failing to fully utilize the expert advice provided through the work of the Environmental Justice Advisory Committee and the Economic and Technology Advancement Advisory Committee. Tracking and reporting outcomes have also been challenging and has limited the ability of the Legislature and the public to engage in oversight and prioritization of activities.

Up until now the narrow focus on environmental impacts is actually inhibiting the states overarching goal of a full transition to a lower carbon economy. Further, this focus on “low hanging fruit” rewards individuals who already have the economic and social capital to be early movers. This puts underserved communities, small businesses, and the working class in the position of having to bear a disproportionate share of the economic impacts to address climate change.

During the course of the hearing, Members will hear from labor and trade association representatives and other economic and workforce development stakeholders. Witnesses have been asked to share their insights on the right mix of policies and programs to help California make a just transition to a lower carbon economy. *Appendix D* includes a list and summary of related reports.

Key Policy Questions

Transitioning to a lower carbon economy requires significant business and economic changes. Developing a comprehensive and set of actions will be challenging and require thoughtful and respectful engagement with stakeholders. By focusing on economic fundamentals and the practical impacts of this transition, California may be able to obtain the balance necessary to achieve a just transition. The following questions have been developed to assist Members in preparing for the August 30, 2017, hearing.

- What will the California economy look like in 2030, when the state meets its goal of a 40% reduction in GHG emissions from 1990? What will be the dominant and emerging industry sectors?
- Where are the opportunities for enhancing California business and worker competitiveness and support for their economic transition to a lower carbon economy?
- Will changes be necessary to the state's rule making processes in order to accommodate the installation and implementation of updated and new technologies?
- Can the state's education and workforce development systems meet the challenges of a lower carbon economy? How can the state help to transcend historic divisions between career tech, college degrees, and employer needs?
- How are businesses and industries adopting new technologies, increasing their energy efficiency and use of renewables?
- How can the state enhance the specific conditions necessary to support young entrepreneurs, microenterprises, and small businesses to make a successful transition to a lower carbon economy?
- What actions can the state take to remove de-facto barriers to businesses, workers, and consumers transitioning to a lower carbon economy?

- Does the state have a workable game plan that supports an inclusive economy, upward mobility, economic security, while achieving lower GHG emissions?

Materials in the Appendix

A fact-packed summary of the California economy and copies of other materials related to the presentations are provided in the *appendices*.

- Appendix A - *Agenda for the August 30, 2017 hearing*
- Appendix B - *Fast Facts on the California Economy*
- Appendix C - *Selection of Related-Legislation*
- Appendix D - *Selection of Related-Reports*
- Appendix E - *Biographies of the Speakers*

Committee Contact Information

The Joint Legislative Committee on Climate Change Policies was created in 2016 by AB 197 (E. Garcia). The Committee was established to provide ongoing and permanent oversight over the implementation of the state's climate policies. The Committee is located in the State Capitol in Room 4140. The phone number to the Committee is 916.319.2056.

The Assembly Committee on Jobs, Economic Development and the Economy is the committee of the California State Legislature responsible for overseeing issues related to business formation, foreign trade and investment, industrial innovation and research, and state and local economic development activities. The Committee Office is located in the Legislative Office Building (LOB) at 1020 N Street, Room 359. The phone number to the Committee is 916.319.2090.

Mail should be addressed to: Assembly Committee on Jobs, Economic Development and the Economy; State Capitol; Sacramento, CA, 95814. For security reasons, mail is not received or delivered to the LOB.

APPENDICES

Appendix A
Agenda for August 30, 2017 Hearing

SUPPORTING A JUST TRANSITION TO A LOWER CARBON ECONOMY

I. OPENING REMARKS

The Chairs and members of the Joint Legislative Committee on Climate Policies and the Assembly Committee on Jobs, Economic Development, and the Economy will give opening statements and frame the key issues to be examined during the hearing.

II. INDUSTRY SURVEY OF TECHNOLOGY INNOVATIONS AND EVOLVING WORKFORCE NEEDS

- Kristin Decas, Port Hueneme and California Association of Port Authorities
- Michael Shaw, California Manufacturing and Technology Association
- Rock Zierman, California Independent Petroleum Association
- Cesar Diaz, State Building & Construction Trades Council of California

III. MODELS FOR AN INCLUSIVE TRANSITION

- Bob Lanter, California Workforce Association
- Jim Caldwell, California Community Colleges Strong Workforce Program
- Malaki Seku-Amen, California Urban Partnership
- Simeon Gant, Green Technical Education and Employment

IV. PUBLIC COMMENT

Individuals who wish to speak during the public comment period need to add their name to the Public Comment Sign-In Sheet

V. CLOSING REMARKS AND ADJOURNMENT

The Chairs and members of the Joint Legislative Committee on Climate Policies and the Assembly Committee on Jobs, Economic Development, and the Economy will make closing remarks and offer recommendations for further actions.

Appendix B

Fast Facts on the California Economy

Compiled by: Assembly Committee on Jobs, Economic Development, and the Economy
Assembly Member Sharon Quirk-Silva, Chair

California Gross Domestic Product (GDP)

- California’s economy is the sixth largest in the world – larger than Russia, Italy, India, and Canada.ⁱ

- In 2016, California GDP grew from \$2.4 trillion to \$2.6 trillion.ⁱⁱⁱ California's largest private industry sectors were: Finance, insurance, real estate, rental, and leasing (21.7% of state GDP); trade, transportation, and utilities (14.4% of total GDP); professional and business services (12.94% of state GDP); manufacturing (11.1% of state GDP); information (8.3% of state GDP).^{iv}

Comparison of 2016 GDPs			
Country	GDP	Country	GDP
1 - United States	\$18.56 trillion	9 - Italy	\$1.85 trillion
2 - China	\$11.22 trillion	10 - Brazil	\$1.79 trillion
3 - Japan	\$4.94 trillion	11 - Canada	\$1.53 trillion
4 - Germany	\$3.47 trillion	12 - Korea	\$1.41 trillion
5 - United Kingdom	\$2.62 trillion	13 - Russia	\$1.28 trillion
6 - California*	\$2.60 trillion	14 - Australia	\$1.26 trillion
7 - France	\$2.46 trillion	15 - Spain	\$1.23 trillion
8 - India	\$2.26 trillion		

Source: Department of Financeⁱⁱ

Firms, Employment and Wages

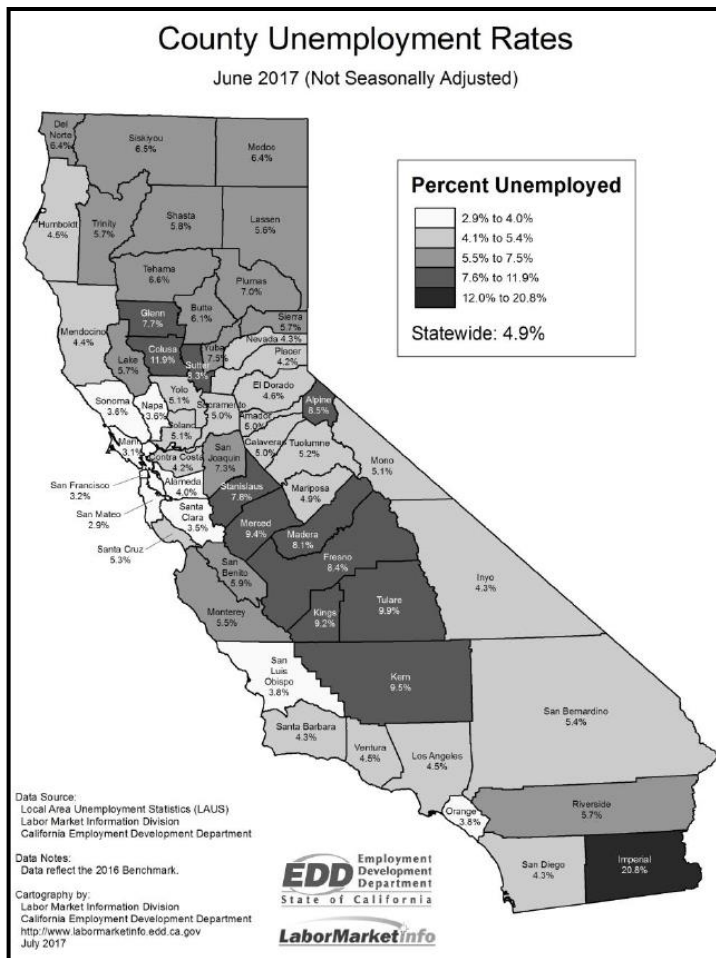
- There were 3,206,958 firms in California that had no employees in 2015, representing 82% of all firms in California (3,906,497 in total). Of firms which have employees (699,539 in total) 49.9% had 1 to 4 employees, 78.0% had less than 20 employees, 87.0% had less than 100 employees, and 89.0% had less than 500 employees (federal small business definition). Approximately 6,115 firms in California had 500 employees or more.^v
- There were 19.1 million workers in the California labor force in June 2017 with 18.2 million individuals employed, a month over decrease of 21,000 jobs. This represents a 198,000 (1.1%) increase in jobs over the prior year.^{vi}
- In June 2017, nonfarm employment rose in six sectors. The sectors with increased employment in June were: professional and business services (9,100); construction (8,100); financial activities (2,500); leisure and hospitality (1,200); educational and health services (300); and mining and logging (300).^{vii}
- California exported \$163.6 billion in products in 2016 to 227 foreign countries. Mexico (\$25.3 billion) and Canada (\$16.2 billion) are the state's largest export markets.^{viii} California imported \$410.3 billion in products from other countries, accounting for 18.7% of total U.S. imports in 2016. China (\$144.0 billion) and Mexico (\$46.4 billion) are the state's largest import markets.^{ix}
- California median household income was \$ 61,818 (\$53,889 for U.S.)^x with 15.3% of individuals in the state (14.7% for U.S.) living on incomes at or below the federal poverty designation.^{xi} Using the federal Supplemental Poverty Measure, which accounts for geographic differences, transfer payments, and out-of-pocket expenses, 20.6% of California residents live in poverty, as compared to 15.1% nationally.^{xii}

Future California Job Market

- The Employment Development Department is responsible for accessing future employment needs based on regional industry clusters. *The chart displays employment projections for 2012-2022, including new and replacement jobs.*

Projections for California Employment for 2012-2022					
	Industry Sector	Net Jobs		Industry Sector	Net Jobs
1	Hospitality and Tourism	823,883	6	Professional and Technical Services	350,483
2	Retail	647,468	7	Information and Communication Technologies	317,896
3	Health Care Services	602,228	8	Construction Materials and Services	304,961
4	Business Services	492,658	9	Social Services	271,977
5	Education and Training	467,713	10	Financial Services and Real Estate	246,710

Source: Employment Development Department^{xiii}



June Unemployment

In June 2017, the California seasonally adjusted unemployment rate was 4.7%, unchanged from the prior month and down 0.8% from the prior year. This figure represents approximately 900,000 unemployed workers reflecting a labor force participation rate of 62%.^{xiv} Over the same period, the national unemployment rate was 4.4%.^{xv} *The map displays unemployment rate by county.*

For June 2017, the counties with the highest unemployment were Imperial (20.6%) and Colusa (11.9%) and the county with the lowest unemployment was San Mateo (2.9%). The comparable non-seasonally adjusted state unemployment rate was 4.9%^{xvi}

The highest not seasonally adjusted unemployment rates by race and ethnicity were among blacks (7.7%), Hispanics (6.1%), and whites (5.1%).^{xvii}

Most Californians, 81.0% generally worked full time. There were 863,000 persons in California who worked part time involuntarily, comprising 4.7% of all employed workers during the survey week. Persons not in the labor force were approximately 11,700,000.^{xviii}

By age group, the highest unemployment group was among workers 16 to 19 (19.2%), down 0.4% from the prior month.^{xix} The largest group of unemployed persons, when sorted by duration, were those unemployed for less than 5 weeks, which represented 314,000 persons or 31.6 % of those unemployed. These are not seasonally adjusted rates.^{xx}

Appendix C

Selection of Related-Legislation

AB 32 (Pavley) California Global Warming Solutions Act of 2006: This bill requires the California Air Resources Board to adopt a statewide greenhouse gas emissions limit equivalent to the statewide greenhouse gas emissions levels in 1990, to be achieved by 2020. This bill also authorized the Board to adopt plans and regulations to achieve the 2020 target. This bill also directed the Board to maximize benefits to California's economy. Status: Signed by the Governor, Chapter 488, Statutes of 2006.

AB 3018 (Nunez) Green Collar Jobs Council: This bill requires the California Workforce Development Board to establish the Green Collar Jobs Council to develop programs, strategies, and resources to address the state's green economy workforce needs. Status: Signed by the Governor, Chapter 312, Statutes of 2008.

SB (Committee on the Budget) 73: This bill clarifies implementation for the California Clean Energy Jobs Act, also known as Proposition 39, that was approved by voters in November 2012. The California Clean Energy Jobs Act closed a corporate income tax loophole and directed the revenue to the General Fund and the Clean Energy Job Creation Fund for five fiscal years. This Fund is administered by the California Energy Commission to fund energy efficiency upgrades and clean energy generation at schools with the goals of creating clean energy jobs, reducing greenhouse gas emissions, and lowering the energy costs for schools. Status: Signed by the Governor, Chapter 29, Statutes of 2013.

SB 32 (Pavley) Update to the Climate Emission Limits: This bill requires the California Air Resources Board to adopt a statewide greenhouse gas emissions limit that is 40% below the statewide greenhouse gas emissions levels in 1990, to be achieved by 2030. Status: Signed by the Governor, Chapter 249, Statutes of 2016.

AB 197 (E. Garcia) 2016 Climate Actions: This bill establishes the Joint Legislative Committee on Climate Change Policies to ascertain facts and make recommendations to the Legislature concerning the state's programs, policies, and investments related to climate change. The bill directs ARB to consider the social costs of the emissions of greenhouse gases when adopting rules and regulations. The bill also directs ARB to prioritize both direct emissions reductions at large stationary sources of greenhouse gas emissions sources and direct emission reductions from mobile sources, as well as direct emissions reductions from other sources. Status: Signed by the Governor, Chapter 250, Statutes of 2016.

AB 398 (E. Garcia, et al) 2017 Climate Actions: This bill authorizes the California Air Resources Board to adopt a market-based compliance mechanism until 2030. It also extends and expands the State Sales Tax Exemption on Equipment to assist businesses in upgrading equipment. This bill further requires several reports on the economic and environmental impacts of the greenhouse gas emissions targets set by the Board. This bill also requires the California Workforce Development Board to submit a report to the Legislature no later than January 1, 2019 on the need for increased education, job training, and workforce development resources to help industry, workers, and communities' transition to a less carbon intensive economy. Status: Signed by the Governor, Chapter 135, Statutes of 2017.

Appendix D

Selection of Related-Reports

Advanced Energy Now - 2017 Market Report (2017): This report by the Advanced Energy Economy, a national business association, reports that advanced energy-related business now represent \$1.4 trillion in revenues globally, including \$200 billion within the US. Advanced energy activities represent a broad array of technologies, products, and services, including building efficiency, electricity delivery and management, advanced fuel production and delivery, and advanced electricity generation. Since 2011, these activities have grown 5% annually, which is three times faster than the US economy. Advanced energy-related jobs represent over 3.3 million people in the US. During 2017 these businesses experienced significant growth with a 48% increase in electronic cars, 54% increase in energy storage, and 30% increase in solar PV, and a 21% increase in fuel cell generators.
<http://info.aee.net/reports>

Advancing Equity in California Climate Policy: A New Social Contract for Low-Carbon Transition (2016): This report by the UC Berkeley Center for Labor Research and Education, examines the relationship between climate change policies and equity. As California makes the hard choices in meeting its greenhouse gas reduction goals, the costs of these actions should not disproportionately be bore by the low-income and working class. To address these concerns, the report proposes a Climate Equity Framework, comprised of three equity criteria:

1. Equity principles and goals are articulated as a means to guide design;
2. Key criteria is presented to analyze how close a particular climate policy or program comes to meeting these equity goals; and
3. Indicators are proposed that point the way to mechanisms and strategies to advance climate equity.

<http://laborcenter.berkeley.edu/advancing-equity/>

California Climate Investments and Jobs: Proposed Jobs and Workforce Development Program Elements for Carbon Reduction Investments in California (2014): Existing law established the Green Collar Jobs Council within the California Workforce Development Board for the purpose of consulting with other state agencies, among others, on developing the funding, strategies, programs, policies, partnerships, and opportunities necessary to address the growing need for a highly skilled and well-trained workforce to meet the needs of California's emerging green economy. The Green Collar Jobs Council made the following recommendations:

- a) Performance Goals and Data Tracking for Jobs: set goals for the quantity and quality of jobs created and the demographic and geographic distribution of workers, particularly those in entry-level jobs, based on realistic investment and job projections.
- b) Contractor Standards and Worker Skill Certifications: set explicit standards for participating contractors and minimum training and skill standards for workers.
- c) Providing Employment for Californians from Disadvantaged Communities: adopt agreements that establish wage floors, local/targeted hire and career pathways goals for programs and projects.
- d) Training Investments, Performance Goals, and Data Tracking for Training: align job training with other state workforce development investments including the state-certified apprenticeship system and employer-driven community college programs.

- e) Compliance: adequately fund the Department of Industrial Relations to ensure compliance with the public works section of the California Labor Code and related energy programs; update the recruitment, training, and certification of building system inspectors.
- f) Program Evaluation: review and assess whether programs that receive public investments are working, identify problems and barriers, and develop solutions to improve program performance.
- g) Transition Assistance for Adversely-Impacted Incumbent Workers: help workers transition to new, equivalent work and provide a bridge to retirement for a limited number of older workers.

California Citizen Oversight Board: The California Clean Energy Jobs Act, or Proposition 39, was approved by voters in November 2012.³ This initiative closed a corporate income tax loophole and directed the revenue to the General Fund and the Clean Energy Job Creation Fund for five fiscal years. The Clean Energy Job Creation Fund is administered by the California Energy Commission to fund energy efficiency upgrades and clean energy generation at schools with the goals of creating clean energy jobs, reducing greenhouse gas emissions, and lowering the energy costs for schools.

The Clean Energy Job Creation Fund also provides job training funds to several agencies and directs the California Workforce Development Board to quantify jobs created from the program. The Workforce Development Board's analysis currently only covers the Energy Commission's K-12 Energy Program, which represents about 80% of total program spending. The analysis relies on a model of future economic impact that quantifies direct jobs funded by the program, indirect jobs related to the jobs created by the program, and induced jobs created by the presence of additional workforce in a community. The Workforce Development Board estimates that the Clean Energy Job Creation Fund has created 10,056 additional jobs in California from February 2014 until June 2016.

<http://www.energy.ca.gov/efficiency/proposition39/>

Appendix E

Materials Submitted by the California Independent Petroleum Association

BRIEFING FOR AUGUST 30, 2017, JOINT HEARING OF THE LEGISLATIVE COMMITTEE ON CLIMATE CHANGE POLICIES AND THE ASSEMBLY COMMITTEE ON JOBS, ECONOMIC DEVELOPMENT, AND THE ECONOMY

OVERVIEW: California is tied as the nation's third largest oil producer, producing more than a half million barrels of oil per day. This is down from 1 million barrels per day three decades ago. All of the oil produced in the Golden State is consumed here, but this is only enough to meet 38% of the state's total demand. The remaining 62% is imported from other states or nations that do not follow California's strict environmental protection laws.

Recognizing the need to meet our nation's energy demands while protecting our energy security, Gov. Jerry Brown, who is globally recognized for his environmental leadership, has taken a pragmatic approach to California's energy policy. In 2015 Gov. Brown told *Politico*, "I don't think it's responsible to let third-world countries do the oil production so that Californians can drive around, even in their hybrids. We have to shoulder our part of the responsibility. And reducing our climate footprint is not 'snap your fingers, take one issue.' To just instantly kill an industry, with all the backlash that entails, with the trivial impact on climate change, does not seem to me the wise way to go."

In 2016, President Barack Obama acknowledged how fossil fuels have helped the U.S. become the global leader in greenhouse gas emission reductions when he said, "Interestingly enough, one of the reasons why we've seen a significant reduction of coal usage in the United States is not because of our regulations. It's been because natural gas got really cheap as a consequence of fracking. [Some environmentalists'] attitude is we got to leave that stuff in the ground if we're going to solve climate change. And I get all that. On the other hand, the fact that we're transitioning from coal to natural gas means less greenhouse gases."

Due to the size of our nation-state, demand for oil has increased. At the same time, technology has paved the way for oil and gas companies to recover resources while leaving a smaller footprint. In fact, according to the California Air Resources Board, in 2013, oil and gas extraction accounted for 4% of the state's total methane emissions.

Even though oil and gas is not the largest contributor to greenhouse gas emissions, producers have complied with an ever-changing landscape of regulatory and legislative mandates while continuing to provide quality careers to a diverse workforce.

Ending oil production in California does not weaken the demand for oil. Instead, it will increase our energy dependence on imports from foreign interests, like the Middle East and Russia, who do not adhere to strict environmental regulations or respect human rights. Replacing 200 million barrels of California oil would equate to 588 more tanker ships per year, 284,994 oil rail cars, or gas rationing. These alternatives present a variety of environmental and economic concerns. Therefore, producing

oil in California under the strictest standards on the planet is the most environmentally-friendly and economically beneficial way of meeting our state's vast energy needs.

This paper will explain how California producers continue to protect the sustainability of their companies by embracing clean technologies, the economic benefits of production and a brief overview of the federal, state, regional and local regulations operators must follow.

INNOVATIVE CRUDE METHODS: By Executive Order, Governor Arnold Schwarzenegger enacted the Low Carbon Fuel Standard (LCFS), a program designed to reduce the carbon intensity of California fuels by 10% by 2020.

Refiners in California either have to reduce the carbon intensity of their refining processes, blend with other fuels like ethanol, or buy credits to reach the 10% reduction goal. Credits, however, are difficult and potentially expensive to come by since only utilities and refiners can create them. The California Air Resources Board (CARB), who is responsible for developing and administering the program, created the Innovative Crude Methods program to allow in-state producers of crude to create credits by demonstrating they have lowered the carbon intensity of their production methods.

Originally limited to solar thermal steam and carbon capture and sequestration, CIPA worked with CARB to expand the program to include all solar installations in the oil patch eligible to generate credits. CIPA also worked to ensure the program allowed solar co-ops amongst numerous producers utilizing the same solar facility.

CIPA is assisting members to identify funding sources of new solar installation, get those projects certified by CARB, and generate, bank, and sell those credits to program participants.

NET WATER PRODUCER: Water is a by-product of oil production. For every barrel of oil produced in California, there are about 15 barrels of water produced as well, which amounts to 130 billion gallons of water every year. The vast majority of this water is recycled directly by oil and gas companies for further production. About 8 percent of the produced water is treated and blended with other sources for agricultural use in irrigation under state-approved permits. This water undergoes strict testing by independent certified laboratories and must meet specific quality standards set by the Regional Water Quality Control Board. This recycling has taken place for more than 30 years without incident and with no evidence of contamination from reclaimed irrigation water. Farmers have described this produced water recycling program as a lifeline to keep their crops alive during this historic drought, especially as their other irrigation water sources have been curtailed.

The U.S. Environmental Protection Agency, State Water Resources Control Board and Department of Conservation's Division of Oil, Gas & Geothermal Resources (DOGGR) have all found no evidence of contamination of public water supplies as a result of produced water from oil and gas production in California in their review of underground injection. Additionally, state law (SB 1281 signed by Governor Brown in 2014) requires producers to report on a quarterly basis to DOGGR the source and volume of any water used or injected in oil field operations.

The State's official drought policy is to encourage sustainable new water sources, such as oil production water use to irrigate agricultural fields. As with all water supplies, the new water will have

to be certified safe for irrigation and continuously meet stringent testing criteria. Despite erroneous claims by anti-oil activists, state officials have verified that water from hydraulically fractured wells have not been used for irrigation. Only about 25% percent of wells in California use hydraulic fracturing. Clay Rodgers, Assistant Executive Officer of the Central Valley Regional Water Quality Control Board said, "I should point out from our knowledge, water from oil wells that have been hydraulically fractured have not and are not being used for irrigation."

Oil and gas producers provide about 50,000 acre feet of water for beneficial use for agriculture each year. This safe, new permanent water source will help hundreds of South San Joaquin family growers stay in business, keeping thousands of rural residents employed in farming, food processing, transportation, equipment and many other allied industries. The California Department of Food and Agriculture found that the drought cost California agriculture \$1.84 billion and 10,100 jobs in 2015.

ECONOMIC BENEFITS OF DOMESTIC PRODUCTION: The industry is an economic engine for the state creating 368,000 quality jobs with an average salary of nearly \$75 thousand annually. California oil and gas companies also paid more than \$42 billion in federal, state and local taxes in 2015.

The Los Angeles Economic Development Corporation in June 2017 released new data on the economic benefits of the oil and gas industry. According to the study, the industry generates more than \$148 billion in direct economic activity, contributing to 2.7 percent of the state's GDP in 2015.

This analysis also shows that California's energy industry employs a workforce that is diverse both in terms of ethnicity and level of education. The workforce is 29.1 percent Hispanic, 13 percent Asian and 5.3 percent African-American. This is four times more diverse than other STEM-focused industries.

While 23.3 percent of workers have a college degree and 28 percent have attended some college, 39.2 percent of workers have a high school education or less. Regardless of an oil and gas worker's level of education, he or she earns more on average than the average worker with the same level of education.

New data also illustrates how quality careers in oil and gas help support the American Dream. Petroleum engineering topped a list compiled by Realtor.com analyzing 336 college degrees to see which would result in the quickest path to homeownership. The *New York Times* recently published a story about the analysis, which stated, "Engineering degrees dominated the list, occupying 33 of the highest 50 rankings, with petroleum engineering at the top: Those with this particular degree, the site predicted, would have enough earning power to buy a home in just 2.6 years."

REGULATION AND LEGISLATION IMPACTING INDUSTRY: California oil and gas producers must follow an ever-changing landscape of regulations at the state, federal, local and regional levels. In fact, in some jurisdictions operators must follow rules from 20 different government entities. The state requires operators to be bonded and state regulators from several agencies perform unannounced inspections of operations.

The state's Division of Oil, Gas, and Geothermal Resources (DOGGR) oversees drilling permits, surface equipment permits, well stimulation permits and implements the idle well program. The State Water Quality Control Board and Regional Water Quality Control Boards review injection well applications, manage well stimulation ground water monitoring plans and issue permits for stormwater runoff for

construction of pads. Other agencies with state oversight include CalOSHA, CalEPA, CHP, CalOES, CalTrans, DMV and the Department of Fish & Wildlife. The California Air Resources Board enforces industry's compliance with state laws governing greenhouse gas emission reductions. Additionally, regional air districts require producers to follow more than 25 rules governing issues such as air quality, odors, noise and chemical usage. Federal regulators include the U.S. EPA, Bureau of Land Management, Department of Homeland Security, U.S. Coast Guard and U.S. Department of Transportation.

Local governments also have their own set of local land use rules that operators must follow which include a separate permitting process. In Kern County, where the vast majority of production occurs, there is a local ordinance that includes more than 88 mitigation measures.

Additionally, the state legislature has passed a number of bills since 2009 impacting production including:

- **AB 1960:** Facilities permitting & inspection
- **SB 4:** Well Stimulation
- **AB 861:** Spill Prevention
- **AB 1966:** Mineral/ Surface Estates
- **SB 665:** Increased Bond Amounts
- **SB 1281:** Water Reporting
- **AB 1420:** Pipelines in Sensitive Areas
- **AB 864:** State Fire Marshal
- **SB 612:** DTSC Reporting
- **AB 1937:** Pipeline Repairs Near Sensitive Receptors
- **SB 1168:** Ground Water Analysis/Prioritization
- **State Budgets:** DOGGR & Water Board Assessments
- **SB 32/AB 197:** Gives CARB authority to reduce GHG emissions to 40% of 1990 levels by 2030
- **AB 2729:** Increases fees and indemnity bond amounts for idle wells
- **AB 2756:** Increases penalties and fee structure for state oil regulators
- **AB 2912:** Makes additional revisions to recent expansions to the state's oil spill preparedness and response program
- **SB 1383:** Requires a 40% reduction in methane, a 40% reduction in hydrofluorocarbon gases, and a 50% reduction in anthropogenic black carbon, from 2013 levels by 2030
- **AB 398:** Extends the cap and trade program



CALIFORNIA OIL & GAS BY THE NUMBERS

QUALITY CAREERS



- 368,00 total jobs
- \$33 billion in labor income
- 2.7% of the state's domestic product

TAX GENERATOR

California oil and gas companies in 2015 paid

\$42 BILLION IN FEDERAL, STATE AND LOCAL TAXES


which fund vital public services, including:

- \$26.4 billion in state and local taxes
- \$15.6 billion in federal taxes
- \$28.5 billion in sales and excise taxes
- \$2.3 billion in corporate profits taxes


WORKFORCE DIVERSITY AND OPPORTUNITY

The oil and gas industry provides quality jobs, regardless of ethnicity or educational attainment, that pay on average more than jobs in other industries.

\$
\$74,690
average salary

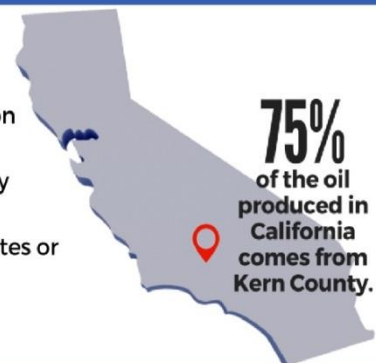

The industry provides opportunity across the educational spectrum: 23.3% of workers have a college degree, 28% have attended some college, 39.2% have a high school education or less.


Petroleum engineering is the best degree for homeownership, with 2.6 years to a home purchase and a \$96,700 salary.


The workforce is 29.1% Hispanic, 13% Asian and 5.3% African-American.
This is four times more diverse than other STEM-focused industries.

THIRD HIGHEST PRODUCTION IN THE NATION

- 539,000 barrels of oil produced per day, down from 1 million barrels per day 30 years ago.
- All oil produced in California is used in California, but it only accounts for 38% of the state's demand for oil.
- 62% of the state's total demand is imported from other states or nations that do not follow California's strict environmental protection laws.



Produced by the California Independent Petroleum Association
1001 K Street, 6th floor | Sacramento, CA | 916.447.1177 | www.cipa.org

Appendix F

Biographies of Witnesses

Jim Caldwell, Statewide Sector Navigator; California Community Colleges Strong Workforce Program

Jim Caldwell is a member of the leadership team of the California Community Colleges' Doing What MATTERS for Jobs and the Economy initiative, managing the Energy Construction & Utility Sector.

He leads a team as a business development resource for the colleges with programs in the Energy, Construction, and Utilities Sector. His team adds value for community college faculty through strategic partnerships with the state's utilities and energy efficiency stakeholders. A primary goal is to enhance student success and develop an increasingly sophisticated workforce to meet the sector's evolving needs.

With more than 30 years in high technology fields, Mr. Caldwell has held executive positions at AT&T, Lucent/Avaya, Alcatel DSC, and multiple Silicon Valley firms. His experience with workforce development began in 2006 when he founded Workforce Incubator, a 501(c)3 nonprofit committed to cultivating world-class talent for 21st century careers.

Kristin Decas, President; California Association of Port Authorities

Kristin Decas is the President of the California Association of Port Authorities (CAPA) and the CEO & Port Director for the Port of Hueneme. A proven leader, Kristin repeatedly demonstrates her ability to build vision and implement strategy through open, collaborative processes that foster results.

Since beginning her tenure with the Port of Hueneme in February 2012, the Port has realized several successes. Tonnage totals have grown every year since her arrival from 1.3 million tons for FY 2012 to over 1.575 million metric tons in 2015 marking the Port's strongest sustained trade years since its inception in 1937. Kristin championed the first annual Port Banana Festival, drawing over 10,000 visitors to the Port. Port of Hueneme related activities generate \$1.1 billion in annual economic impact and create more than 10,200 direct, indirect, induced and influenced jobs.

Prior to serving for the Port of Hueneme, Kristin served as CEO and Port Director for the Port of New Bedford, MA, the nation's number one value fishing port. In 2007, when Kristin took the helm as the director for the Port, she inherited a \$200,000 deficit. Kristin literally 'cleaned up' the financial and physical landscape. During her five years at this post, she orchestrated a complete fiscal turnaround; from 2008, and every year thereafter, her prudent fiscal management generated a healthy profit for the Port. Kristin played a vital role in the development of a new terminal to support commerce and offshore wind energy projects. Under her leadership the Port also realized significant growth in cruise and recreational boating activity.

Kristin is recognized by Trade Administration officials for her impressive work in promoting economic development through international trade promotion, and for her service on scores of federal level shipping and port committees. Most recently Kristin was awarded a high-profile appointment by the U.S. Department of Transportation to both the National Freight Advisory Committee (NFAC) and the U.S. Marine Transportation System National Advisory Council.

The board of directors of the American Association of Port Authorities (AAPA), a trade association representing more than 130 public port authorities in the US, Canada, the Caribbean and Latin America, elected Kristin as the association's chair for the 2014-2015 activity year. Ms. Decas took office at the conclusion of the association's annual convention in Houston in November.

Kristin was the first woman to run both the Port of New Bedford in its 50 year history and the Port of Hueneme in its 75 year history. She is the 4th woman to chair the AAPA in its 103 years.

She lives in Oxnard, CA with her husband and is the proud mother of two daughters.

Cesar Diaz, Legislative and Political Director; State Building & Construction Trades Council of California

(Pending)

Simeon Gant, Executive Director; Green Technical Education and Employment

Simeon Gant is a government relations and public affairs consultant. He is founder and Executive Board Member of Green Technical Education and Employment (Green Tech), a community-based non-profit organization, teaching youth and young adults ages 12-21 about career opportunities in clean energy, energy efficiency and sustainable living strategies. Mr. Gant served as legislative consultant in the California State Senate and Assembly from 1994-2007. He has worked as a legislative advocate for the Drug Policy Alliance (DPA) reducing penalties for low-level drug offenders and advocating to increase drug and mental health rehabilitation. From 2007-2009 he served as government relations consultant for the California NAACP providing legislative consultation on modern civil rights policy and state budget consultation to the Service Employees International Union (SEIU) representing Nurses and employees working for people with developmental disabilities. Prior to his work in government, Mr. Gant was a broadcast news and print journalist for NBC affiliate, KRNV News Channel 4 in Reno, Nevada and the Sacramento Observer newspaper in Sacramento, California. He earned his Bachelor of Arts degree in Communications (Broadcast News) from California State University, Sacramento in 1992.

Bob Lanter, Executive Director; California Workforce Association

Bob Lanter is currently the Executive Director of the California Workforce Association leading the way in workforce strategy and the implementation of the Workforce Innovation and Opportunities Act for the state of California. Bob has worked almost two decades in the public sector and non-profit industry, with experience in the field of workforce development and job training. He has held various positions in local workforce investment systems from case manager to the Executive Director of the Contra Costa County Workforce Board.

He gained national/federal experience working for the U.S. Department of Labor's Employment and Training Administration as a Federal Project Officer. Before taking over as Executive Director at CWA, Bob owned and managed a national consulting practice where he and his team facilitated organizational retreats, team building meetings, strategic planning and assessment projects for local, state, and national workforce development, government and non-profit organizations. He also has developed and delivered training curriculum and keynote addresses in multiple topics of workforce

development that have helped inspire thousands of professionals in the industry. He graduated from California State University, East Bay with a Bachelors Degree in Personnel Administration and Industrial Relations; additionally he is a Certified Master Facilitator from the Institute of Cultural Affairs.

Malaki Seku-Amen, President & CEO; California Urban Partnership

Malaki Seku-Amen (pronounced “mal-luck-eye / say-coo awe-men”) has been in the vanguard of community economic development for 25 years. He has lived and told the stories of troubled neighborhoods as a journalist, pioneered innovative business support programs, steered policy in the executive and legislative branches of state government and advised Fortune 500 corporations in high stakes public affairs issues.

One of Malaki’s first career-defining success stories was coordinating a chamber of commerce’s congressional lobbying efforts in 1990, which aimed to promote regional business incubation as a response to local military base closures. After producing Sacramento’s first (and award-winning) directory of Black businesses, professionals and community resources, he then co-authored grant proposals securing over \$1.5 million in local and federal funding for the rehab of an abandoned 75,000 square foot commercial facility to house the Al Geiger Center for Business Incubation, and, a business development and technology skills training program with micro-loan fund serving low income residents in Sacramento. In 1993, Malaki joined the Center’s staff as the training program coordinator.

In roles as partner of a public affairs and visual media firm (intermittently since 1995), Governor’s appointee and staffer in California’s Legislature (2001 to 2007), and state lobbyist for the nation’s oldest and largest civil rights organization (2008 to 2011), Malaki wrote business plans, analyzed public policies, built coalitions, developed successful marketing, media and fundraising strategies, managed budgets and staff/volunteers, organized major conferences and events, chaired committees, reported to governing boards and much more. This includes having held management responsibilities in operating a California Technology, Trade and Commerce Agency division’s business and community support programs responsible for awarding \$72 million in grants, which created and retained over 18,000 jobs.

From 2005 to 2012, Malaki served as an appointed Member of the California Economic Strategy Panel, which advised the Governor and the Legislature on economic strategies to guide public policy. This afforded him an opportunity to research critical issues, engage stakeholders and develop policy recommendations in many areas of economic development; namely, technology commercialization, the state’s regional industry cluster eco-system, infrastructure, regulations, workforce development, capital formation, government program evaluation, supporting entrepreneurs and startups, and addressing income inequality.

From the practice of business development, to the field of public policy, Malaki’s work has been driven by an intimate understanding of how to successfully navigate California’s diverse communities, political environment and economic opportunities. In 2006 – with support from legislative, industry and community leaders - Malaki completed a fellowship at Harvard University’s Institute for Community Economic Development, resulting in his development of a community action plan for neighborhood revitalization in low-income urban areas in California (the Economic Opportunity Initiative – EOI). The California Legislative Black Caucus adopted the EOI as legislation and a major policy recommendation linked to its 2007 State of Black California report. Governor Arnold

Schwarzenegger also adopted the EOI, which became his basis for establishing through Executive Order, the California Partnership for Urban Communities (a community organization assistance pilot project), within the California Business, Transportation & Housing Agency.

Ultimately, a continued passion for community innovation, investment and equity led to Malaki's current role as president and chief executive officer of the California Urban Partnership – a 501 c 3 nonprofit organization he founded in 2010.

Michael Shaw, Vice President, Government Relations; California Manufacturing & Technology Association

As Vice President of Government Relations for the California Manufacturers & Technology Association, Mr. Shaw oversees the legislative and regulatory agenda for California manufacturers and manages the CMTA advocacy team. The California Manufacturers & Technology Association has advocated for pro-growth laws and regulations before the California legislature and administrative agencies since 1918.

Shaw was most recently Vice President of External Affairs for the California Trucking Association after serving as California Legislative Director for the National Federation of Independent Business, and as a lobbyist for the California Chamber of Commerce. Shaw has extensive experience in the areas of climate change, health care, tort reform, and workers' compensation, and he has worked on a number of statewide political races and initiative campaigns.

Shaw is a third-generation Californian and he graduated from California State University, Sacramento with a B.A. in Government

Rock Zierman, Chief Executive Officer; California Independent Petroleum Association

Rock Zierman, Chief Executive Officer, has worked with CIPA since October 2002. Prior to being appointed CEO, Rock served as both the Director of Public Affairs for CIPA, and the Executive Director of the California Natural Gas Producers Association (CNGPA), a wholly owned subsidiary organization of CIPA.

Rock recommends and implements policy for the Association's 50-member Board of Directors. He serves as chief spokesperson for the Association and coordinates all of its state and national legislative activities.

Prior to joining CIPA, Rock served as Chief of Staff to Assemblyman Mike Briggs (Fresno). Rock has also served in the offices of Assemblymembers Chuck Quackenbush (San Jose), Tom Bordonaro (Paso Robles), and Robert Prenter (Hanford).

Rock graduated from Santa Clara University with a business degree in economics.

End Notes

- ⁱ Department of Finance, Top Countries Ranked by Its GDP, California's World Ranking 2016, http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/ accessed 7/12/17
- ⁱⁱ Department of Finance, Top Countries Ranked by Its GDP, California's World Ranking 2016, http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/ accessed 7/12/17
- ⁱⁱⁱ Department of Finance, Top Countries Ranked by its GDP, California's World Ranking 2016, http://www.dof.ca.gov/Forecasting/Economics/Indicators/Gross_State_Product/ accessed 7/12/17
- ^{iv} Bureau of Economic Analysis, "Regional Data: GDP by State" <http://bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=2#reqid=70&step=10&isuri=1&7003=200&7035=-1&7004=naics&7005=-1&7006=06000&7036=-1&7001=1200&7002=1&7090=70&7007=2015&7093=levels> accessed 7/28/16
- ^v 2014 U.S. and State Industry Totals Data, Statistics of U.S. Businesses, U.S. Census <http://www.census.gov/econ/subs/> or http://www2.census.gov/econ/subs/data/2012/us_state_totals_2012.xls, accessed 3/14/17
- ^{vi} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{vii} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{viii} "Global Patterns of a State's Exports," TradeStats Express, International Trade Administration <http://tse.export.gov/TSE/MapDisplay.aspx> accessed 7/12/17
- ^{ix} U.S. Census, "State Imports California 2015", <http://www.census.gov/foreign-trade/statistics/state/data/imports/ca.html>, accessed 3/14/17
- ^x U.S. Census, "Household Income: 2015, American Fact Finder https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_15_5YR_DP03&src=pt accessed 7/12/2017.
- ^{xi} U.S. Census, "Poverty: 2014 and 2015, ACS Briefing issued September 2016 <http://www.census.gov/content/dam/Census/library/publications/2016/demo/acsbr15-01.pdf> accessed 1/3/2017
- ^{xii} U.S. Census, "Supplemental Poverty Measure: 2015, ACS Briefing issued September 2016, <https://www.census.gov/content/dam/Census/library/publications/2016/demo/p60-258.pdf> 1/3/2017
- ^{xiii} EDD, Quarterly Market Review, July 2015, <http://www.labormarketinfo.edd.ca.gov/Publications/REA-Reports/California-REAP2015.pdf> accessed 7/28/16
- ^{xiv} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xv} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xvi} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xvii} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xviii} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xix} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16
- ^{xx} EDD, Labor Market Review, March 2017, <http://www.labormarketinfo.edd.ca.gov/Publications/Labor-Market-Analysis/calmr.pdf>, accessed 7/28/16