

Date of Hearing: April 19, 2016

ASSEMBLY COMMITTEE ON JOBS, ECONOMIC DEVELOPMENT, AND THE ECONOMY

Eduardo Garcia, Chair

AB 1697 (Bonilla) – As Amended March 16, 2016

SUBJECT: Alternative and Renewable Fuel and Vehicle Technology Program

SUMMARY: Expands the criteria for selecting programs funded through the Alternative and Renewable Fuel and Vehicle Technology Program (Program) to include the ability of the project to provide career pathways to clean technology and renewable fuels industry sectors. Specifically, **this bill:**

- 1) Expresses the following legislative intent:
 - a) The California Global Warming Solutions Act of 2006 requires California to reduce its greenhouse gas emissions to 1990 levels by 2020;
 - b) In January 2015, Governor Brown issued a statewide goal of reducing petroleum use 50% by 2030 in order to reduce greenhouse gas emissions;
 - c) To address the long-term goals of reducing greenhouse gas emissions in California, the legislature established the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). The ARFVTP Program provides up to \$100 million in grants each year to help California establish and expand alternative and renewable fuel production and infrastructure;
 - d) As policies that reduce greenhouse gas emissions and petroleum use go into effect, the job market landscape will inevitably change, resulting in a greater emphasis on green jobs; and
 - e) To ensure that the skills and technical training in existing industries are integrated into the new green economy, it is incumbent on the state of California to foster earn and learn pathways and additional training opportunities to transition workers from the carbon-based economy to jobs focused on alternative and renewable fuels to match growing demand.
- 2) Expands the criteria used to set Program preferences to include the project's ability to:
 - a) Provide a path for trained workers to transition to jobs in the clean technology and renewable fuels sectors; and
 - b) Promote employment of trained workers in the clean technology and renewable fuels sectors.

EXISTING LAW:

- 1) Enacts the California Global Warming Solutions Act, which requires the California Air Resources Board to determine the 1990 statewide green house gas (GHG) emissions level and approve a statewide GHG emissions limit that is equivalent to that level, to be achieved by 2020, and to adopt GHG emission reduction measures by regulation, and sets certain requirements in adopting the regulations.
- 2) Establishes the Green Collar Jobs Council (GCJC) within the California Workforce Development Board (CWD), 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. To the extent private funds are available, it is the intent of the Legislature

that the GCJC develop an annual award for outstanding achievement for workforce training programs. The GCJC is comprised of the appropriate representatives from the CWIB existing membership.

- 3) Establishes the Program, administered through the State Energy Resources Conservation and Development Commission (Commission), for the purpose of providing a variety of financial products that assist in the development and deployment of technology and alternative and renewable fuels in the marketplace.
- 4) Specifies eligible Program applicants to include, but not be limited to, public agencies, vehicle and technology entities, businesses and projects, public private partnerships, workforce training partnerships, fleet owners, consumers, recreational boaters, and academic institutions.
- 5) Authorizes the Commission to provide preferences to those projects that maximize the Program's goals, based on the following selection criteria:
 - a) The project's ability to provide a measurable transition from the nearly exclusive use of petroleum fuels to a diverse portfolio of viable alternative fuels that meet petroleum reduction and alternative fuel use goals;
 - b) The project's consistency with existing and future state climate change policy and low-carbon fuel standards;
 - c) The project's ability to reduce criteria air pollutants and air toxics and reduce or avoid multiple environmental impacts;
 - d) The project's ability to decrease, on a life-cycle basis, the discharge of water pollutants or any other substances known to damage human health or the environment, in comparison to the production and use of California Phase 2 Reformulated Gasoline or diesel fuel produced and sold pursuant to California diesel fuel regulations, as specified;
 - e) The project does not adversely impact the sustainability of the state's natural resources, especially state and federal lands;
 - f) The project provides nonstate matching funds. Costs incurred from the date a proposed award is noticed may be counted as nonstate matching funds. The commission may adopt further requirements for the purposes of this paragraph. The commission is not liable for costs incurred pursuant to this paragraph if the commission does not give final approval for the project or the proposed recipient does not meet requirements adopted by the commission pursuant to this paragraph;
 - g) The project provides economic benefits for California by promoting California-based technology firms, jobs, and businesses;
 - h) The project uses existing or proposed fueling infrastructure to maximize the outcome of the project;
 - i) The project's ability to reduce on a life-cycle assessment greenhouse gas emissions by at least 10%, and higher percentages in the future, from current reformulated gasoline and diesel fuel standards established by the state board;
 - j) The project's use of alternative fuel blends of at least 20%, and higher blend ratios in the future, with a preference for projects with higher blends; and

- k) The project drives new technology advancement for vehicles, vessels, engines, and other equipment, and promotes the deployment of that technology in the marketplace.
- 6) Requires the Commission to rank projects for funding based on the criteria described in number 5 above. An additional preference is required to be given to projects with higher cost-benefit scores, as specified.
- 7) Limits project funding to the following:
- a) Alternative and renewable fuel projects that develop and improve alternative and renewable low-carbon fuels, including electricity, ethanol, dimethyl ether, renewable diesel, natural gas, hydrogen, and biomethane, among others, and their feedstocks that have high potential for long-term or short-term commercialization, including projects that lead to sustainable feedstocks;
 - b) Demonstration and deployment projects that optimize alternative and renewable fuels for existing and developing engine technologies;
 - c) Projects to produce alternative and renewable low-carbon fuels in California;
 - d) Projects to decrease the overall impact of an alternative and renewable fuel's life cycle carbon footprint and increase sustainability;
 - e) Alternative and renewable fuel infrastructure, fueling stations, and equipment;
 - f) Projects to develop and improve light-, medium-, and heavy-duty vehicle technologies that provide for better fuel efficiency and lower greenhouse gas emissions, alternative fuel usage and storage, or emissions reductions;
 - g) Programs and projects that accelerate the commercialization of vehicles and alternative and renewable fuels, as specified;
 - h) Programs and projects to retrofit medium- and heavy-duty onroad and nonroad vehicle fleets with technologies that create higher fuel efficiencies, as specified;
 - i) Infrastructure projects that promote alternative and renewable fuel infrastructure development connected with existing fleets, public transit, and existing transportation corridors, as specified;
 - j) Workforce training programs related to alternative and renewable fuel feedstock production and extraction; renewable fuel production, distribution, transport, and storage; high-performance and low-emission vehicle technology and high tower electronics; automotive computer systems; mass transit fleet conversion, servicing, and maintenance; and other sectors or occupations related to the purposes of this chapter;
 - k) Block grants or incentive programs administered by public entities or not-for-profit technology entities for multiple projects, education and program promotion within California, and the development of alternative and renewable fuel and vehicle technology centers;
 - l) Life cycle and multimedia analyses, sustainability and environmental impact evaluations, and market, financial, and technology assessments performed by a state agency to determine the impacts of increasing the use of low-carbon transportation fuels and technologies, and to assist in the preparation of the investment plan and program implementation; and
 - m) A program to provide funding for homeowners who purchase a plug-in electric vehicle to offset costs associated with modifying electrical sources to include a residential plug-in electric vehicle charging station.

FISCAL EFFECT: Unknown

POLICY ISSUE FRAME

To address the long-term goals of reducing the emissions of greenhouse gases in California, the Legislature approved and the Governor signed the California Alternative and Renewable Fuel, Vehicle Technology, Clean Air and Carbon Reduction Act of 2007 that established the Alternative and Renewable Fuel and Vehicle Technology Program. The Program is administered through the Commission, which each year awards up to \$100 million in grants to support the development and deployment of innovative technologies related to alternative fuel and vehicle types. Although workforce development is among the list of eligible activities, funding for training has been limited. Of the \$100 million available each year, the Commission planned to set aside \$2.5 million in 2014-15 and \$3 million in 2015-16 for workforce related investments.

This bill modifies the selection criteria to make workforce-related activities more competitive. The analysis includes background on California's high-carbon economy, economic opportunity in the clean tech industry sectors, and the lack of a plan to assist workers to access those opportunities. Amendments are discussed in Comment #9, which enhance the scope of workforce eligible activities under the Program.

COMMENTS:

- 1) **Author's Statement:** According to the author's statement, "On January 5th, 2015, Governor Brown issued a statewide goal of reducing petroleum use 50% by 2030 in order to reduce greenhouse gas (GHG) emissions. This goal will be achieved by reducing petroleum consumption while simultaneously increasing production and use of renewable and alternative fuels. This means California will require a trained and knowledgeable workforce in the emerging clean energy sector.

To address the long-term goals of reducing GHG emissions in California, the legislature established the Alternative and Renewable Fuel and Vehicle Technology Program (ARFVTP). In total, the program provides up to \$100 million in grants each year to help California establish and expand alternative and renewable fuel production and infrastructure.

As policies that reduce GHG emissions and petroleum use go into effect, the job market landscape will inevitably change, resulting in a greater emphasis on green jobs. In order to remain competitive, California will have to transition its workforce to match the growing demand.

AB 1697 incentivizes applicants for ARFVTP funding to include a workforce development element in order to be more competitive in the grant process. This bill will ensure that the California workforce transitions smoothly to implement future policy priorities aimed at reducing GHG emissions."

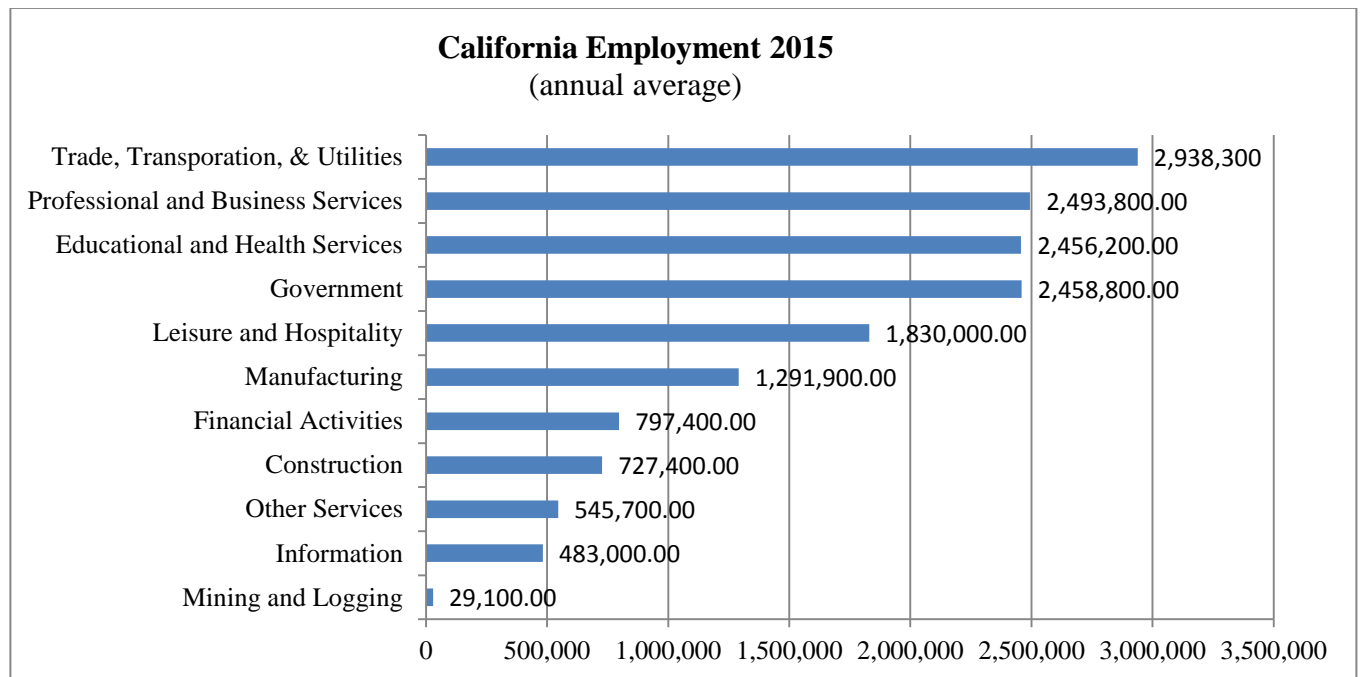
- 2) **California's High-Carbon Economy:** California is home to over 38 million people, providing the state with one of the most diverse populations in the world, often comprising the single largest concentration of nationals outside their native country. In 2014, this diverse group of business owners and workers produced \$2.3 trillion in goods and services; \$174.1 billion of which were exported to over 220 countries around the world. California's 2014 GDP ranks the state economy as the eighth 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.

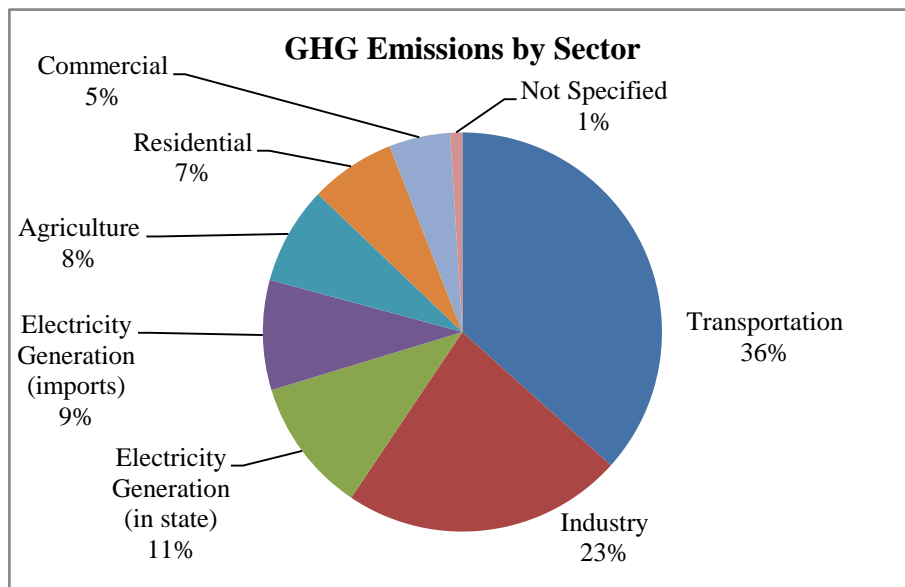
There are approximately 19 million people within the California workforce, generally contributing to 11 industry sectors, including government. The chart below displays California employment by industry sector, based on the 2015 annual average.

The Trade, Transportation, and Utility sector is the largest employment sector and the second largest contributor to GDP. In 2014 (most recent data available), this sector contributed \$351 billion to the California economy and supported jobs in other industry sectors including Manufacturing, Professional Services, and Financial Activities. While providing significant economic advantages, these same industry sectors are primary contributors to the state's greenhouse gas emissions.



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 (5.5%) 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 (10.8%), Hispanics (7.4%), young workers (20.5%), and inland California (Colusa at 21.1% and Imperial County at 18.9%).

Transitioning to a lower carbon economy has economic costs, which the state has been slow to acknowledge and address. The state clearly has tools to help make this transition less of a hardship for impacted workers, businesses, and communities. AB 1697 proposes the expanded use of an existing funding source to help retrain workers who face potential unemployment when their middle-wage jobs are eliminated.

- 3) **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 in the cleantech industry largely comes from the convergence of two disparate factors. One, recent advances in new 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, increased the use of renewable energy, and lowered air pollution and GHG emissions.

The chart below, developed by Cleantech San Diego, illustrates the wide range of industries engaged in the cleantech industry cluster.

Chart 4: Examples of Cleantech Industries	
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	

A December 2014 survey of 2,000 companies by the Advanced Energy Economy Institute found that state energy policies have created over 430,000 jobs in 2014, which was an increase of 5% over the prior year. The survey also noted the significant comparative advantage California has over other areas, as demonstrated by the state having the most domestic installed solar capacity, solar jobs, total advanced energy investment, and electric vehicle sales. Another important finding was that 77% of the responding firms only had customers in California and only 3% had customers outside the U.S. Given California's geographic location and already demonstrated capability to successfully engage within global supply chains, export opportunities could be substantial for California's advanced energy industries.

- 8) **Career Pathways in the Clean Tech Industries:** An initial analysis by the Air Resources Board on the employment impact of AB 32 showed that the utility industry would be the most significantly impacted. Employment losses could be nearly as high as 15%. A related policy brief by UC Berkeley's Center for Labor Research and Education found that implementation of AB 32 would likely present significant workforce challenges and that a successful transition to green technologies would require a well-trained technical and blue-collar labor force. In the absence of careful and farsighted implementation strategies, the policy brief stated that California could lose businesses to other regions and ultimately result in trading well-paying jobs for new jobs of lesser quality.

Concurrent with the initial implementation of AB 32, the Green Jobs Council (Council) was established at the California Workforce Development Board. The Council proposed the use of sector strategies for meeting the demands of the various green industries (see chart above) and began work on providing a state-level framework to support and leverage regional sector initiatives. In addition, the Council also worked to identify and reduce impediments and strengthen state-level sector partnerships. While it appears that the Council is currently dormant, some of its work has continued through a range of small scale and uncoordinated workforce agreements.

According to the (draft) 2015-16 Investment Plan for the Program, the Commission has three active interagency agreements on workforce, including \$7.25 million with EDD, \$9.5 million with the Employment Training Panel, and \$5.5 million with the California Community Colleges Chancellor's Office. For the same time period, the Commission was setting aside an additional \$3 million.

Workforce Training Funding					
Partner Agency	Funded Training (in million)	Match Contributions (in millions)	Trainees	Businesses Assisted	Municipalities Assisted
Employment Training Panel	\$7.0	\$9.9	12,675	92+	14+
Employment Development Department	\$7.25	\$7.25	999	36+	--
Community College Chancellor's Office	\$5.5	N/A	N/A	480	--
Total	\$19.75	\$17.4	13,674	608+	14+

Source: 2015-16 Investment Plan for the Alternative and Renewable Fuel and Vehicle Technology Program

Here is an example of the type of work being undertaken through these interagency agreements: The Employment Training Panel and Blue Sky received a \$59,280 Program grant to train 19 employees to update their manufacturing skills, including yard workers, operations/maintenance staff, refiners, and drivers in the processing and distribution of biodiesel products.

- 9) **Suggested Amendments:** Committee staff understand that the author will be requesting that the Committee adopt amendments that expand the existing workforce training criteria to authorize funding for training related to the development and deployment of innovative technologies that transform California's fuel and vehicle types and assist the state in implementing its climate change policies, including training programs that are linked to career pathways for experienced workers in jobs that will be phased-out as the state transitions to a low-carbon economy and for low-skill workers to enter or continue in a career pathway that leads to middle-skill, industry recognized certificates or apprenticeship opportunities.
- 10) **Related Legislation:** Below is a list of the related bills.
 - a) **AB 865 (Alejo) California Energy Commission Grants and Loans Diversity:** This bill requires the California Energy Commission (CEC) to develop and implement an outreach program to inform certified businesses owned by women, minorities, disabled veterans, and gay, lesbian, bisexual, and transgender individuals of CEC workshops and funding opportunities, as specified. Status: Signed by the Governor, Chapter 583, Statutes of 2015.

- b) **AB 1420 (V. Manuel Pérez) Inventory of Innovation Infrastructure:** This bill requests the California Council on Science and Technology (CCST) and the California Spaceport Authority (CSA) to seek funding to expand their assessment of the state's innovation infrastructure capacity including university research facilities, private research parks, manufacturers and incubators. Further, the bill authorizes the CCST and the CSA to collaborate with public and private colleges and universities, corporations with research capacity, economic development organizations, investment and finance professionals, and the California Community Colleges. **Status:** The bill was held in the Senate Committee on Rules, June 2010.
- c) **ACR 77 (Swanson) California Global Warming Solutions Act of 2006:** This resolution calls on the California Air Resources Board to meet the statutory requirements of the California Global Warming Solutions Act of 2006 for the preparation of the best available economic analysis of the emission reduction measures proposed in the AB 32 Scoping Plan and related rulemaking, particularly by enumerating the projected employment impacts by industry sector, identification of the types of jobs that will be created and lost to the state, and the expected wage levels for these new jobs. **Status:** This resolution was chaptered by the Secretary of State, Res. Chapter 109, Statutes of 2009.
- d) **SB 32 (Pavley) Greenhouse Gas Emission Reductions:** This bill requires the Air Resources Board to approve a statewide greenhouse gas reduction target equivalent to 40% below the 1990 level by 2030 and 80% below by 2050. **Status:** Pending in the Assembly Committee on Natural Resources.
- e) **SB 189 (Hueso) Clean Energy Jobs Committee:** This bill would have established the Clean Energy and Low-Carbon Economic and Jobs Growth Blue Ribbon Committee (Clean Energy Jobs Committee) for the purpose of making recommendations to state agencies on how to use climate mitigation funds to create a more inclusive economy, including business development and job creation activities. **Status:** Held on Suspense in the Assembly Committee on Appropriations, 2015.

REGISTERED SUPPORT / OPPOSITION:**Support**

None received

Opposition

None received

Analysis Prepared by: Toni Symonds / J., E.D., & E. / (916) 319-2090