



# California Hydrogen Business Council 2017 Program Plan

December 13, 2016



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## 2017 Vision

The vision is for legislative, regulatory and funding policies in California that will expand the impact of hydrogen and fuel cell solutions, providing an example for the nation.

## California Hydrogen Business Council

The CHBC is comprised of over 100 companies, agencies and individuals involved in the business of hydrogen. Our mission is to advance the commercialization of hydrogen in the energy sector, including transportation, goods movement, and stationary power systems to reduce emissions and dependence on oil. More information at [www.californiahydrogen.org](http://www.californiahydrogen.org).

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**CALIFORNIA HYDROGEN  
BUSINESS COUNCIL**

*Hydrogen Means Business in California!*



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“California has long set an example for other states to follow. And California will defend its people and our progress. We are not going to allow one election to reverse generations of progress at the height of our historic diversity, scientific advancement, economic output, and sense of global responsibility.

California was not a part of this nation when its history began, but we are clearly now the keeper of its future.”

*California Senate President pro Tempore Kevin de León and California Assembly Speaker Anthony Rendon*

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## Vision and 2017 Summary

The vision of the California Hydrogen Business Council is to reinforce California’s position as the most advanced clean energy state in the nation, expanding the sustainable use of its precious natural and renewable resources and providing clean air to its citizens, by adopting hydrogen and fuel cell technologies in transportation, power and goods movement markets.

In 2017, the CHBC will work together with industry, government and non-profits to continue our groundbreaking work in hydrogen energy storage and power to gas; renewable hydrogen pathways; public transit; and clean ports, heavy duty transportation and goods movement. New in 2017 is an expanded government affairs activity with one or more legislative and regulatory professionals to proactively guide and help execute our new advocacy efforts in Sacramento. This new support will be in addition to the consultants hired in 2016. This activity will include tracking bills, articulating CHBC positions, managing the process, engaging with other trades and NGOs, and leading consideration of CHBC-led proactive positions in partnership with our allies.

By 2020, the CHBC will seek to quantifiably reduce air and greenhouse gas emissions by contributing to the goals of bringing 20,000 FCEVs on the road in California; featuring 100 operating public fueling stations; putting several hydrogen medium and heavy duty fleet operations in place; and demonstrating progress toward 2025 public transit goals of 150 FCEBs on the road with fueling stations, have at least 5 transit agencies operating more than 20 FCEB with one fueling station each in California; at least one transit agency with more than 50 FCEB in service, more than 25 additional transit agencies informed of FCEB progress, performance, cost, and infrastructure five operating Power-to-Gas projects; and 50% of hydrogen for transportation from renewable sources.

The CHBC is uniquely qualified to meet those goals because it bridges energy silos and industry sectors that are commonly viewed individually. As such, it is a **unique advocate, convener, collaborator and communicator** for cross sector market interests.

## 2017 Goals

Key CHBC goals for 2017 are presented below. Detailed activities to achieve these goals are provided in the designated “program areas”.

**Goal #1: Actively influence the legislative and regulatory agenda to remove barriers to the expansion of hydrogen and fuel cells** in an effort to reduce greenhouse gas emissions, improve air quality, and integrate renewable energy. Create an advocacy committee and hire one or more government affairs representatives. The legislative expansion will increase the visibility and effectiveness of CHBC market sector advocacy, transforming the value for our existing and potentially new members. See Program Area: Advocacy.

**Goal #2: Position the hydrogen and fuel cell industry in California to defend progress made in climate, clean air and energy policies against federal measures seeking to overturn, repeal or water down said policies.** Build coalitions with state agencies and allies representing or affecting California in Washington D.C. and create a long term plan for hydrogen and fuel cell business development in California, identifying vulnerabilities to outside and internal influences. See Program Area: Advocacy.

**Goal #3: Advocate for increased support and recognition of the renewable energy role of hydrogen**, highlighting the industry’s alignment with environmental groups and support reducing greenhouse gases and air emissions. Publicize a “Roadmap for Renewable Hydrogen” and conduct activities related to this publication. See Program Area: Hydrogen Energy Storage, Power-to-Gas and Renewable Hydrogen.

**Goal #4: Enable Hydrogen Energy Storage and Power-to-Gas to be considered a viable alternative to commonly accepted energy storage solutions** by government agencies and utilities and reduce existing barriers to its implementation. See Program Area: Hydrogen Energy Storage, Power-to-Gas and Renewable Hydrogen.

**Goal #5: Increase the utilization of hydrogen and fuel cell technology in California ports, goods movement, and the medium and heavy duty transportation sector** in close coordination with government agencies. See Program Area: Heavy Duty Transportation, Goods Movement and Clean Ports.

**Goal #6: Broaden the adoption of fuel cell buses in California transit operations**, in coordination with the ZEBRA group and key stakeholders, to enable **higher volume bus projects and reduce unit cost.** See Program Area: Public Transit.

**Goal #7: Create a market sector action group** to address challenges in the development and expansion of the **hydrogen fueling infrastructure** by sharing information and experiences among infrastructure developers. See Program Area: Infrastructure.

**Goal #8: Reframe the membership committee to focus on business expansion and attracting hydrogen businesses to California**, supported by CHBC programs that create a strong interest in CHBC membership. See Program Area: Business Expansion and Membership Development.

**Goal #9: Develop the “Hydrogen Story”** to capture the imagination of agency and legislative representatives to support CHBC’s advocacy efforts. See Program Area: Strategic Communications.

**Goal #10: Host technology tours, quarterly topical workshops with networking components and one Summit**, creating tangible outcomes, including reports, which are publicized and distributed widely to increase the impact of their findings. See Program Area: Strategic Communications.

## Overall Responsibilities of SAGs and Committees

The CHBC will continue to expand the management and advocacy of market sector interests through its committees and sector action groups (SAGs). They will be:

- **Advocacy Committee** – oversee implementation of, and coordination of, CHBC-wide and SAG-generated policy and regulatory activities and direct CHBC’s government affairs representative under the direction of the Board and Executive Committee
- **Hydrogen Energy Storage, Power-to-Gas and Renewable Hydrogen SAG** – the focal point for energy storage, renewable pathways to hydrogen and work that relates to utilities and stationary power, the Public Utility Commission and Cal ISO
- **Public Transit SAG** – FCEV buses and fueling stations in transit operations
- **Goods Movement, Heavy Duty Transportation and Clean Ports SAG** – principally fuel cell electric medium and heavy duty vehicles and mobile and stationary hydrogen and fuel cell products for freight systems, including hydrogen and fuel cell solutions in the ports
- **Business Expansion and Membership Development Committee** – guide the staff on expansion of membership activities and membership messaging
- **Strategic Communications Committee** – replacing the education and outreach committee, support electronic communications, story development, agenda setting and content for outreach materials

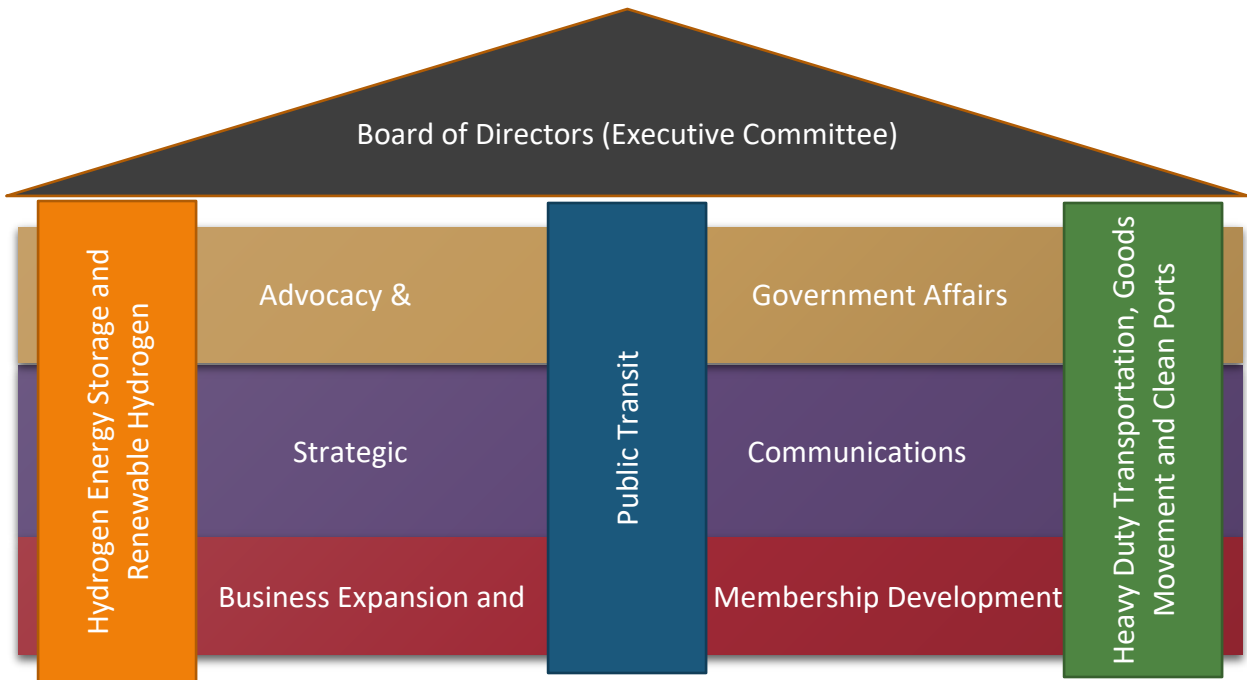
The CHBC could also create an **Infrastructure SAG**, a home for hydrogen fueling developers and infrastructure providers to address issues common to fueling station providers and operators, if there is enough support from the membership to lead and participate in this group. Currently, no resources are allocated for this SAG for 2017.

The SAGs and committees are the primary leaders of all program functions of the CHBC. In 2017, the responsibilities of the SAGs and Committees will be the following:

- Provide leadership by a chair and vice chair(s) with whom staff can coordinate
- Conduct regular conference calls to be proactive in recommending CHBC program and advocacy positions in their market sector
- Plan and conduct 1-2 hour face-to-face meetings at key events
- Review the CHBC and other calendars for procurement planning, regulatory and legislative opportunities for CHBC action
- Respond to staff and leadership requests for review of CHBC advocacy positions and other written statements
- Provide guidance for the following year program plan and budget, recommending funding strategies where activities may require additional resources

CHBC staff and board will actively discuss strategies with key stakeholders and associations in California and beyond to maximize impact and coordinate efforts.

The SAGs and Committees work under the direction of the Board of Directors and by extension, the Executive Committee, both with staff support. The figure below presents the three market SAGs as pillars, and the three Committees that work with each SAG are presented as horizontal elements, connecting among the SAGS:



## Program Areas

### Advocacy Program

In 2017, the industry will experience continued market penetration in California with its supportive business environment, and the CHBC will help businesses capture this development by growing its **advocacy** effectiveness. Covering all market sectors requires a large bandwidth of staff resources, and the CHBC will grow its membership and dues to be able to hire government affairs representatives. The representative will lead the CHBC's legislative and regulatory efforts in coordination with the Board and Executive Committee and proactively work on the CHBC's behalf. The person will actively monitor and identify areas of **California regulatory, legislative and agency deliberations and procurement planning**, in which the CHBC and its members need to be a part of the discussions. The CHBC can then help lead the discussion of energy strategies and technology deployment through face-to-face meetings, briefings, written positions, and briefings and presentations before agency and legislative staff.

An Advocacy Committee will oversee those activities, which is comprised of representatives of the Board, committee chairs and SAG chairs. CHBC staff will be responsible for management and oversight of the government affairs representative and appearances on behalf of CHBC.

Activity #1: Ahead of the legislative session, work with SAGs on **defining legislative positions** and **coordinate outreach** to potential partners and other associations to support mutual causes and avoid last minute surprises.

Activity #2: **Monitor** legislative, regulatory activity and investment plans, and **identify policy and regulatory areas** in which the CHBC and its members have an interest. Develop a calendar for key deadlines and milestones for these items and communicate them to the membership. Track bills and alert members and staff of key developments.

Activity #3: Determine the **priority** of the identified policy and regulatory issues and deciding which issues need CHBC engagement and which should inform members for their action.

Activity #4: Develop, with the Strategic Communications Committee, **CHBC messaging** to address key issues.

Activity #5: **Implement** CHBC engagement in high priority areas with smart, informed **strategic understanding** of the people that the CHBC needs to engage with to achieve CHBC objectives. Implementation includes drafting position statements and correspondence, letters, legislative language, CHBC executive communications to key government people, and personal visits by CHBC representatives.

Activity #6: Conduct an **annual policy assessment** of member policy needs and emerging policy issues to identify areas that could benefit from **proactive** CHBC action.

Activity #7: **Build relationships** with key legislators and regulatory commissioners and their staffs, in areas identified in the member policy assessment, for the CHBC to be able to be **proactive** in areas likely to receive attention during the year, and to identify emerging issues likely to affect the CHBC and its members before policy positions and actions become drafted.

Activity #8: **Create meetings** with key decision makers, in coordination with SAGs, with a clear agenda and desired outcomes.

Activity #9: Conduct a **legislative briefing** in January or February to educate new and existing members of the legislature on hydrogen and fuel cells in coordination with the CaFCP and other key stakeholders.

Activity #10: Host a **lobbying reception**, for members and their lobbyists to discuss CHBC priorities and plans.

Activity #11: Support national and state hydrogen and fuel cell associations in their advocacy efforts.

## Hydrogen Energy Storage, Power-to-Gas and Renewable Hydrogen Program

**Hydrogen energy storage and Power-to-Gas continue to fight an uphill battle with the CPUC, CEC and CAISO.** The valuing of distributed energy resources, the role of energy storage and the evolution of the utility of the future are all important extrapolations of current HES activities in which the CHBC has unique perspectives to bring to the tables where these subjects are considered. **The stationary power and grid services application** of that technology option will be leveraged to attract other fuel cell companies. With PG&E, SMUD, and Southern California Gas, the CHBC has now utility members able to guide CHBC engagement in important policy issues. Members and staff will continue efforts to engage the Electric Power Research Institute, Southern California Edison, and San Diego Gas & Electric, to broaden member input to our HES and P2G work, and to relate our members' interests better to utility businesses.

Activity #1: Recruit and hire at least 2 additional organizations/people to help in the advocacy process. These hires will be tasked on day 1 with reviewing the tasks outlined below and drawing up a specific plan of attack and sharing it with the membership – including very specific dates for Track 2 comments, people to target to get them on side etc.

Activity #2: In 2017, the **Roadmap to Renewable Hydrogen** will be completed, and outreach activities to key California agencies will be conducted to communicate the findings and recommendations. CHBC will host a webinar on the subject, led by EIN.

Activity #3: The SAG, with support from the government affairs representative, will host a **workshop in Sacramento on both HES/P2G and RH2** to lay the groundwork for engagement with legislators early in the legislative session. Staff and contractors will work diligently to identify key influencers to attend.

Activity #4: The SAG will lead development of member and industry **consensus on the definition of renewable hydrogen** and **advocate, educate and outreach for the inclusion of the definition of renewable hydrogen in legislation** in order to break down barriers to hydrogen in California. Renewable green hydrogen is a key subject for the public acceptance and market growth of the industry and needs to be the center point of the hydrogen discussion. Clarity is needed as non-renewable sources are also considered a zero carbon emission technology. The

CHBC will work with partners like the Bioenergy Organization of California, Renewable Energy Gas Coalition, California Stationary Fuel Cell Collaborative, and California Fuel Cell Partnership.

**Activity #5: Advocate for pipelines as an energy storage component.** CPUC has so far not accepted the use of H<sub>2</sub> as an energy storage option in regulated pipelines. Advocacy at the legislature, Governor's office, and CPUC need to redirect CPUC's processes to include H<sub>2</sub> as a legitimate energy carrier in both regulated natural gas and regulated electricity proceedings; initially focused on acceptance of P2G on an energy basis and without need to reconvert to electricity. Draft legislation clarifying CPUC's role in P2G process may be a good initial tool for advocacy.

**Activity #6: Advocate that energy storage does not mean only electricity to and from the grid.** Certain energy storage concepts have been accepted by the CPUC, e.g. thermal energy storage (like ice for air conditioning). CHBC will make the same argument for hydrogen, as it improves the grid dynamics and efficiency by using hydrogen for load balancing. CHBC will also connect this message to air quality issues in policy discussions.

**Activity #7: Advocate specific pathways and work with members to establish additional LCFS pathways.** Since ARB can be presented with a pathway, this activity would lead to broader ARB acceptance of hydrogen. Compile a **description for each LCFS pathway**, as it relates to the California structure of GHG emissions and carbon reduction goals. In 2016, the legislative session saw biogas, biofuel pathways formally accepted, this should be considered for hydrogen. These pathways are also referenced in economic models used by California to determine the GHG contents.

**Activity #8: Advocate to develop natural gas pipeline standards for higher hydrogen levels,** with the CHBC to develop a legislative or PUC action by the ISO to allow more hydrogen. Stakeholder input, specifically from the gas utilities, would be required regarding gas quality. Legislation had been put in place to develop this process. At the PUC and ISO, hydrogen is an energy carrier, not a program/issue. The CHBC could use existing guidelines, e.g. from the European CertifHy project, which allows 5-15% hydrogen in natural gas pipelines, or TUV Rhineland. Sandia has developed data and models on hydrogen embrittlement.

**Activity #9: Advocate to ISO & FERC issues for wholesale pricing for power related to hydrogen production.** CHBC and members will engage in ISO activities and FERC events to shift ongoing discussion on favor of a supportive hydrogen and fuel cell environment.

**Activity #10: Update the current CHBC HES P2G White Paper** with data from NREL report.

**Activity #11: Advocate for the requirement of using a percentage of renewable hydrogen in oil refining.**

## Heavy Duty Transportation, Goods Movement and Clean Ports Program

Following on the ports activities in 2016 and the roadmap developments by key agencies, 2017 plans will achieve member-driven actions to help educate the potential for hydrogen and fuel cells to address state and agency goals in these areas. Staff will participate in most NGO and agency events to communicate the industry potential in these areas.

**Activity #1: Develop a follow-up workshop on the ports workshop** held in 2016 to capture the findings by staff and rapporteur Susan, and implement the recommendations. Consider the Maritime Academy as a host in the Bay Area, work with Port of Oakland.

**Activity #2: In coordination with efforts taking place at the CaFCP, host a workshop on hydrogen-fueled freight.**

**Activity #3: Advocate for GGRF (Greenhouse Gas Reduction Funds)** to go toward Class 7 & 8 ZEV trucks by advocating at CARB Board meetings in coordination with other stakeholder, including the Sustainable Freight Action Plan, and



developing strategy papers from relevant agencies. Interact with existing initiatives, e.g. electrification of ports programs.

Activity #4: **Advocate for a multipurpose demonstration** of hydrogen in the ports, integrating different applications.

Activity #5: Raise financial support to commission a 3<sup>rd</sup> party to **quantify impact of hydrogen in Class 8 trucks and infrastructure**. The objective would be to develop a short, medium, and long term plan for reducing GHG emissions by using hydrogen. This work needs to be coordinated with UC Davis' Class 7 and 8 duty cycle study and Environ Ramboll's study.

Activity #6: Assess the **value of hydrogen** in ports for refrigerated cargo, equipment, and stationary power with a potential white paper or opportunity paper. It should include what we learned at the Ports Workshop and address what the ports need. It should include a diagram of electricity and relevant infrastructure (gas, water, electricity) at the port. This will address the issue that a port is similar to a city that is compartmentalized.

Activity #7: **Develop a ports whitepaper** that contains all of the port opportunities and a diagram of electricity and relevant infrastructure (gas, water, electricity) at the port. This is to address the recognition that a port is similar to a city that is compartmentalized.

## Public Transit Program

The Public Transit SAG will be focusing its activities around Public Transportation (including transit bus, employee and airport shuttles, school buses, and light rail) and continue to support efforts by public transit agencies around the Zero Emission Bus Resource Advocacy (ZEBRA) group, which formed in February 2016 at the workshop developed by CHBC and Sunline Transit.

The goal is to Advocate and support deployment of hydrogen fueled public transit vehicles in California

### Objectives for Public Transport SAG:

**Market focus: Public Transportation including Transit buses, School buses, Shuttles (employees, airport theme parts) and Light rail/Trams...**

1. Advocate for funding to support deployment of hydrogen fueled public transit vehicles in California
2. Provide an industry position to California stakeholders regarding FC Public Transit Vehicles and its eco-system (commercial and technology readiness, total cost of ownership and value proposition, hydrogen infrastructure and supply)
3. Provide a forum to discuss, review and share information regarding hydrogen fueled public transit solutions including value proposition, performance and operational data, infrastructure requirements, funding opportunities and policies/rule-making activities
4. Promote communication and education for California stakeholders (Transit agency, Government organizations...) regarding the operation, performances and jurisdictional/regulatory of FC Public Transit vehicles

The above objectives will be achieved through

- Publication of Industry position paper(s)
- Organization of workshops with key stakeholders
- Industry reports / publications dissemination
- Active Government advocacy campaigns
- Coordination of messaging with other organizations and advocacy groups (CAFCP, Sierra Club, ZEBRA...)

### Top three priorities for 2017

1. Advocate key stakeholders for funding to support deployment of fuel cell public transit vehicles and supporting hydrogen infrastructure in California
2. Advocate for regulations enabling the deployment of zero emission public transit vehicles in California including fuel cell buses.
3. Articulate and promote position of the Industry (CHBC members) regarding hydrogen fueled public transit vehicles and its eco-system in California

### Activities for 2017

Activity #1: **Host a FCEB workshop** to promote current commercial/technology/performance status of FCEB to key California stakeholders (Transit Agencies (ZEBRA), CARB, etc.) such event should be done in cooperation with California Fuel Cell Partnership who is working on “Fuel cell bus road map 2.0”

Activity #2: **Follow regulations on ZEB** and near-ZEBs and **advocate for funding** for fuel cell electric buses to state and federal agencies and transit system operators.

Activity #3: **Create a position paper to be used for advocacy purposes about fuel cell electric bus presenting current commercialization status and value proposition of zero emission fuel cell electric buses in California:** paper would present the significant advantages of fuel cell electric bus and hydrogen gas over other zero emission vehicles to California stakeholders.

Activity #4: **Communicate** that CHBC provides a point for communication between transit/fleet operators, bus OEM’s, technology providers and industrial gas providers.

#### Advocacy:

Key agency, regulatory and legislative personnel to be approached

- A. CARB (AQIP and ACT committees)
- B. California Legislature (House and Senate)
  - a. House speaker
  - b. Senate pro-tem
  - c. Chair of the budget committee
  - d. Key assembly and senate members in H2/FC deployment constituencies
- C. Governor’s office
- D. South Coast Air Quality Management District
- E. Bay Area AQMD
- F. FTA – to support FCEB deployment in California

### Infrastructure Program

The CHBC will continue to work with the California Fuel Cell Partnership in areas of **infrastructure development and deployment planning for light duty vehicles**. While currently no funding will be allocated to this cause, if station developers agree, CHBC will provide its independent, broader industry voice for fueling station deployment, including opportunities to bridge functionality across LDV fueling, Power-to-Gas, and other market sectors.

Activity #1: Following the 101<sup>st</sup> Station Workshop in 2016, CHBC will offer to host a follow-up meeting to implement some of the outcomes and recommendations from that workshop.

Activity #2: Develop standard **terminology for station capacity**, and promote it to state agencies.

Activity #3: Develop a **universal definition** of “a **day**” and define a standard “kg per hour”, including a transparent cost per mile calculation, to standardize pricing.

Activity #4: Demystify the lack of clarity for the options for the **supply of hydrogen** by developing a **fact sheet** for public and agency consumption.

Activity #5: Provide guidance to ARB and key agencies, VW and CHBC members on the disbursement of funds from the VW settlement, with a goal of allocating at least 10% to hydrogen and fuel cell projects, including infrastructure expansion and vehicle deployment.

## Business Expansion and Membership Development Program

Key to business expansion is developing sustainable investment opportunities for the financial sector in hydrogen and fuel cell technology and projects.

Activity #1: The CHBC will create an exploratory effort to determine the challenges members experience in their relations with the **financial community**. The effort could result in building bridges with its members to the financial community to better understand the challenges and reservations from that community, and try to address them by removing existing misunderstandings, developing financial pathways for project development and improve access to capital. While a standalone workshop is conceivable, CHBC will seek to engage the financial community through other means as well, e.g. briefings at side meetings at other events.

Activity #2: The CHBC needs to continue efforts to lead new members to join at higher levels and to lead existing members to upgrade to higher levels, to continue the growth of CHBC services. The Board will undertake an effort to **upgrade existing silver members** to higher levels.

Activity #3: Staff and Board leadership will continue to **obtain important new members**. While the staff and the Board will work to continue and even expand agency support of the CHBC, since we are the industry touch point for many of the state and regional environmental and energy objectives, we have to protect the CHBC from a downturn in agency support by addressing agency desire to be more supportive of projects and events rather than general organizational support. San Joaquin Valley Air Pollution Control District is an important target for membership development. CHBC will expand staff efforts already begun to lead international companies to see the CHBC as an important tool for their expansion.

Activity #4: Develop a printed Member Directory Handbook which can be shared at meetings and workshop, outlining key products and services of members available in California.

Activity #5: Host small side events for members and non-members at key events, e.g. AMR 2017.

## Strategic Communications Program

The current Education and Outreach program will be refocusing on Strategic Communications, highlighting the need for a clear communications need in the hydrogen and fuel cell industry, and supporting all SAG outreach activities. All proposed workshops and the CHBC Summit in 2017 will be designed to be revenue neutral or better, meaning that labor and expenses will be supported entirely from registration and sponsorship revenue streams.

Activity #1: The Committee will complete the development of “**The Hydrogen Story**”, designed to build a unified vision of the possibilities and opportunities that the technologies provide with regard to a carbonless energy society and the production, storage and use of energy. This will assist in communication and advocacy efforts in Sacramento and beyond.

Activity #2: Review and with the input of the Board and other SAGs, **revise and update the Mission and Vision statement** of the CHBC as well as the other descriptive language used in publications and on the website.

Activity #3: The CHBC will host **quarterly workshops** at relevant venues for topics including: Renewable Hydrogen, Station Financing, Finance and Investing in Hydrogen, Public Transit (ZEBRA), and Clean Ports and Goods Movement. Each workshop is will plan to raise at least \$20,000 in registration and sponsorship. The workshop proceedings and results will be compiled in reports and publicized widely, including a follow-up webinar to increase exposure and impact of the findings.

Activity #4: The **2017 California Hydrogen and Fuel Cell Summit** will be planned for Sacramento in the fall. It has proven to provide a unique opportunity for business leaders to engage with policy makers, among an audience of international players. Staff will continue to make this a broad meeting of value to all members, while it also goes deep in the newest market sectors obtaining CHBC engagement. Staff will keep touch with 2017 Fuel Cell Seminar plans which do not necessarily include a California venue. Staff will also make plans to engage legislative staff and consider developing educational briefings for non-industry attendees to provide basic information on hydrogen and fuel cells.

Activity #5: The CHBC will host four **Technology Tours** around the Summit and workshops, attempting to serve all market sectors and important agency leadership.

Activity #6: The Committee will oversee the development of plans for a **webinar series** on topics related to hydrogen and fuel cells, developed in coordination with interested members and outside groups like YPE.

Activity #7: The **relaunch of the CHBC Website** will be scheduled for Q1 2017, since the current CHBC website requires an update due to its current reliance on Drupal 6, for which support has expired. It has since become unstable, impacting the experience for members. CHBC will seek bids to develop a new searchable website with similar functionality, including a membership site, payment option for dues, event calendar, and integration with Salesforce. A separate advanced registration system will be provided by TTC. Additional content will be created, including: FAQs on hydrogen and fuel cells in California, a Speaker Bureau which includes a list of speakers and their topics that CHBC can make available to organizations wanting to organize a presentation, and case studies developed by members with compelling short stories about what H2 breakthroughs have already been accomplished.

Activity #8: The Committee will advise in the development of **educational materials** like one-page handouts to be used in support of SAG communications and meetings with legislators and agency representatives, which condense key points.

Activity #9: Update and expand CHBC's **database** of key journalists and **media contacts** in order to better message hydrogen and fuel cell content and activities.

Activity #10: Compile and promote CHBC's **event and conferences calendar** to keep the membership informed about workshops, proceedings and other activities of interest.

## Management

CHBC's technical and management services contractor will continue to expand staffing beyond its Washington DC office with a group of part time consultants in California, in different regions and with special market and technical expertise. Added in 2017 will be a specialized government affairs representative with expanded representation in Sacramento to provide participation in agency and legislative activities and strategies. Staffing will be augmented by member participation where members can represent the broad CHBC interests. The goal is having the CHBC represented in face-to-face meetings and calls in the combination of NGO, agency and legislative settings to effect

policy positions, identify policy issues, and act upon strategic information gathered through regular meetings and calls with SCAQMD, BAAQMD, ARB, CaFCP, FCHEA, CEC, CASIO, and CPUC.

The **funding strategy** and will emphasize continued membership growth and upgrades, and dues level increases, particularly for the higher membership categories. That additional budget will pay for a separate government affairs representative, which will be directed by the Advocacy Committee and managed by CHBC management. Recognizing the way some member and other organizations budget, staff will invite **sponsor and membership upgrade discussions** in December 2016 and early 2017. CHBC staffing is currently:

Position	Individual
<b>Executive Director</b>	Jeff Serfass
<b>Assistant Director</b>	Emanuel Wagner
<b>Senior Advisor</b>	Mark Abramowitz (in Yorba Linda, environmental)
<b>Senior Advisor</b>	Bud Beebe (in Sacramento, utilities, utility regulation and renewables)
<b>Advisor</b>	Diane Moss (in Los Angeles, advocacy)
<b>Project Coordinator</b>	Cory Shumaker (in Santa Monica, clean freight, ports and transit)
<b>Events Coordinator</b>	Vera Medici
<b>Finance Coordinator</b>	Cordelia Pearson
<b>Government Affairs</b>	TBD

## Budget

The **funding strategy, identified above relies in part on** increases in dues amounts for specific membership categories, changes range from -10% to +67%. Individual memberships will be merged with Bronze membership, eliminating any non-organizational membership level since this is a business organization. To allow for a smooth transition, the new membership level will be reduced from \$600 to \$500. Existing individual members will be given through 2017 to upgrade to an organizational member category.

Current membership level		Increase	
Individual	\$250	+100%	\$500
Bronze (3 or less staff in North America)	\$600	-16%	
Silver	\$1,250	20%	\$1,500
Gold	\$3,000	33%	\$4,000
Platinum	\$6,000	67%	\$10,000
Platinum (Executive)		Directed Funding (\$5,000+)	\$15,000+

**Registration fees** for Summits and workshops will be increased to the several target audiences by \$21 to \$40. The Sacramento Summit will continue to offer free registrations for government employees and a limited amount of free registrations may be offered to critical target audiences for other events. Onsite registration will cost an additional \$50 for all to encourage online registration.

Fees	Early Bird Member rate	Member rate	Early Bird Regular rate	Regular rate
Summit:	\$219	\$249	\$359	\$399
Workshops:	\$129	\$150	\$229	\$250

The **total revenue**, including events, is \$361,500, of which dues revenue is \$210,000. The anticipated sponsorship and registration revenue for events is \$150,000. The **total expenses** amount to \$361,000, of which expenses for externally funded events add up to \$137,500. The **net revenue** for 2017 is projected to break even.

The Board objective of planning for a surplus and a strategy to yield, over a period of several years, 6 to 12 months of operating reserves is not addressed in this budget. A review of the 2016 year-end surplus and net asset value should be considered, with possible revision of this 2017 budget to yield the desired result. The data to consider are:

2016 began with a net asset value of \$109K. The above budget anticipates a 2016 surplus of \$10K. The total of these two figures is \$110K, the expected 2016-year end net asset value. The total 2017 program expense budget is \$218K. The 2016-year end expected net asset value is 60% of the operating budget, without events.

Our reserve may be considered to be adequate, particularly since we have been seeing surpluses above budget each year recently.

California Hydrogen Business Council 2017 Program Plan

CHBC BUDGET FOR 2017	2015 Actuals	2016 Annual Budget	2016 Projected Jan-Dec	2017 Proposed Budget	O/(U) 2017 Budget vs. 2016 Projected	Notes
<b>Revenue</b>						
<b>Membership Dues</b>						
Individual Memberships (\$250) 2017:\$500	4,840	6,250	5,250	17,500	(2,750)	35 Bronze (-6)
Organiz. Memberships - Bronze (\$600) 2017:\$500	9,350	10,200	15,000			
Organiz. Memberships - Silver (\$1,250) 2017:\$1,500	36,300	41,250	42,500	52,500	10,000	35 Silver (+1)
Organiz. Memberships - Gold (\$3,000) 2017:\$4,000	11,000	18,000	12,000	20,000	8,000	5 Gold (+1)
Organiz. Memberships - Platinum (\$6,000) 2017:\$10,000	33,000	42,000	54,000	120,000	66,000	12 Platinum
Organiz. Memberships - Platinum Executive (\$10,000+)	30,000	40,000	30,000		(30,000)	included in Platinum Category
<b>Total Membership Dues</b>	<b>124,490</b>	<b>157,700</b>	<b>158,750</b>	<b>210,000</b>	<b>51,250</b>	<b>32%</b>
<b>Event and Project Revenue</b>						
Technology Tours	500	500	500	500	0	2 Tech Tours - \$250/meeting
VIP Events	1000	1,000	1,000	1,000	0	4 VIP Events - \$250/meeting
Legislative Day	10,000				0	No Revenue expected
Additional Advocacy Support			5,000		(5,000)	
<b>Total CHBC Events</b>	<b>11,500</b>	<b>1,500</b>	<b>6,500</b>	<b>1,500</b>	<b>0</b>	
<b>Events &amp; Projects (Revenue Raised by Sponsorship &amp; Registration)</b>						
CHFC Summit Registration	12,000	17,500	25,000	22,500	(2,500)	Registration
CHFC Summit Sponsorship	15,000	25,000	37,500	35,000	(2,500)	Sponsorship
Spring (Finance or Renewable Hydrogen) Meeting	24,500	25,000	12,934	20,000	7,066	Sponsorship and Registration
Summer (Alternative Fueling Station Financing Models) Meeting		10,000	25,000	20,000	(5,000)	Sponsorship and Registration
Fall (Transit) Meeting		17,500	6,500	20,000	13,500	Sponsorship and Registration
Winter (Ports) Meeting	4,000	19,500	30,671	20,000	(10,671)	Sponsorship and Registration
Supplier Workshop		12,500	650	2,500	1,850	Sponsorship and Registration
EIN Roadmap to Renewable Hydrogen Study Support			10,000	10,000	0	
<b>Total CHBC Events</b>	<b>55,500</b>	<b>127,000</b>	<b>148,255</b>	<b>150,000</b>	<b>1,745</b>	<b>1%</b>
<b>Total Revenue</b>	<b>191,490</b>	<b>286,200</b>	<b>313,505</b>	<b>361,500</b>	<b>47,995</b>	<b>15%</b>
<b>Expenses</b>						
<b>Program Activities</b>						
Advocacy & Government Affairs		7,000	7,000	82,000	75,000	Advocacy and CHBC Support
Legislative Day				5,000	5,000	Labor and Expenses
Hydrogen Energy Storage	8,500	11,000	11,000	24,000	13,000	Includes Contractor Work
Public Transit	20,000	11,000	11,000	20,000	9,000	Includes Contractor Work
Goods Movement	6,500	11,000	11,000	20,000	9,000	Includes Contractor Work
Infrastructure						
Membership Development & Business Expansion	19,500	17,900	17,900	11,000	(6,900)	Part of Core Activities
Management & Finance	22,500	17,500	17,500	17,500	0	Part of Core Activities
Education and Outreach, VIPs, Tech Tours	20,500	21,000	22,500	27,500	5,000	Part of Core Activities
Board Meeting Expenses	1,141		484	1,000	516	
Spring Meeting		15,000	15,000		(15,000)	For 2017, not in retainer
Fall Summit		21,500	21,500		(21,500)	For 2017, not in retainer
Contractors		29,000	29,000		(29,000)	Contractor work under programs
<b>Total Program Activities and Events</b>	<b>98,641</b>	<b>161,900</b>	<b>163,884</b>	<b>208,000</b>	<b>44,116</b>	<b>27%</b>
<b>Administrative Expenses</b>						
Brochures / Presentation Folders/Printing	2,000		750	1,000	250	Budget for 3 prints
Website Update	1,000			6,000	6,000	
Website Hosting and license fees	183		183	200	17	
Liability Ins & D&O	2,050	2,712	2,800	2,800	0	
Accounting	500	115			0	
Tax Preparation	750	750	750	862	112	Nona Tax Prep
1099 Prep	150	150			0	
Additional Advocacy Support			5,000		(5,000)	
<b>Total Other Administrative Expenses</b>	<b>6,633</b>	<b>3,727</b>	<b>9,483</b>	<b>10,862</b>	<b>1,379</b>	
<b>Total Programs and Expenses</b>	<b>105,274</b>	<b>165,627</b>	<b>173,367</b>	<b>218,862</b>	<b>45,495</b>	<b>26%</b>
Credit Card Fees & Cybersource Fees	2,700	3,400	4,000	4,500	500	
Tax Return Fee	35	35	35	35	0	
<b>Direct CHBC Account Expenses</b>	<b>2,735</b>	<b>3,435</b>	<b>4,035</b>	<b>4,535</b>	<b>500</b>	<b>12%</b>
<b>Events &amp; Projects</b>						
CHFC Summit Labor	35,000			25,000	25,000	previously CHBC Fall Summit
CHFC Summit Expenses	18,000	27,200	20,000	20,000	0	previously CHBC Fall Summit
Spring (Finance or Renewable Hydrogen) Meeting	17,000	17,000	18,441	20,000	1,559	Incl. Labor and Expenses
Summer (Alternative Fueling Station Financing Models) Meeting		10,000	25,000	20,000	(5,000)	Incl. Labor and Expenses
Fall (Transit) Meeting		16,200	6,500	20,000	13,500	Incl. Labor and Expenses
Winter (Ports) Meeting		18,000	30,671	20,000	(10,671)	Incl. Labor and Expenses
Supplier Workshop		12,500		2,500	2,500	Side meeting to CHFC Summit
EIN Roadmap to Renewable Hydrogen Study Support			10,000	10,000	0	10% from EIN Roadmap
<b>Total Events</b>	<b>70,000</b>	<b>100,900</b>	<b>110,612</b>	<b>137,500</b>	<b>26,888</b>	
<b>Total Expenses</b>	<b>178,009</b>	<b>269,962</b>	<b>288,014</b>	<b>360,897</b>	<b>72,883</b>	<b>25%</b>
<b>Net Income</b>	<b>13,481</b>	<b>16,238</b>	<b>25,491</b>	<b>603</b>	<b>(24,888)</b>	<b>-98%</b>

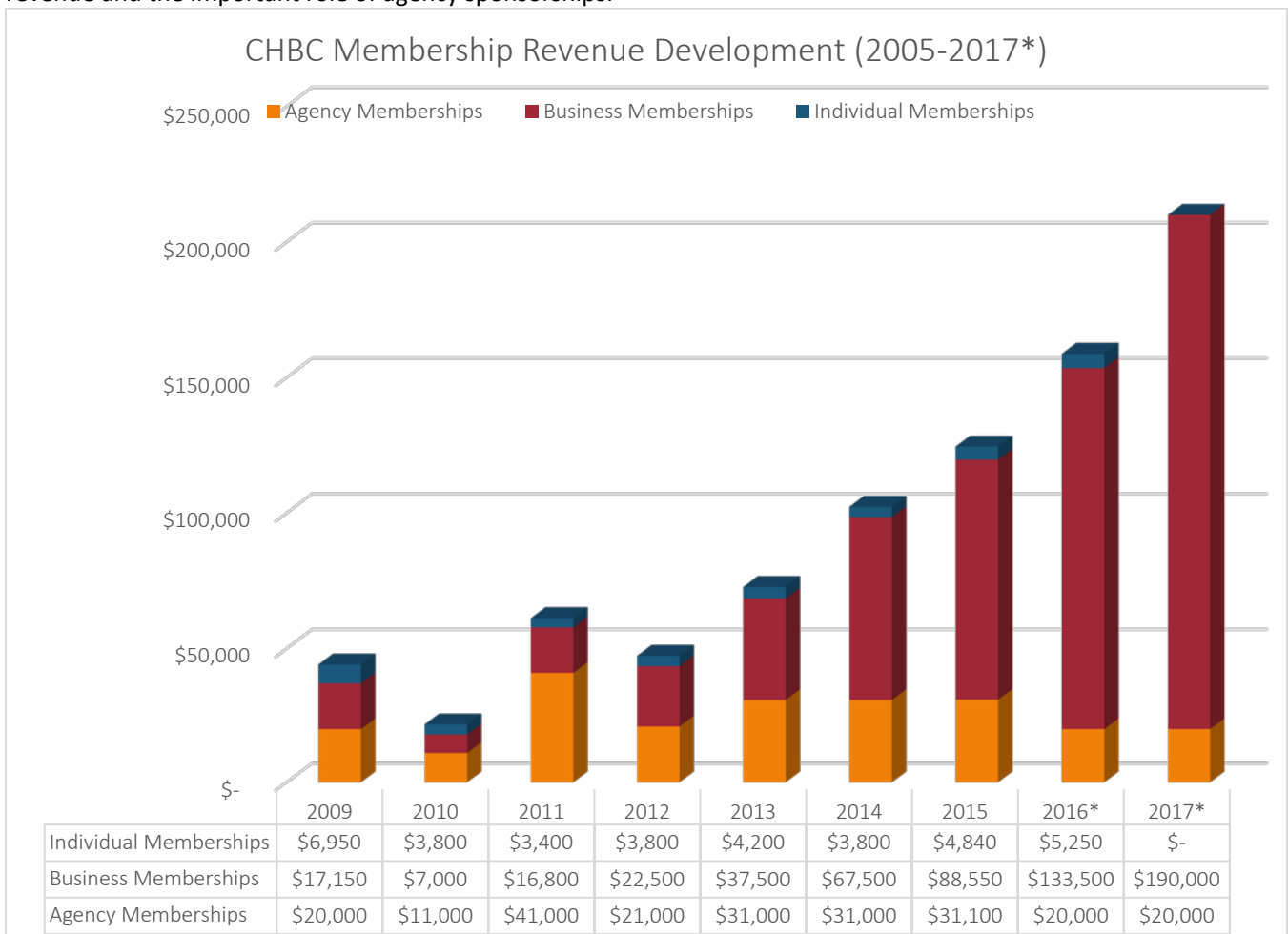
## 2016 Recap

The CHBC has completed the transition to management and advocacy of market sector interests through its committees and market sector Strategic Action Groups in 2016. The engagement of the membership in these groups is underscored by the amount of activities and enthusiasm in the groups, and continued dialogue outside of regular meetings and calls. The advocacy activities spearheaded by the SAGs and approved by the Executive Committee have shown that reactive engagement with agencies and the legislature is working, albeit requiring improvement to react to fast developing situations.

As in previous years, the CHBC has continued to expand the membership base to create a real business network and put it on a stronger footing. In 2016, in addition to advocacy, sector action group activities, and Summits, the CHBC held 4 unique workshops, including the “Financing the 101st Station” workshop, a transit workshop, a supply chain workshop, and the “Hydrogen and Fuel Cells in the Ports” workshop.

The 2016 plan was aggressive in the number of events and market sector impacts desired, and only one event has not been planned, the Silicon Valley Briefing. The two signature events have been the Spring Summit at the ACT Expo in Long Beach, and the California Hydrogen and Fuel Cell Summit in Sacramento.

The chart below displays the significant increases in revenue over the years, the growth in business membership revenue and the important role of agency sponsorships.



CHBC Membership Revenue Development (2005-2017\*)



It is important to realize that financial member support is provided in two important ways:

- Membership dues, with a membership structure that encourages Gold and Platinum level membership with corresponding increases in services and visibility in CHBC publications and events
- Member sponsorship of events, funding that allows these events to take place and that allows the CHBC to dive deeper into specific program areas. In 2016, additions support from member went to these events and activities:
  - Transit Workshop
  - Spring Summit
  - Supply Chain Workshop
  - Financing the 101st Station Workshop
  - California Hydrogen and Fuel Cell Summit
  - Hydrogen and Fuel Cells in the Ports
  - Roadmap for Renewable Hydrogen

The CHBC has been able to achieve a number of objectives this year, including:

- Continuation and growth of the CHBC Sector Action Groups
- Relationship development with meetings with CPUC staff and briefing of CPUC leadership
- Using Strategic Action Groups for review of staff plans and potential advocacy positions
- Initiation of a California government agency and legislative events calendar to help staff, members and committees keep a focus on the activities and deadlines for important actions
- ED participation in ARB Advanced Clean Transit Technology Symposium at CalEPA, February 8
- ED testimony at SCAQMD on the Air Quality Management Plan, July 14
- Spring Summit with 100+ attendees
- Supply Chain Workshop part of Spring Summit
- Transit Workshop at SunLine Transit
- Held Technology Tour at SunLine Transit
- 1<sup>st</sup> Board Meeting in Long Beach, 2<sup>nd</sup> in Sacramento, 3<sup>rd</sup> in Los Angeles
- Monthly review meetings of staff and CHBC Chair
- Issued 2015 Annual Report
- Update of CHBC website with new materials
- Development of 3-day Summit in Sacramento
- Executive Director meetings with government agencies and leaders, e.g.: SCAQMD, CEC, GoBiz, CSFCC, CaFCP, ARB, DOE
- Continuation of Cory Shumaker as TTC contractor for California CHBC support; continuation of Mark Abramowitz's strategic briefings to Executive Director for added policy and environmental eyes and ears, and addition of Bud Beebe for Sacramento and San Francisco agency engagement
- Hydrogen and Fuel Cells in the Ports Workshop held November 10
- Sent a letter of support for the Low Carbon Fuel Standard (LCFS) on July 1
- Submitted a letter of support AB1657 to direct cap-and-trade funding to California's public ports
- Submitted a letter of support for SB 1043 (Allen) to direct the California Air Resources Board to study and develop recommendations to promote the expanded use of biogas and renewable gases
- Submitted a letter of support for AB 2673 (Harper) - Sales and Use Tax Exemption & Income Tax Credits for Hydrogen Refueling Station Equipment.

Committees and Strategic Action Groups have developed with dozens of individuals involved:

- Education and Outreach Committee
- Business Expansion and Membership Committee
- Hydrogen Energy Storage and Renewable Hydrogen SAG
- Transportation and Public Transit SAG
- Goods Movement SAG (includes Ports, Heavy Duty and Freight)

Membership revenue has increased considerably due to dues increases and 24 new members, equaling \$24,000 in new revenue, including PG&E at the Platinum Level, Sumitomo Corporation at the Gold Level, Cambridge LFC Group, ElDorado California, First Element Fuel, Greenlight Innovation, Hydrogen XT, i-2-m, and PDC Machines at the Silver Level. US Hybrid and Cambridge LCF upgraded to Platinum.