Houston-Galveston Clean Cities Coalition
Annual Operating Plan
2016-2017

SECTION I: BACKGROUND INFORMATION

Coalition Information

The Houston-Galveston Clean Cities Coalition was officially established in partnership with the DOE in 1996. HGCCC completed re-designation process in February 2016 was officially re-designated in June 2016. The primary mission of the HGCCC is to facilitate the use of alternative fuels, advanced vehicle technologies, and fuel conservation strategies in order to reduce air pollution through the displacement of petroleum. This annual operating plan covers our activities from January 1st 2016 to December 31th 2017.

The HGCCC is housed within the Houston-Galveston Area Council (H-GAC), which serves as the region's MPO and COG. The Board of Directors acts as the fiscal agent for H-GAC and the Metropolitan Planning Council determines funding support for Clean Cities from federal transportation dollars. In addition to dollars from the US Department of Energy (DOE), HGCCC works closely with H-GAC's other air quality programs, especially Clean Vehicles, which provides various sources of funding for purchasing and upgrading to newer, cleaner technologies.

Coalition administration is funded in part by the Clean Cities support contract. HGCCC does not require membership dues. Additional support for coalition staffing and administration comes from federal grants provided under existing programs at H-GAC, as well as partnerships with statewide initiatives and alternative fuel alliances. Additionally, many of the HGCCC workshops and events utilize in-kind support from industry partners and financial support through sponsorship agreements, event registration and exhibition fees.

HGCCC serves 8 southeast Texas counties: Harris, Brazoria, Chambers, Fort Bend, Galveston, Liberty, Montgomery, and Waller. This area is classified by the EPA as the Houston-Galveston-Brazoria (HGB) ozone non-attainment region based on its air pollution level.

Core Coalition Personnel

Shelley Whitworth

Clean Cities Co-Coordinator / Program Manager

- 20 – 30 hours per week
- Oversight of Houston-Galveston Area Council Air Quality Program including Clean Cities
- Support program contract and planning activities as necessary

Andrew DeCandis
Senior Planner

- Manage social media content, monthly newsletter, frequent blog posts as needed
- Support HGCCC other activities as needed

Yue Zhang
Planner

- 10 hours per week
- Assist with DOE deliverables such as alternative fuel price report and annual alternative fuel report
- Support event planning, website maintenance, and other activities as needed

SECTION II: MARKET ANALYSIS

Infrastructure Availability

Alternative fuel infrastructure in Texas has greatly improved over the last five years. State funding from the Texas Emission Reduction Program (TERP) programs, The Clean Transportation Triangle (CTT) and Alternative Fueling Facilities (AFFP), has helped complete the Texas Triangle. Drivers can now access many alternative fuel stations while driving along the highway system (Interstates 45, 10, and 35) connecting Texas's four main metro areas: Houston, Dallas, Fort Worth, and San Antonio, well as Austin.

In the Houston-Galveston region, electric, ethanol and LPG stations are currently the most widely available. TERP gave the second most funding to electric vehicle charging stations. Electric stations densely populate the center of Houston within the 610 loop, especially in the southwest portion of city, making access easy for light-duty urban travelers. The northeast portion of the region (east of I-69 and north of I-10) only shows 3 stations available.

LPG stations are the most evenly dispersed across Texas, largely because of U-Haul, which owns 31 stations in the Houston-Galveston area alone. Of the 31 other LPG stations in the HGB region, the vast majority are small businesses that sell propane for a variety of purposes, including to power homes and mobile homes. Four others privately serve ISDs. The distribution of these stations seems most beneficial to fleets traveling long distances because there is not a high density of them available within the 610 loop. Ethanol stations, the third most available fuel with 53 stations in the region, show a similar

distribution problem, with no locations inside the 610 loop and only 7 within the Beltway 8. Big chains Kroger, Corner Store and Stripes Store have integrated the sale of E85 with the sale of traditional fuels.

19 CNG and three LNG stations are currently operating in the HGB region. Natural gas, particularly CNG, has demonstrated the most growth. Alternative fuel consultants report more demand from fleets for natural gas conversions. According to the Annual Report submitted in March 2016, 11 new public CNG stations opened in the Houston-Galveston area in 2015-2016. Stakeholders also reported two new public and one private Electric Charging Outlets were installed opened in 2015-2016. Additionally, three new private propane stations were opened at the same time.

The current need is to know where a vendor would put a station if they knew it would pay off financially. Fleets considering alternative fuels need to learn more about AF infrastructure in their operating area and gain confidence that alternative fuels will be available when and where they are needed.

In August 2016, H-GAC CCC submitted nominations to U.S. Federal Highways Administration and TxDOT for the newly established National Alternative Fuel Highway Corridors. FHWA accepted all nominations as current alternative fuel highway corridors that were located on either a designated federal or state highway corridor. H-GAC is developing a GIS-based mapping tool to help match alternative fuel fleets with existing infrastructure in the HGB region. This mapping tool is a localized version of the USDOE Alternative Fueling Station Locator. In addition, H-GAC will survey fleet operators about the composition of their fleets, fuel usage, and how the availability of AF stations in target areas could impact business growth. Fleets can use the tool to suggest new locations for fueling stations. H-GAC will then make this information available to alternative fuel providers to help them better locate new infrastructure, with the assurance that this station would be financially viable. We expect that this will result in expanding the available alternative fuel infrastructure within the HGB region and should assist in designating future nominations to the Federal Alternative Fuel Corridor System.

Alternative Fuel Vehicles and Advanced Technology

Buses, Vans, Shuttles
According to the Annual Report submitted in March 2016, 15 ISDs operate a total of 373 heavy-duty LPG school buses, 24 heavy-duty CNG school buses, and 32 light-duty LPG van.
In the airport industry, New South Parking uses 30 heavy-duty CNG shuttle buses.

Light-Duty Cars
Private businesses use 287 light-duty CNG vehicles in the region. Government entities (TxDOT and the City of Houston) use 20 CNG cars and 3 light-duty LNG cars.

Semi-Trailer Trucks

In the private industry, 586 of 1043 trucks are operated using CNG. The remaining 457 are LPG semi-trailer trucks.

Electric, Hybrid, Plug-In

The City of Houston operates 27 light-duty electric cars. The COH, City of Baytown, City of Sugar Land, and Houston Independent School District Houston operate 861 light-duty hybrid electric cars. The COH also operates 15 light-duty plug-in electric cars. Houston METRO operates 438 heavy-duty hybrid electric transit buses.

Adoption is continuing at a steady pace for school districts. Applications for AF refuse trucks continue to grow through Clean Vehicles grants. Beer distributors have increased involvement with AFVs. Industrial trucks can continue to be developed, particularly in the distribution centers.

Major Fleets and Major Providers

Major fleets using AFVs in the public sector are Alvin ISD, Houston ISD, Humble ISD, Clear Creek ISD, and Angleton ISD. Major fleets using AFVs in the private sector are UPS, Waste Corporation of Texas, Waste Connections of Texas, LLC., Southern Star Leasing, New South Parking, Southern Foods Group, LLC., Schwan's Home Service, Argos, BFI Waste Services of Texas, and HEB Grocery.

CNG vendors Freedom CNG, VNG Co and CNG 4 America have actively participated in the coalition and expanded infrastructure in the area. All have helped in outreach by publishing press releases, participating in case studies and/or contributing material for online features. In addition, Metropolitan Transit Authority of Harris County (METRO) will continuously working with Freedom CNG for their fleet of 200 CNG buses. METRO's new office of Innovation is working on analyzing potential efficiencies from electric and CNG vehicles and exploring cleaner transportation.

HGCCC acquired nine new coalition members which have a variety of interests in alternative fuel, technologies, and infrastructure which have a unique viewpoint into fleet conversion to alternative fuels. Among the new members, Air Water Earth Inc. provides proprietary fuel ionizers that can treat diesel, biodiesel, and other fuels to lower emissions and increase fleet mileage. They're interested in networking and funding information to introduce new technology to Houston market.

Suburban Propane is the third largest propane supplier in the US, which is currently working on expanding services in Autogas division. They commit to support the development of propane refueling, service and maintenance facilities for AFVs within Houston-Galveston area.

PowerPostEVSE by Telefonix, Inc. is a U.S. company in business for more than 25 years that manufacturers electronics products in Waukegan, IL, about an hour north of Chicago. Their "PowerPost EVSE" charging stations are purposely designed for simplicity, low-current and safety. They commit to simplifying EV adoption efforts and supporting expanding EV market in our region.

Drivers of AFV Adoption

New Policies in Texas Tax Code

On September 1st 2015, the State of Texas repealed the Texas motor fuels tax on liquefied gas (LG) or liquefied petroleum gas (LPG) (propane, butane, methane, ethane, or a mixture of those gases). Vehicles that operate using LPG, CNG or LNG no longer prepay the Texas motor fuels tax by purchasing a decal annually (fee based on the vehicles' registered gross vehicle weight rating and the number of miles driven the previous year).

CNG and LNG operators still pay a state tax of fifteen cents ($.15) per gallon. Consumers pay the tax at the pump and the licensed CNG/LNG dealer pays the tax to the state. This transfers the effort to the dealers, not the consumer, which could be favorable for CNG/LNG adoption by private fleets.

Also effective September 1st 2015, Texas municipalities are exempt from the state motor fuels tax on CNG and LNG and, if charged, can get a refund from the Comptroller's office. Metropolitan Rapid Transit Authorities and Regional Transportation Authorities are also exempt if the entity had a prepaid liquefied gas tax decal on Jan. 1, 2015, and the motor vehicle is operated by a transit company providing services or a regional transportation authority.

New Policies in Federal Tax Code

On January 1st 2016, the units of measurement used for taxation will change to reflect the energy content, rather than the volume, of LPG and LNG. LPG will go from $0.183 per gallon to $0.183 per GGE (5.75 lbs LPG). LNG will go from $0.243 per gallon to $0.243 per DGE (6.06 lbs LNG).

Summary of Taxes on AFs		
Fuel	**TX State Tax**	**Federal Tax in 2016**
CNG	$0.15/gal	$0.183/GGE
LNG	$0.15/gal	$0.183/DGE
E85	n/a	$0.183/gal
BD	n/a	$0.243/gal
LPG	n/a	$0.183/GGE
Gas	$0.20/gal	$0.184/gal
Diesel	$0.20/gal	$0.184/gal

In Texas, the biodiesel or ethanol portion of blended fuel containing taxable diesel is exempt from the diesel fuel tax.[1, 2, 3]

[1] http://www.api.org/state-taxes/texas.pdf
[2] http://www.afdc.energy.gov/laws/11220
[3] https://www.comptroller.texas.gov/404.php

Incentives Affecting AFV Deployment

The Propane Council of Texas (ProCOT) offers incentives helping to fund upgrading to propane. For the builder, the Propane education & Research Council (PERC) offers incentives ranging from $750 to $1,500 for builders who include five or more propane applications in their homes. For the fleet, ProCOT offers incentives for new business and non-profit fleets. Up to $7,500 for a purchase of new propane-powered vehicle or the conversion to propane using an EPA or CARB certified after-market conversion kit. ProCOT and PERC also provides assistance to help switch to brand new factory-built propane mower or the conversion to propane using an EPA or CARB certified kit.[4]

EPA Incentives

EPA also offers Clean Diesel national grants to assist a variety of projects include[5]:

- EPA verified technologies or certified engine configurations
- California Air Resource Board (CARB) verified technologies or certified engine configurations
- EPA verified Idle-reduction technologies
- Early engine, vehicle, or equipment replacements with certified engine configurations

Texas Emissions Reduction Plan (TERP) Incentives

The *Texas Natural Gas Vehicle Grant Program* (TNGVGP) funded the repower or replacement of heavy/medium-duty diesel vehicles with CNG and LNG with engines and vehicles. TCEQ is now accepting proposals from Participating Dealers.

The *Texas Clean Fleet Program* (TCFP) provides incentives to owners of large fleets in Texas to replace diesel-powered vehicles with alternative fuel or hybrid vehicles.

The *Emissions Reduction Incentive Grants* (ERIG) Program provides grants for eligible activities – including upgrades or replacement of heavy-duty vehicles, non-road and stationary equipment – to offset the incremental costs of projects that reduce emissions of nitrogen oxides (NOx) from high-emitting internal combustion engines.

CTT gave preference to stations that would sell both compressed and liquefied natural gas in order to encourage diversity and cater to commercial fleets traveling long distances. By August 2016, CTT and AFFP granted funding to 34 stations selling CNG (10 of those also sold LNG). The preference for natural gas gives these vendors more opportunities for beneficial inter-local partnerships like this one.

State Energy Conservation Office (SECO) Incentives

[4] http://www.propanecounciloftexas.org/incentives
[5] https://www.epa.gov/cleandiesel/clean-diesel-national-grants

The *Alternative Fuel Initiatives School Bus Rebate* Program has $600,000 available as rebates for ISDs to transition bus fleets to alternative fuels. The rebates come in $8,000 rebate per new bus, with a maximum of ten buses per district.[6]

Cost savings most effectively resonate with fleets considering transitioning to alternative fuel. Alternative fuel vendors mainly try to convey the greatly reduced cost of maintenance and the greater price stability of alternative fuels produced domestically. The marketing power of "sustainability" provides the secondary motivation. In some cases, partners/customers of private fleets will request the use of cleaner fuel.

The public, business and industry like the visibility of participating in clean air or green alternatives. The notion of local "air quality" and "cleaner air" has been very successful, especially relating to the immediate impact on the health of citizens. Several ISDs have posted articles online after winning the Clean Air Champion Award for Fleets from H-GAC's Commute Solutions department. In 2014 Dayton ISD said their "measures reduce emissions, which leads to improved public health." Brazosport ISD said "improving air quality in our community is paramount." Barbers Hill ISD said they "promote cleaner air." In 2015 Pearland ISD said "we're committed to…better air quality for our community." ISDs often stated that transporting students safely is their main priority; they also support doing so efficiently and in an "environmentally sound manner," as mentioned by Cy-Fair ISD. Three other ISDs also specifically mentioned the environment.

Public Awareness and Barriers

Fleets have been receptive to alternative fuels/technology when given financial incentives. Once fleets have joined the Clean Vehicles program and received funding, successful engagement in many other forms becomes much more likely. Fleets have participated in the Clean Air Champions Awards program and filled out surveys for the Annual Report. Unfortunately, it has been very difficult to gain private sector fleet attendance at coalition meetings to participate in discussions and meet vendors of alternative fuel and advanced technology. Public fleets have been the most receptive, especially the many school districts. School district fleets have many incentives, including tax exemption for using alternative fuels in their buses. The VISION Newsletter is part of H-GAC's ongoing outreach, which took place of a Clean Cities Newsletter because it has a wider distribution list and is published monthly (for more visibility). The Vision also has ongoing administrative support, which helped maintain a flow of communication while new coordinators were in training or the position was un-filled.

The Houston-Galveston region is known as a world capital of the oil and gas industry with over 5000 energy firms doing business. During the existing two-year downturn in oil and gas industry, region's economy has demonstrated rapid growth and crippling recessions related to the oil industry. Low gas prices are still the major barriers for alternative fuel adoptions.

[6] http://seco.cpa.state.tx.us/funding/092515/rfa_afg1_2015.pdf

Fleets hesitate to transition from older technologies because of the initial investment and lack of familiarity with newer technologies. Additionally, many diesel vehicles have been improved to be cleaner than ever.

SECTION III: 2015-2016 ACCOMPLISHMENTS

In 2015-2016, HGCCC has been officially re-designated in June by DOE. Beginning at the end of 2015, HGCCC focused on improving coalition's website by building up online membership signup function, incorporating online survey of alternative fuel fleets on the main page, and adding calendar/events modules to timely distribute meeting notice and meeting materials. The improved website helped coalition disseminate alternative fuel information more efficiently, receive more responses for the annual survey, and increase visibility of region's market transition from conventional fuel to cleaner alternative fuel. By working closely with Clean Vehicle program in H-GAC and unremittingly follow up with the stakeholders, HGCCC was able to document more than five times of petroleum displacement and greenhouse gas emission reduction during 2015-2016.

Small subgroup meetings according to different fuel interests, such as Natural gas, Propane, and EV, were held during 2015-2016 in addition to regular quarterly stakeholders' meetings. This helps coalition plan specific activities and develop specific stimulations for certain types of fuel market.

Additionally, HGCCC has been working with ISDs and distributed over 5,000 Idle Reduction Bumper Stickers and Dashboard Decals for idle reduction around region's school areas. HGCCC invited Cummins-Westport to give a presentation introducing near-zero emission CNG engine at one of the stakeholder meeting.

SECTION IV: ANNUAL PLAN

The U.S. Department of Energy Clean Cities program aims to stimulate and expand alternative fuel and advanced technology markets to reduce petroleum consumption in the United States by 2.5 billion GGEs (gas gallon equivalent) per year by 2020.

Market Development

Goal	1-year goal	3-year goal	Activities
Coalition - Overall			
Overall Goal	Report at least 5.5 million GGEs displaced in the 2016 annual survey	Report at least 7 million GGEs displaced in the 2018 annual survey	Increase reach of survey with online marketing.
Infrastructure			
Increase the number of alternative fueling refueling stations	Foster the submission of more refueling infrastructure	Accept new refueling infrastructure applications to Clean Vehicles.	Perform weekly check-ins with applicants and identify/ regularly update info about

and/or recharging stations in the coalition area. Additionally, increase fuel volume at existing stations.	applications for H-GAC's Clean Vehicles program		additional external grant opportunities.
	Gain more responses from fleet managers for the interactive alternative fuel mapping tool to find out where to plan stations.	Use the alternative fuel mapping tool as a catalyst for the establishment of at least 5 new refueling stations during 2018.	Perform outreach to fleets in Clean Vehicles. Attempt contact with fleets at least twice a week.
Vehicles			
Increase number of AFVs and/or Advanced Technology Vehicles	Foster the submission of more proposals supporting alt. fuel vehicles and regional demand.	Receive more proposals supporting alt. fuel vehicles, and regional demand in 2018	Perform weekly check-ins with applicants and identify/ regularly update info about additional external grant opportunities.
Awareness			
Increase awareness of alternative fuels and advanced vehicle technologies	Obtain 100 unique views of the HGCCC website a week as measured by Google Analytics by March 2017.	Obtain 200 unique views of the HGCCC website a week as measured by Google Analytics by March 2018.	Distribute information online and via email marketing campaigns about: Lower alt. fuel maintenance costs (vs. oil/diesel), air quality in Houston, pollution caused by "certified" technology and "well to wheels" from diesel and gas, long-term price stability of alt. fuels
Behavior			
Increase the use of smart driving or idle reduction	Receive more reports of fleets using idle reduction policies.	Receive more reports of fleets using idle reduction policies.	Create white papers, assessments and best practice documents for all alternative fuels.

Organizational Development

HGCCC plans to gain 15 members in the coming year, making for a total of 70 members by the end of 2017. HGCCC is working on recruiting more fleets who have participated in the Clean Vehicles program and reconnecting with 18 lapsed members. The Natural Gas Vehicle Alliance increased interest in our program by 10% with outreach support. Our goal is to mimic that accomplishment in other AF areas.

Coalition Meeting/Event Plan

Activity Description	Target Date	Target Audience	Topics to be Discussed

Natural Gas Subgroup Conference Call	Jan/Feb 2017	Stakeholders interested in Natural Gas	TBD
EV Subgroup Conference Call	Jan/Feb, 2017	Stakeholders interested in EV	TBD
Propane Subgroup Conference Call	Jan/Feb, 2017	Stakeholders interested in Propane	TBD
Stakeholder Meeting	01/24/17	All Stakeholders	- Funding sources update - Events planning - Review and comment on Annual Operating Plan
Clear the Air in Port Houston Conference	03/02/17	Fleet Managers Ports Municipalities City entities Businesses Fleets utilizing natural gas	- Educate the availability of natural gas vehicles - Introduce funding opportunities and infrastructure advancements - Showcase existing success stories utilizing natural gas
Biofuel Subgroup Conference Call	Apr, 2017	Stakeholders interested in Biofuel	TBD
Idle Reduction Meeting	Apr, 2017	TBD	TBD
Natural Gas Subgroup Conference Call	Apr, 2017	Stakeholders interested in Natural Gas	TBD
EV Subgroup Conference Call	Apr, 2017	Stakeholders interested in EV	TBD
Propane Subgroup Conference Call	Apr, 2017	Stakeholders interested in Propane	TBD
Stakeholder Meeting	04/26/17	All Stakeholders	
Natural Gas Subgroup Conference Call	Jul, 2017	Stakeholders interested in Natural Gas	TBD
EV Subgroup Conference Call	Jul, 2017	Stakeholders interested in EV	TBD
Propane Subgroup Conference Call	Jul, 2017	Stakeholders interested in Propane	TBD
Stakeholder Meeting	07/26/17	All Stakeholders	TBD
Greater Houston Natural Gas Vehicle Association and Natural Gas Clean Cities Stakeholders Joint Meeting	08/10/17	Stakeholders Fleets interested in Natural Gas	
Biofuel Subgroup Conference Call	Oct, 2017	Stakeholders interested in Biofuel	TBD
Idle Reduction Meeting	TBD	TBD	TBD

Natural Gas Subgroup Conference Call	Oct, 2017	Stakeholders interested in Natural Gas	TBD
EV Subgroup Conference Call	Oct, 2017	Stakeholders interested in EV	TBD
Propane Subgroup Conference Call	Oct, 2017	Stakeholders interested in Propane	TBD
Stakeholder Meeting	10/25/17	All Stakeholders	

*Coordinator Travel and Training Plan**

Conference/ Meeting Name	Date	Location
Clean Cities National Leadership Peer Review	Aug- Sep, 2017	TBD
ACT Expo	TBD	TBD
Texas Triangle Electric Charging Event	TBD	TBD
Texas Clean Air Working Group	TBD	Austin, TX
Texas Mobility Summit	TBD	TBD

SECTION V: BUDGET SUMMARY

Coalition Funding through January 2016

Current Funds Available	$50,000
Expected Dec 2016	$45,000
Expected Balance - December 2016	**$95,000**

Coalition Expenses January - December 2017

Focus Area	Expenditures	
Administration	Coordinator/Staff Travel Expenses	$5,000
Administration	Personnel Budget	$50,000
Outreach	Marketing & Education	$25,000
Outreach	Alternative Fuel/Technology Expos	$15,000
	Expected Expenditures through FY 2016	**$95,000**

This budget assumes staff time continues to be covered by existing grants outside of the Coalition's operating budget. However, it is expected that staff personnel may be charged to this budget in 2017.

Coalition Sustainability

Currently the coalition has raised approximately $80,000 to be utilized for promotion, outreach and education of Clean Cities activities.