

DEVELOPING SYNERGIES TO TRANSITION AWAY FROM TRADITIONAL FUELS INTO ALTERNATIVE FUELS

“The Six Steps”

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Executive Summary

This report is intended to serve as a reference document to be used when evaluating the transition from traditional to alternative fuels. It is not intended to ostracize any specific alternative fuel strategy, technologies, or the use of conventional fuels in the transportation industry. This is an opinion regarding developing and employing a transition plan or “synergies” to facilitate the widespread use of alternative fuels, such as natural gas, for use in a transportation environment. It is based on the point of view of an early adopter with many years of experience in the long term utilization of alternative fuels, and associated technologies, used in various applications.

The high level contents of this document will educate the reader in the process of formulating plans, ideas and synergies to ensure a seamless and successful transition to alternative fuels. I concentrate my analysis on a metered approach to developing partnerships and collaborations with numerous stake-holders, suppliers, utilities, and exterior influences within the alternative fuels arena.

The information contained in this document can be applied to almost any type of transition, from legacy and proven technologies, or to a new alternative approach by shifting the organizational paradigm. A well thought out and planned methodology to change is essential for encouraging and solidifying a high rate of success.

The transition away from traditional fossil fuels to alternative fuels (such as natural gas and others) requires a dynamic, proactive and timed approach to make the transition effective. Clearly stated goals and objectives should be precisely articulated and defined as “The Road Map.”

Alternative energy pathways are crucial to the sustained evolution away from typical fossil fuels despite the myriad challenges (both regionally and globally) to the development, analysis, and integration of non-traditional fuel applications.

Opinion

The certainty of peaking global oil production and corresponding increases in pricing will only be followed by peaks in coal extraction. In the course of human existence one thing remains certain, the need to reverse the trajectory in carbon emissions, of which alternative energy sources will be the catalyst for the future energy demands of an increasingly populated world. There has never been a better time to bring forth a change in public attitudes toward alternative fuels. Not so long ago natural gas was widely viewed as a temporary “bridge fuel” to a future of clean renewable energies. Now, amid a shale gas boom, many energy analysts regard it as a core “foundation fuel” that can power America’s economy in efficient, affordable and an environmentally responsible way for centuries to come. The fact that natural gas is a “decoupled” fuel (completely removed from traditional fuels) further solidifies its role as the new fuel standard.

Today, natural gas is by far the cleanest non-traditional fossil fuel available to date. Natural gas produces approximately 60 percent less CO₂ than coal, and 40 percent less CO₂ than oil, while also significantly reducing sulfur dioxide, nitrogen and nitrous oxides, and near zero levels of harmful particulate matter. The more oil or coal we offset with natural gas, the far fewer greenhouse gas emissions we put into the atmosphere.

Abundant, affordable and clean-burning natural gas presents a tremendous opportunity for America to realize an energy future using domestic resources to fuel our nation’s transportation needs. Natural Gas, while not immune to some of the effects of hydrocarbon emissions, has been developed for widespread use in homes, heating and vehicles.

Natural gas is native to the United States and requires no importation from foreign countries; which may or may not have our best interests in mind.

Its health benefits alone far outpace that of other technologies by reducing up to 85% less total hydrocarbons, carcinogenic particulate matter (PM) and its inherent ability to dramatically reduce Green House Gas emissions. Due to the abundance of domestic natural gas it dampens price fluctuations and provides for greater price stability and predictability. Typically, natural gas pricing only moves on a monthly basis.

Lastly, natural gas is not affected by swings in geo-political influences, and is virtually insulated from the effects of Middle East conflicts, OPEC policy shifts and most changes to regulatory climate laws. Plentiful, clean burning and relatively inexpensive compared to traditional fuels, makes natural gas the logical and safe choice to power the present and future transportation propulsion systems.

Successful Synergies

Developing successful synergies begins with a vision to create and assemble necessary resources, along with substantive objectives essential for a successful transition to alternative fuels. It is highly recommended you precisely follow the six step program and that no process in the step be excluded, while concurrently exploring all associated and relevant possibilities. This program has been time tested and proven to provide a systematic approach for transitioning away from traditional methods. A true “out-of-the-box” mindset must be applied to ensure the greatest impact of the program’s viability. The transition will not occur over a short trial-and-error lifecycle, to be successful this will require a long term collaborative departure from traditional values and avenues. You must also, stay the course.

The Six Steps:

1. Fact Finding
2. Develop your Plan(s)
3. Due Diligence
4. The Utilities
5. Identify Influences
6. Develop Synergies

1. Fact Finding

a.) Available fuels:

When you are considering a move to an alternative fuel and away from traditional fuels, you need to first review all of the various fuel technologies available. This review should be done with a broad overview of available sources and viable technologies. Selecting a new fuel which has common and uncommon attributes as to other fuels, there are elements to consider and recommendations with the following qualities which should include;

- commercially available
- relatively inexpensive
- is domestic produced (to the extent possible)
- unaffected by geo-political concerns
- available grant monies to help offset the initial investment of constructing a fueling station and vehicle technology
- long-term availability.

b.) Select a fuel source (CNG/LNG/EV) with the greatest advantage as the best alternative fuel(s) for the long-term operation of your fleet.

When you have selected an alternative fuel choice, it's very important to ensure the widespread availability of the fuel(s) for today and into the future. If this is your first engagement with alternative fuels, conduct a market analysis to make certain the fuel will be available for over ten to fifteen years (and perhaps beyond). This is a good reason to discuss this with the various fuel suppliers, and utilities.

c.) Available, proven technologies:

Review all of the proven technologies such as natural gas or propane when you initially move to alternative fuels. Avoid fuels that are considered “boutique” and do not have widespread commercial use. Be cautious to not become the “first” operation to use the potential technology. Equipment, vehicles and stations are likely not to be commercially available. Pioneering technology is good when you can temper this as an overlay with other established alternative fuel programs. Being exposed to different technologies will serve to expand your experience, and broaden your perspective however, there may not be funding or equipment solutions.

d.) Research alternative fuel users (fleets):

It is very important to reach out to established and experienced municipal and private fleets using the technology you are most interested in using. Speak to these duty experts and listen to their advice and viewpoints. You need to also inspect their operations. Generally, experienced users are very gracious about sharing their experiences; including trials and tribulations, successes and failures. This is an important step in the process and should not be overlooked. The experienced users of alternative fuels, so called “early adopters,” are a valuable resource not to be disregarded. We share all of our experiences with others.

e.) Cost benefit analysis:

Perform a cost versus benefit analysis on the fuel to which you intend to migrate. Review all interested fuels in this analyses; initially use a graph to exhibit only the fuel cost itself. Understand that your initial capital investment will be sizable, albeit, should be considered a one-time expense. The acquisition of the fueling station typically happens only once (initially) and can be amortized or depreciated into the price of the fuel (or both or neither depending on the funding mechanism). Ongoing maintenance cost of the station, utility costs, specialized training for staff, hiring of a facility engineer (as an example), and preventative maintenance schedules should all be factored into the equation.

As far as additional staff is concerned, there are a couple of different methods to assess this cost. It's not uncommon to omit personnel costs into the fueling technology costs, or the price per-gallon. There are also various solutions to consider that make the investment "cost neutral" to the facility and the new alternative fuel program. These opportunities should not be ignored, and rather used to gauge the total cost envelope. There are real cost and maintenance savings opportunities in reviewing non-traditional operating methods.

f.) Available equipment / vehicles:

Perform a manufacturing analysis on current, future, and collaboratively developed equipment technologies. This is extremely important. Establish meetings with the Original Equipment Manufacturer(s) ("OEM") and ascertain their global perspective on current and forward-developing technologies. Oftentimes, when you produce a bid for equipment/vehicles using specific alternative fuels, your results will not produce the results you anticipated. Be courageous, bold, and don't hesitate to meet with potential proposers to discuss a "how-to" proactive meeting to develop your equipment goals. Manufacturer's will often times be poised to develop the technology with you. This is the kind of strategy and creative thinking you ought to consider, and will separate you from the "followers."

g.) Know and calculate your costs and initial emissions data beforehand to realize the greatest overall economic benefit:

It is a good idea to calculate your proposed emission benefits based on the fuel, engine and after-treatment (with some technologies) you intends on implementing to know what kind of emission reductions you stand to produce. Develop emission calculators so you can utilize solid data. State and county air districts will require you to produce this data (in some cases), plus, reducing your Green House Gases in totality is one of the greatest, political pieces of information you need to have and maintain. When the opportunity presents itself, share this information with your political leaders, and all stakeholders.

GHG reduction information is also important to ensure you meet clean air standards and related goals of your entities. This can also have an effect on funding for projects as grant applications will require you to submit this information from the engines and fuel you're using. Natural gas has great strengths in this specific area, for example.

2. Develop Your Plan(s)

a.) Create the vision for change.

A successful transition to alternative fuels requires a vision for change. Take a long term approach, and use "broad strokes" to create a high level view on your intentions. No endeavors are worth taking without projecting a positive image on how, why, and where you want to be. Incorporate your vision into your plan, and document the intended outcome.

b.) Collaborate with experts and perform site visits.

Developing relationships and a collaborative management style will serve you with the greatest strengths for success. Speak to all of the parties associated in the specific area you're interested in. Remember to bring the OEM's into the discussion, and include your directors, and other stake holders.

Relationships are an insurmountable resource of expert information and you'll project a positive, proactive and even humble appearance. This is perfectly okay. Remember your experiences and document your process.

c.) Develop the project.

Craft a draft proposal with all of the inclusions you need for the transition. Engineering, mechanical, funding, utilities and fuel supplier(s), and physical location (for the station). Create your eventual procurement document. Install your vision perspective into the body of the requirements. Review this information with an expert(s), and even potential suppliers for a broad overview. Use a step by step approach.

d.) Develop a target budget.

Once you have developed your plans and project you'll need to ascertain an estimated project budget. I highly recommend being very conservative. It is far better to have ample funding for the project at the front end, than to continually pursue approval for additional funding. The better preparation you do, the more information you have collected, the greater you're potential for budget success. The budget should include all elements of the station construction, required utility costs and even the equipment. Albeit, a good vehicle utilization program should provide for a life-cycle replacement process over the duration of the vehicle service life. Nonetheless, capital outlays are required for moving into alternatively fueled vehicles. Look at this as a one-time investment of which you will determine a great pay-back analysis, and a return on investment strategy.

e.) Develop a main resource document (for reference).

The most effective information element to a successful program transition, is the creation of a reference binder. Creating this will save you hundreds of hours in research. Organize your contacts, technical research, vendors and suppliers, utilities, engineering requirements and related pertinent information.

This is your resource reference guide. You should also do a photographic timeline during construction. This is crucial.

f.) Assemble opportunities for financial offsets (grants).

There are a lot of opportunities for applying for grant money to help offset the initial (and ongoing) capital investment of the equipment (station and vehicles). Grant money opportunities can be researched through your local air quality management districts, department of energy, state association for air resources and utility companies. There are millions of dollars available in grant funding. If you elect to use natural gas as your fuel of choice, you can also contact NGV America, they are a great resource.

The important element for success, is to remember to apply early, ensure the accuracy of your grant application and to be truthful, concise and use timelines for your project. If you have never completed a grant application before, reach out to your contacts for assistance, plus there also professional grant writers that can increase your chances for success.

g.) Include milestones on incremental goals completed.

It is very important to document your progress. Identifying the milestones you achieve will provide for excellent integrity and continuity in your ability to achieve your ultimate goals. This is an important step in your ability to review the facets of your synergies.

h.) Develop a Request for Proposal for a Design, Bid, and Build of Facilities (engineering services).

Strength in the solid development and publication of a Request for Proposal, or Invitation for Bid, sent to established companies that can guide your project, supply you with quality recommendations for the installation of equipment and provide you with utility requirements, is paramount towards a successful and cost effective project.

There are several varying approaches to performing a “request for proposal.” You can perform a “turn-key” solution which tends to be higher cost. However, the “turnkey” solution offers no upfront capital outlay investments required by the end user, but rather paid back through a “term of agreement” from the fuel sales. The turnkey approach is all inclusive and offers (in most options) a fixed pricing structure over the terms of the agreement. Conversely, you may want to consider performing an initial bid that articulates the various requirements and specifications for your project whereby you own and operate the fueling station. The investments are larger at the front-end, however, you will have an opportunity to maintain full control over the operation. These examples really depend largely on your objectives. The point to this is to ensure your procurement is concise, conducive to your goals, timely and provides the maximum cost effectiveness in the long run.

i.) Create & develop an Action Plan Checklist.

Developing an “Action Plan” is important for you to know and retain a tracking device on the various steps achieved. Different from milestones, the action plan deals directly with the particulars of the individual task. This will provide you with a clear understanding of what was completed, and still needs to be closed out.

j.) Sales (internal & external), Marketing and Communication

I recommend that you (fleet manager, stakeholder, director) become the greatest advocate for the transition program. Advocate for the change, fuel being used, cost and emission savings and market your new program transition to all stakeholders in the organization including the elected officials. It is especially important when you expose your staff to the new alternative fuel. They will become your greatest ally and the best advocates for the change. You need to sell the concept, articulate all the benefits and then train them.

- k.) Supplier / vendor resources, manufacturers (list them all out and retain for reference).

Maintain a database of all the companies you'll do business with. This is your "go-to" resource for readily available assistance should you need materials, parts, training or services. Different from a normal resource binder, this should only include the information for those vendors, suppliers and utilities you utilized within the scope of our alternative fuels project. Maintain and update these "point of contacts."

3. Due Diligence - Assemble Your Goals & Objectives

- a.) Transition to alternative fuels (away from traditional fossil fuels).

Once you have selected the fuel you'll be using, perform a goals and objectives analysis for the diligent transition including the tools you will need at all levels of the project.

- b.) Timeframes for implementation.

Identify the timeframes for implementation for the transition and various components necessary to achieve your milestones. Know unequivocally, the requirements of the program (users, resources, manufacturers, utilities, and fuel suppliers). Realistic timeframes are paramount to project success. Be flexible.

It is very important to not skip vital steps in the process, doing so will cause you considerable time and in some cases, funding to correct inadvertent mistakes.

- c.) Financial resources required and realized.

Now that you have completed your plans and estimated budget, it's time to achieve the financial goals for the project. Develop the timelines for funding, and the timeframes for receipt of the funds. If you have identified grant money, be sure to review dates of receipts and invoices. Most grants (once you achieved approval) work on a reimbursement basis. This means you will not receive the actual grant monies until after you already budgeted and expended the funds.

This is important to remember, and also to explain to your vendors and other stakeholders, City Manager, etc. It is desirable to use capital, or discretionary funding to initially pay for your project. Local budgeted money for operations can also be utilized providing you budgeted for the transition at the beginning of the fiscal year. During construction should you decide to build a fueling station, it might be more economical for you to “pay as you go” when each project section is completed, thereby staging the transition (and the costs).

Of course it’s always best to perform the entire project one-time. Discuss financial strategies at the front end of your transition to avoid any surprises.

d.) Regulatory requirements.

It is very important to fully embrace the air quality regulations and reach out to your local and state regulatory agencies. These entities will respect you for being proactive and not reactionary. It’s always best to be collaborative and cooperative. Embrace the challenges of alternative fuels, emissions reductions and reduced petroleum use. Phase in your approach. Discuss your plans with these entities to ensure compliance, however, be proactive and communicate your goals and objectives.

Very few public (or private) entities are first to comply, demonstrating initiative and communicate to air quality management districts. Trust me when I say, this will win you much respect and far fewer controls by the agency. I remember requesting to be scheduled at a public hearing at our local Air Quality Management District, public board/council meeting. I had five minutes to articulate our goals and objectives, and to demonstrate how we were going to not only meet our air quality requisites, but exceed the requirements by several years. We received a standing ovation and praise by all in attendance. When you accelerate your statutory requirements, and “think out of the box”, being proactive, you will positively affect your program and all the stakeholders in the organization. This kind of political strength and recognition cannot be quantified.

- e.) Assemble the physical & political resources, maintain a current reference list.

Just like your reference list for vendors and suppliers, maintain a reference list of your political resources. Including elected officials, stakeholders, directors, etc.

This is a great document to maintain because when you achieve your milestones, through your goals and objectives, you want to reach out to this contact list and articulate your achievements. Political leaders enjoy receiving positive news, especially as it pertains to clean air and alternative fuels, whereby they can share it with colleagues.

4. The Utilities

- a.) Develop / schedule meetings and discuss plans.

As soon as possible, schedule project meetings with your utilities and develop a “Utilities Service Planning” (USP) agenda. This USP is very important. You must ascertain a clear understanding of the utility factors and requirements you will need for a successful project. The utilities need to understand the project and your plans. Don’t be overly concerned at first if you receive negative information, often times this is normal until you work the through the specifics with several experts. Don’t panic!!

If you are moving to natural gas, you’ll need to know and understand the available pressures, the location footprint (spacing) and electrical requirements. It is very important to engage your utilities as early as possible in the project. This is where you will hone in on your ability to create synergies. As soon as you have a project plan, and/or engineering information (especially if you plan to construct a natural gas or similar fueling station) meet with your utility companies. The utilities will provide you with necessary electrical load parameters and natural gas inlet pressure(s) plus the gas volumes available between pressure(s), for your planned operation. Do not underestimate the importance of this particular step.

b.) Review the potential site for applicability of a fueling station.

It is extremely important to review your proposed site for a fueling station. You need to ensure you have enough maneuverability, station foot-print spacing, and a close proximity to the necessary hard-path to the utilities.

Perform a site analysis with your fire and code departments as well, include the proposed station provider(s) and engineering team for good applicability of the location. Document all this information.

c.) Develop a cost strategy for pay-back. Review cost neutral solutions.

Presuming you have a solid project budget, you should conduct an evaluation to review a pay-back analysis model. Several factors should go into this equation such as:

- Total station costs (using operational funds) or,
- Total portion of use with capital funds (one time funding) or,
- Projected cost of the fuel or,
- Number of vehicles for initial use, and over the life cycle of the station

Once you can project a pay-back analysis to your superiors, and elected officials you will be in a great position to understand your costs.

I would not be overly concerned with a “quick as possible pay-back,” as just knowing this information will serve you well. Another opportunity to explore is a cost neutral solution. Several high quality energy companies have proposed design, construct, own and operate stations. This is a turn-key solution to your project. Using this scenario, be mindful of your total fuel cost, per-gallon. Use a formal contract to calculate your fuel costs and indicate the duration of the program. Be sure to include all preventative maintenance, overhaul and ensure a minimum downtime for your operation, such as a four (4) or twelve (12)-hour response time requirement. If budgets are difficult, or non-existent, this is a great opportunity.

d.) Review the footprint.

It is very important to re-review your total project footprint. You need to fully understand the safety distances for sensitive equipment, detection sensors (if required) and vehicle circulation from dispensers. For example, if you have site restrictions, you may decide to specify only curb-side fueling to avoid difficult site traffic and compromising safety conditions.

I recommend taking a very broad view of this. It's very important that you plan for future growth, and not just for here and now. If you need to expand in the future, you want to try and accommodate available spacing.

5. Identify Influences

a.) Political – Meet and discuss objectives.

To create relationships which will provide you with the greatest support, begin with your elected officials. Engage elected officials early on in your process (after your plans are completed) and discuss the highlights, benefits and great exposure that moving to alternative energy will do for your organization. City councils, and/or other political leaders will advocate for the technology and they will be extremely proud to support the endeavor.

Make sure political leaders see your vision and receive the political benefits. Political buy-in is greatly important and will elevate your vision to new heights. Always remember, performance must be accountable.

b.) Provide political, cost and environmental benefits.

Every political leader, elected official, city councils, etc., will need to be provided with the anticipated, effective cost savings (estimated savings to the company) year over year. This information is vital. A more conservative approach here is best to ensure a more realistic goal achievement. Include the estimated environmental impacts / benefits (as mentioned, it's important to know what your reduced carbon footprint will look like); this is crucial.

Inform your political leaders of pertinent information regarding the reduced use of traditional fossil fuels which equates to a real cost savings.

Quantify the savings and emissions reductions year over year. Make sure to include all other efforts you are doing, like an aggressive recycling program.

c.) Provide any statutory requirements as an impetus.

One of the primary reasons for moving away from traditional fuels is federal, state, county or city mandates.

Many air quality management districts have already, or soon will adopt aggressive policies to reduce the carbon footprint and through legislation, move you away from traditional fuels. As I mentioned elsewhere, embrace these rules and changes and be proactive about the inevitability of change. Your stance should catapult you out in front of the requirements, and you need to articulate this to your political leaders. The fact that you must change dynamics / paradigms is no reason not to be the effective change in your organization. Leadership starts with you, never look in the rear view mirror. You are the catalyst and you must communicate your position to your officials. Believe me when I say, if articulated correctly, your political leaders and others in the organization will embrace your proactivity as much or more than you do. Especially when they can articulate what the organization is doing “way out in front” of any mandated legislation.

d.) Craft an internal Marketing Plan.

If there is one important lesson to change, it's how you market it. I strongly suggest you craft an internal positive marketing plan and post this on your intranets, City websites and also in written for dissemination. You have to sell your vision. This elevates and promotes the necessary integrity to your transition (and goals).

How you project a permanent paradigm shift, culminated with new synergies, can create powerful and purposeful reallocations in resources rather than usual methods of changing. This is paramount in your ability to project positive results and moreover a successful change (transition) from the customary ways of conducting business. Sell your plan, market the positive results and embody the element of dynamic change. There will be the “naysayers” and negative influences; you have to rise above these and intently stay the course. Your greatest advocates for change will be your own staff as long as you provide them with the tools they need to become the experts, then empower them to effect the change.

Provide them with the positive accolades they will receive and the outstanding benefit to the organizational culture, today and well into the future. Providing your vision for change and having it be accepted, is the direct result of knowing your audience and giving them the resources and support they need to make it happen and become successful.

e.) Partner with the experts who can assist you

Creating effective synergies begin with relationships which can bring together the best talents and most collaborative partners necessary to develop your vision for dynamic change towards alternative fuels. It's very important to be an active listener and understand the advice of expert opinions. To fully comprehend this concept, I highly recommend initially taking that preverbal step back to review your goals, refresh your ability to openly accept new information (you will receive) and be poised in a good position to process the material. Ask questions!

I had to learn to become experienced in alternative fuels; it's not going to magically happen overnight, and that is okay. You will need to trust the information you'll receive and ensure the quality of the synergies you create. There are brilliant people around us, our job is to seek them out and emulate their positive experiences. This will make your project successful with the most concise recipe for a thriving accomplishment.

6. Develop Synergies

a.) Develop collaborations with OEM's, fuel supplier(s), drivers, utility companies, management and all stakeholders.

Successful synergies begin with professional partnerships which are collaborative, experienced and interrelated to the condition and opportunity for which they are created.

When moving to an alternative fuel, there are some common denominators which should be brought together within a presentation and the following participants:

- All primary stakeholders
- Equipment manufacturers
- Employees
- Equipment operators
- Customer departments
- Executive management

This is your opportunity to present your analysis, justifications and plan for the transition. When you communicate your plan for moving to alternative energy, it's very important that you become the duty expert, have all your facts assembled and be ready to discuss and provide comprehensive and informative reports. Discuss all of the many steps you underwent to come to the decision you have made. In other words, you have educated yourself and assembled a great team of experienced advocates. Explain the benefits and keep the meeting positive. Don't be afraid to communicate potential hurdles and challenges, but the benefits far out way any difficulties.

b.) Develop relationships with staff, superiors and customers.

As with any new endeavor, to be successful you need to solicit the support of your staff. Inform them and hold question and answer meetings as you are assembling your plan. Don't limit yourself to just your staff, reach out to all company employees to generate the greatest amount of interest.

Do this frequently. In concert, hold meetings with your key customers and superiors. Advise them of the technology, safety, and the seamless transition to them. Reaffirm your plan of action, provide them with a concise summary copy to keep them informed.

One of several elements I did, was to do hold vehicle demonstrations at my facility. This proved to be really important for your technicians and customers. We allowed them to drive the technologies we were transitioning to. This really helped to allay concerns about drivability and operational use.

c.) Craft and schedule regular Information meetings at all levels, become informative.

Continue to schedule regular progress report meetings to keep all parties informed of the transition progress. Articulate your positive results, and the challenges you may have discovered. The point of these meetings to communicate the progress. This is very important.

d.) Craft and schedule regular training meetings

Once your fueling station is operational, and perhaps you have equipment ordered, make absolutely sure to schedule a “grand opening” ceremony with all stakeholders and elected officials. Invite the local media and have the event video-taped.

It's very important prior to delivery to begin to train your staff. Different from the training and orientation meetings you have previously held, now is the time to conduct advanced technical training. This training does not happen once, but several times over the course of the next year and beyond.

Everyone on your staff should understand how the fueling station operates (if you are using natural gas or others), and how to perform safe and reliable preventative maintenance and repairs to the advanced technology equipment.

As with any maintenance program, strictly enforce safety. Do you have a Fleet Safety Plan? If you do, be sure to amend the plan to include the advanced technologies you are using.

e.) Build teams, support networks and business units

The importance of building relationships with your peers, suppliers and creating networks is invaluable. The network of professional contemporaries will act as your sounding board, discussing problem trajectories, and a solution oriented collaborative think tank.

Creating separate business units to work with your advanced technology plan maintains accountability. This is important and moreover provides you with a clear set of solid parameters.

f.) Develop a comprehensive list of reliable industry contacts

Create a vendor and supplier resource portfolio. This is an important manual to retain and to also maintain. Every supplier, manufacturer (including part numbers and diagrams), and vendor contacts should be alphabetized into a one source binder for your quick reference. Beyond the warranty periods for installed equipment, you will need quick action when something fails. This type of reference manual will save you considerable time and effort. Make additional copies for your key staff as well.

g.) Become the Duty-Expert.

Becoming the duty expert means you have taken a serious vested interest in all facets of your synergies and the technologies you employed. This is very important, as you will be called upon to respond to questions, meet with architects and engineers and become a vital, integral component of the operation and the industry at large.

You also need to embrace the technology you have transitioned to. No looking back now, only forward. We have all heard the cliché, “Walk the Walk,” Talk the Talk,” this is all so true. Your posture should always be strong and steady as it relates to the choices you made. There will be other possible alternative energies available, and competing alternate energy companies will approach you, but you have decided on the “best overall solution” for your particular entity.

Remember to stay the course. You will be called by fuel suppliers, other cities, vehicle manufacturers, private companies and interested parties who have yet to embark on an alternative fuel operation. Face these opportunities with integrity and humbleness.

Realize there is no such element as “one size fits all” as it relates to alternative energy, and there is no “silver bullet.” However, if you did your research properly, looked at the big picture and used a very board stroke, you will know undeniably, you made the correct decisions.

h.) Education.

Education will be a key element to your success. Attend seminars which will broaden your perspective on alternative fuels. Continue to educate yourself on the fuel choice you made. If it is natural gas, there are considerable valuable resources and educational associations that will keep you abreast of changing technologies, availability of the fuel, and teach you how to calculate your fuel costs properly among other fundamentals. Therms into gallons is very specific, and you must unequivocally and inherently know this information. The educational information will allow you to maintain a competitive edge over others, and provide you with a great support network.

I am convinced that technology is a lifelong educational challenge. Staying on top of your game will provide you with the best opportunities to see the future, and also to assist others. It will also prevent you from be burdened with inaccurate facts, and outlandish claims of cleaner, faster, better, cheaper, easier, etc.

Additional Objectives

1. Important to stay the course
2. Be flexible and listen attentively (occasional problems will surface)
3. Learn from mistakes and move forward
4. Communication is the key
5. Create technology partnerships with your OEM's
6. Communicate to industry peers
7. Perform a Peer Review of various fleet sites
8. Document all activities of construction

Conclusion

After we performed a fuels analysis, looking at liquefied natural gas, methanol, ethanol, propane and hythane blends, we elected to move from standard “wet” fossil fuels into natural gas, or Compressed Natural Gas (CNG). We began our alternative fuels program endeavor in 1997 with the introduction of twenty heavy-duty public transit buses. Over the years, we have worked with several equipment manufacturers to assist them in bringing to the marketplace the first of certain model vehicles operating on CNG when they stated they could not construct such a vehicle. Now in 2013, 85% of all our heavy-duty and medium-duty vehicles, along with about 20% of our light-duty vehicles operate on dedicate CNG. We never looked back!

Many entities operate more than one alternative fuel, I have found this to be somewhat ineffective in the big picture. Using an alternative fuel requires a total commitment to do it correctly (becoming the duty expert). A commitment of funding, staff time, training, parts, education and operations. It is a complete effort to become the best you can be. Operating several alternative fuels or a combination of so called “boutique” fuels, can create inefficiencies in your operations. Different handling characteristics, training, operations, parts and even fuel delivery, etc. We did not want to potentially be “held hostage” to a fuel supplier trucking in our alternative fuel. Many elements can affect that delivery.

Our use of alternative fuels has brought tremendous accolades of achievement to our division and my staff. We have been visited by many foreign country representatives who want to learn about CNG use, as well as a considerable number of domestic fleets. Our program has brought us national recognition and creates a positive image for our operation. We have had our share of challenges along the way, however, as I mentioned, staying focus on the results you want, means staying the course.

It is my sincere hope that you find this document useful information as it has all of the elements (a good recipe) that I have learned in my many years of operating alternative fuels, and the steps you should follow when you intend on affecting an organizational paradigm shift and thereby creating and developing new synergies.

I have a statement posted in my office, and I read this everyday:

“There are no secrets to success; don’t waste time looking for them.
Success is the result of perfection, hard work, learning from failure,
loyalty to those for whom you work, and persistence”

I wish I was the author, however, that honor belongs to General Collin Powell

End.