



fleets for the future

Guide to Financing
Alternative Fuel Vehicle
Procurement

Preface

Funded by the U.S. Department of Energy (U.S. DOE) Clean Cities Program, the Aggregated Alternative Technology Alliance, known as “Fleets for the Future” (F4F), seeks to achieve nationwide economies of scale for alternative fuel vehicles (AFVs) through aggregated procurement initiatives. F4F plans to accomplish these economies of scale through a coordinated strategy designed to increase knowledge, lower the transaction costs of procurement, achieve better pricing, and address potential challenges arising from large-scale procurement initiatives, thereby increasing the deployment of alternative fuel vehicles in public and private sector fleets. The F4F team is comprised of national and regional partners with extended networks and relationships that can increase and aggregate the demand for alternative fuels and advanced vehicles. The project includes a regional procurement initiative spearheaded by each of the team’s five participating regional councils, as well as a national procurement effort.

F4F will enable fleets to obtain vehicles that will both reduce emissions and operate at a low total cost of ownership. AFVs that use electricity, propane autogas, and natural gas all have desirable benefits, including less reliance on foreign petroleum, reduced fuel costs, reduced maintenance costs, and contributions to local air quality improvement. In order to achieve these savings, fleet managers must justify the higher upfront cost of investing in AFVs. By harnessing the power of cooperative procurement to reduce transaction costs and to obtain bulk pricing, F4F aims to reduce the upfront cost premium and make an even stronger case for investing in AFVs.

F4F does not detail purchase and use of ethanol, renewable diesel, or biodiesel, which are beneficial for many of the same reasons mentioned above. However, biofuels can be introduced into a fleet with little or no additional cost and require little or no additional technology upgrades to deploy. Hydrogen is not treated herein because the technology does not have a mature market and is not positioned for bulk purchasing.

In order to prepare stakeholders to successfully deploy AFVs in their fleets, the F4F team has compiled fleet management and procurement best practices specifically relevant to alternate fuels. These best practices build upon both the extensive information provided by the U.S. DOE and a number of recent successful case studies. The specific goal of these best practice guides is to educate procurement officers, fleet managers, and other interested stakeholders to plan for a large scale deployment of AFVs.

This document, *Guide to Financing Alternative Fuel Vehicle Procurement*, presents information common to the procurement of AFVs of any fuel type. The F4F companion documents include:

1. *Fleet Transition Planning for Alternative Fuel Vehicles*
2. *Electric Vehicle Procurement Best Practices*
3. *Gaseous Fuel Vehicle Procurement Best Practices*

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Introduction

This document lays out the common strategies available for public and private fleets attempting to finance an investment in alternative fuel vehicles. While not all options are available to all fleets, the intent is to educate fleet managers on the best practices and challenges associated with implementation of each strategy.

The Opportunity and the Challenge

Alternative fuel vehicles (AFVs) offer numerous benefits to fleets – financial, environmental, and operational. Depending on the fuel type and the region of the country, they often have much lower fuel costs than the vehicles they replace. AFVs also tend to reduce maintenance costs relative to their gasoline and diesel counterparts. However, the upfront capital cost of procuring new vehicles creates a challenge – many types of alternative fuel vehicles come with a cost premium in the upfront purchasing price, as well as the potential investment in additional fueling infrastructure as part of the deployment. Therefore, the job of a fleet manager who wishes to transition to alternative fuel vehicles relies on his or her ability to justify the upfront costs with the savings, environmental, and operational benefits that will accrue over the long term.

To make the economics work for AFVs, fleet managers face two related challenges: 1) performing the analysis that is required to justify the investment and 2) seeking approval for a financial strategy that will enable AFV procurement.

Barrier: Creating a Compelling Financial Case

An analysis of the types of alternative fuel vehicles to consider is an important step to building a strong case for adopting new, more advanced, efficient technologies. The analysis may be time consuming when first deployed and is oftentimes beyond the traditional job scope of a fleet manager. Ultimately, the data collected can be extremely useful in many aspects of fleet management. The financial analysis calculations rely on a wide range of assumptions, both practical and financial, and should include an assessment of the state of existing infrastructure and potential needs for infrastructure enhancements. The communication of the results of such analysis should be done strategically to assure stakeholders that the deployment is a wise investment.

Barrier: Financing the Initiative

To justify the upfront cost premium for private consumers, the federal government has historically offered tax credits to reduce the premium (i.e. for electric vehicles,¹ fueling infrastructure,² or fuels³). Some state governments have relied on their own rebates and tax credits, as well. Tax credits have been an effective way of encouraging private sector adoption of electric vehicles, in particular. However, tax credits are often unavailable to public fleets because they do not have federal tax obligations, unless the dealership is able to pass through some or all of a tax credit it receives for the transaction. This makes the upfront cost barrier particularly high for public fleets relative to their counterparts in the private sector. For some fleets, there may be financial assistance in the way of grants for AFV deployments. In most cases the best way to identify these opportunities is through your local Clean Cities Coalition.⁴

¹ Up until 2010, there was also a Qualified Alternative Fuel Motor Vehicle (QAFMV) Tax Credit that applied to vehicles powered by natural gas, liquefied petroleum gas, hydrogen, or fuel containing at least 85% methanol. However, no federal tax credits currently exist for alternative fuel vehicles except the [Qualified Plug-In Electric Drive Motor Vehicle Tax Credit](#).

² The [Alternative Fuel Infrastructure Tax Credit](#) runs through 12/31/2016 unless it is extended again.

³ The [Alternative Fuel Excise Tax Credit](#) runs through 12/31/2016 unless it is extended again.

⁴ <https://cleancities.energy.gov/>

In many settings, this challenge is further compounded by a classic organizational barrier to investment in lower cost technologies – the separation of the organization’s operating and capital budgets. As a result, fleets often do not procure the vehicle types that will lead to the lowest total cost of ownership and highest net present value to the fleet. To address this barrier, a suite of strategies has been developed and implemented in the energy efficiency and transportation fields. These include competitive RFPs, cooperative procurement for bulk pricing, leases, third party financing, revolving loan funds, and bundling procurement of fueling infrastructure, fuels, and/or AFVs.

While several of these strategies are widely applied for conventional gasoline and diesel vehicles in traditional procurement processes (e.g. cooperative procurement, various types of leases), they are equally applicable to AFVs. However, a wider set of solutions is needed for AFVs due to the challenges discussed above. This document will discuss each of these strategies with a focus on how they should be applied. A helpful resource that can provide more detail on the financial options, as well as barriers to AFVs and the potential to borrow innovations and tools from the private sector is provided by the National Association of State Energy Officers (NASEO) and the U.S. DOE Clean Cities program.⁵ Unlike NASEO’s broad exploration of these topics, this report contributes by focusing the discussion on best practices for fleet managers and vehicle bid aggregators and the situations in which each solution may or may not be appropriate.

Solutions

There are three general usage models that can be used depending on how the fleets source their vehicles: 1) upfront purchase to own the vehicles, 2) purchase of vehicles through financing, and/or 3) lease vehicles (whether or not the fleet intends to own the vehicle at the end). Each of these usage models comes with different challenges and strategies for making the procurement of the vehicles work within the organization’s financing and accounting system.

Possible solutions to the barriers listed above are summarized in Table 1, which outlines the strategies that have been used and/or proposed to address the barriers, along with applicable usage models. The strategies listed range from commonly used traditional strategies to strategies with good theoretical foundations and more limited track records. This guide focuses on the financing strategies that are within the power of a fleet or vehicle bid aggregator to employ. It assumes the reader is familiar with the applicable financial resources that may serve to reduce the upfront cost premium, such as Congestion Mitigation/Air Quality (CMAQ) funds, other grants, rebates, and tax incentives. For those readers not familiar with such resources at the federal and state levels and how they are applied, a useful compilation can be found on the [Alternative Fuels Data Center website](#). Unfortunately, not all fleets can take advantage of many of these financial resources, and therefore upfront cost premiums persist, requiring the adoption of financing strategies.

⁵ http://www.naseo.org/data/sites/1/documents/publications/afv_fueling_infrastructure_deployment_barriers.pdf

Table 1. Summary of Strategies to Confront Barriers

Strategy	Concept	Application	Barriers Addressed			
			Vehicle Cost Premium	Infrastructure Upfront Cost Premium	Inflexible Funds (Cap Ex/Op Ex)	Inability to Monetize Tax Credits
Competitive Request for Proposals (RFPs)	Obtain competitive pricing by bid	Own, finance, or lease	X	X		
Cooperative procurement	Joint procurement efforts with peer agency, saving time and enabling bulk discounts	Own, finance, or lease	X	X		
Leasing	Spread the cost of vehicle or infrastructure procurement over time; test new technology without ownership	Lease	X	X	X	X
Third Party Financing, Energy Service Companies (ESCOs)	Avoid the need to pay for vehicles through the capital budget	Finance or lease	X	X	X	X
Green or Revolving Loan Funds	Make money available to the capital budget by repaying out of the operating budget over the term of the loan	Own			X	
Bundling vehicle investments for overall acceptable payback	Justify the purchase of slow payback vehicles by combining with faster payback vehicles to show acceptable payback	Own, finance, or lease			X	
Financing fueling equipment through fuel contract	Procure infrastructure without needing to spend extra money upfront	Finance or lease		X		
Bundling infrastructure and vehicle RFPs	Obtain full package solutions from bidders to simplify process for the RFP issuer and potentially unlock efficiencies	Own, finance, or lease	X	X		

The following sections will describe each of the above strategies in more depth and provide best practice suggestions for each strategy.

Competitive RFPs for Outright Vehicle Purchase (Traditional Fleet Procurement)

Public organizations most often acquire vehicles through an outright purchase and thereafter assume responsibility for the fueling and maintenance of those vehicles throughout their useful life. While a variety of funding mechanisms (e.g. annual appropriations, enterprise funds, etc.) can be used to establish a pool of funding for these acquisitions, a common theme exists: there are limited funds available for the acquisition of vehicles each fiscal year. In practice, most organizations cannot afford to replace all of the fleet vehicles they would like to in a given year. This fact necessitates a prioritization of vehicle replacements and a limit on the number of vehicles that can be acquired.

Under this model, public organizations will most commonly employ competitive selection process, often issuing Requests for Proposal (RFP) to solicit best pricing contracts. While this can help ensure a properly competitive process and adequate pricing, the labor costs to both the solicitor and vendor can be significant, potentially outweighing the discounts achieved through the solicitation process.

Another challenge is the organizational separation of fleet management and the procurement processes, which may be run by stakeholders with different overall objectives. While the fleet management staff is most concerned with their ability to provide vehicles that enable efficient operations, the procurement staff is concerned that financial checks and balances are in place to ensure a fair and fiscally responsible procurement process. These two agendas can sometimes be at odds with one another, but can also be aligned with integration efforts.

Applicability: While most often applied in situations in which the fleet intends to own the vehicles by outright purchase, competitive RFPs can apply equally well when the fleet is financing the procurement through bonds, loans, or internal financing mechanisms such as green or revolving loan funds, enterprise funds, or other mechanisms. Competitive RFPs are also issued for leasing solutions, which is discussed in more depth in the section on leasing.

Table 2. Competitive RFPs

Best Practices	
<ul style="list-style-type: none"> Plan for preventative maintenance in order to maximize residual value of fleet assets at their end of life. Write RFPs that can solicit the widest range of bidders and the most comparable and competitive pricing. Require staff training and local vehicle service capabilities. Frame RFP around solutions to be achieved rather than overly restrictive specifications, relying on bidders to come up with the most cost-effective way to meet fleet needs. Request respondents to pass through as purchase discounts some or all of any applicable tax credits they may claim upon a successful sales transaction. 	
Benefits	Drawbacks
<ul style="list-style-type: none"> Full ownership and control over fleet assets, maintenance, and fuel. Known and accepted bid process has served many fleets well. Well-documented discounts, typically 10-20% off MSRP. 	<ul style="list-style-type: none"> Limited resources to acquire all of the necessary vehicles in a given year. May not include a mechanism to access tax credits. High labor costs to implement competitive process.

Cooperative Purchasing Using Competitive RFPs

Cooperative purchasing is a competitive selection process that leverages the buying power of numerous government or private sector organizations.⁶ This can often result in lower overall purchase prices or lease payments.⁷ As an alternative to developing fleet procurement specifications that are unique to each participating entity, a consortium of public or private sector organizations will purchase vehicles from the fleet procurement schedules negotiated by a formal cooperative process sponsored by a lead entity. In public sector cooperative procurement that entity can be 1) a local agency, 2) the state in which the participating entities are located, or 3) a regional or national organization. Cooperative procurement enables inter-governmental contracting authority at the local level, resulting in more efficient procurement processes. All political subdivisions and state agencies in a state can enter these contracts.⁸ For instance, cities can buy from county contracts, counties can buy from state contracts, and states can buy from federal contracts. However, regulation prevents government cooperative purchasing from benefiting private entities, and most cooperative purchasing entities are by and/or for government.

A common cooperative purchasing practice is for local government entities to purchase from the region or state's bid in which they are located; 40 states currently allow this. While administrative fees may apply, pricing on state bids is competitive and the economies of scale that they offer make this one of the best purchasing options for local governments. A few large states (California, Texas, and Ohio) even have multiple award schedules and expansive cooperatives that function very similarly to the U.S. General Services Administration (GSA).⁹

“Piggybacking” on others’ bids is another common benefit of cooperative purchasing. Governmental entities will often add language to their bid solicitations specifically enabling other governmental agencies to participate. With the approval of the winning vendor, specific contract language enabling piggybacking may not be necessary. This strategy can improve an organization’s flexibility in choosing vehicles, while also potentially lowering administrative efforts and shortening the purchasing timeline.

Finally, there are a number of third party cooperatives in which nonprofits and other non-governmental agencies establish a co-op. These organizations generally have higher administrative fees, but function very similarly to purchases from a region or state bid.¹⁰ NASPO ValuePoint and U.S. Communities are examples of such nonprofit entities that were created by public sector consortiums.

Applicability: While many regional or state bid lists provide direct ownership options, local fleets can finance their procurements through bonds, loans, or internal financing mechanisms. Cooperative procurement can also result in negotiated leasing schedules, such as the GSA’s Schedule 751.

⁶ <http://www.government-fleet.com/article/story/2013/01/fleet-spend-the-expansion-of-fleet-procurement-options.aspx>

⁷ Bulk procurement savings rely on the efficiencies that arise from economies of scale in production and distribution of products. For many types of AFVs, the main benefit is in labor cost efficiency from filling multiple vehicle orders for the same purchaser at the same time. Additional efficiencies arise from communication and cooperative planning for fueling infrastructure. If fleet managers are able to discuss their plans with each other, they may find opportunities to aggregate enough fuel demand to warrant refueling infrastructure at a scale that is more cost-effective to provide.

⁸ <http://www.government-fleet.com/article/story/2007/03/why-cooperative-procurement-can-pay-off-for-public-fleets.aspx>

⁹ There are also examples when public agencies can do procurement from the contracts of a cooperative bid set up in a neighboring state.

¹⁰ <http://www.mercury-assoc.com/resources/documents/fleet-purchasing-strategies-for-government-fleets.pdf>

Table 3. Cooperative Purchasing

Best Practices	
<ul style="list-style-type: none"> • Convene fleet stakeholders and educate them on the benefits of cooperative procurement processes and how to incorporate detailed specifications requirements. • Establish a regional work group to identify areas of common interest and compromise. • Establish robust communication channels between the entity aggregating the cooperative procurement and end user fleets. • Survey fleet managers and procurement officers to understand what vehicle types and financing mechanisms are most appealing and at what price points, and what opportunities/challenges to AFV deployment are most salient to them. 	
Benefits	Drawbacks
<ul style="list-style-type: none"> • Enables fleet to own the assets. • Reduces overall labor costs and timelines of bid solicitation, review, award. • Produces lower prices through higher demand. • Simplifies contracting processes – single agency issues contract. • Increased flexibility in vendor choices. 	<ul style="list-style-type: none"> • May not always produce the lowest prices. • Procurement staff may not be in favor of new process. • The options provided on the bid list may not meet local procurement requirements, such as procuring from small businesses or minority- and women-owned businesses. • Vehicles desired may not be available through cooperative purchasing organizations.

Commercial Leasing

Instead of purchasing vehicles, public sector fleets may procure vehicles through leases with commercial firms. While more common among private sector fleets for the tax advantages leasing can provide for high-mileage vehicles, commercial leasing is a viable option for government fleets in the right circumstances. Commercial leases can be tailored to the unique duty cycles of each fleet, which means that fleet management can pay for what they use, but not be penalized for high mileage¹¹ – this is common for retail leases. Commercial leasing does not require the large capital outlay of purchasing or even require a down payment. Some leases may also include additional fleet management services. Leasing companies are also often able to claim applicable tax credits, passing along savings to public sector customers.

There are a number of commercial leases¹² available to fleets, the most common options include:

Closed End: Also called a fixed price lease, these leases have a set timeframe with set monthly lease rates. They generally have a specific number of miles allowed in the contract and most will also include price adjustments when the actual number of miles driven differs from the contracted amount. The lessor assumes the risk of ownership, as well as depreciation and funding, while the lessee benefits from predictable expenses and other defined levels of service, which potentially includes other benefits like registration, maintenance, and tire replacement.

Open End: These leases have no fixed term for the lessee and provide some additional flexibility. Fleets get the ability to pay for the vehicle over a longer timeframe while also being able to add or remove vehicles from the fleet more easily. Often, this means that the lessee retains a higher level of risk of ownership, particularly in depreciation.

¹¹ <http://www.businessfleet.com/blog/auto-focus/story/2014/10/can-leasing-work-for-high-mileage-fleets.aspx>

¹² <http://www.automotive-fleet.com/encyclopedia/>

Operating and Capital Leases: These terms refer to differing ways of structuring leases based on the organization’s preferred accounting practices. An operating lease is akin to renting, where the vehicle is not treated as an asset belonging to the fleet. The lease payments are treated as an operating expense and the vehicle is not recorded as an asset on the lessee’s balance sheet. In an operating lease, the vehicle is typically turned into the lessor at the end of the lease term, often in exchange for a newer vehicle.

In a capital lease, the vehicle is treated as an asset and depreciated (as it would be if the vehicle was purchased outright) on the lessee’s balance sheet with associated liabilities. This is a good option for fleets that plan to keep vehicles longer than five years and who would also consider assuming ownership (for a pre-determined discount price) of the vehicle at the end of the lease.

Table 4. Commercial Leasing

Best Practices	
<ul style="list-style-type: none"> • Understand the accounting and tax credit implications of leasing options. • Include leasing decisions in your capital outlay and financing processes. • Centralize leasing management within fleet management – to keep leasing agreements in the hands of staff responsible for using the leased assets. • Develop a good understanding of each vehicle’s anticipated usage to align the lease terms with expected vehicle use (e.g. mileage per year). • Customize the lease term to align with anticipated replacement cycles, both the anticipated duration of using the vehicles and the time of year that is most logical for replacement. • Evaluate the rationale for current lease activity regularly. Is the mileage still appropriate for the lease terms? Is the financial situation that justified leasing the same? Train drivers on the lease terms and establish a thorough performance monitoring program – to make sure leasing is still financially viable for each vehicle. • Develop leasing policies and procedures for the fleet. Which vehicles and applications/duty cycles are the best match for leasing? For purchasing?¹³ 	
Benefits	Drawbacks
<ul style="list-style-type: none"> • Predictable expenses. • Tax advantages for the private sector. • Flexibility and easier transition to more advanced vehicles as technology improves. • Ability to pay for usage, not assets. • Full service leases include maintenance, relieving the lessee from many facility modification requirements. • Leasing companies are better able to amortize the cost of technician training, parts inventories, etc. • Leasing companies have experience and aggregated data concerning AFV maintenance costs, procedures, and residual values and thus are able to assess, calculate, and absorb risk. • Leasing companies are able to take advantage of federal and/or state tax credits for fuel stations and vehicles that are unavailable to tax exempt entities. 	<ul style="list-style-type: none"> • May not be suitable for low-mileage fleets. • Can complicate annual appropriations cycles since payments are spread out over multiple years. • The cost of borrowing for the third-party owner may be higher than the government could obtain by issuing its own bond. • Not appropriate for vehicles that require extensive upfits (e.g. police cruisers, public works equipment, work trucks, etc.)

¹³ Light duty vehicles with little customization and high mileage needs (e.g. sedans for inspectional services departments and other departments that send staff traveling most of the day) are often good matches for leases. On the other hand, vehicles that require extensive upfits (e.g. police cruisers, public works equipment, work trucks, etc.) may be good applications for direct purchases since upfront purchasing tends to correlate with longer replacement cycles and performing upfits more frequently than necessary adds additional costs.

Third Party Financing

It is possible for fleets to enter into agreements with private-sector firms to finance procurement of AFV's. Some third-party financing arrangements can be similar to various types of leases, depending on what entities are involved in the financing. The two common types of third-party financing are conventional debt financing and performance contracting, which may bundle fuel and fueling infrastructure with vehicle purchase.

Conventional Debt Financing

Private firms are able to provide financing to public-sector firms at favorable rates since the interest on that loan is tax-exempt to the lender. This can be an attractive option for government fleets to acquire more vehicles when funds are limited and provide for use of the vehicle at a deferred payment rate while ultimately achieving ownership of the vehicle.

While third-party financing can free up funds for other purposes at the beginning, it also requires the fleet to pay financing costs. However, when the time value of money is considered, third-party financing can be more attractive if the public sector entity can borrow money at rates below what it earns on its own investments.

Some experts contend that making purchases through third-party financing is more cost-effective than financing through bond issues. Third-party financing contracts are generally written so there are no early payment penalties and they contain a “non-appropriation” or “fiscal funding-out” clause. This clause provides that if the governmental entity is unable to appropriate funds to make the lease payments designated under the agreement, the agreement will terminate at the end of the current appropriation period. The equipment would then be returned to the third-party lender without penalty to the governmental entity.¹⁴

Performance Contracting and Transportation ESCOs

Performance contracting means guaranteed savings from the deployment of a more cost-effective technology. Commonly implemented by energy service companies (ESCOs), these agreements have a long history in the field of energy efficiency for commercial buildings. While the concept has yet to be taken up widely in the field of fleet management, it has significant potential to enable fleets to save money and obtain AFVs with a lower total cost of ownership (TCO). There have been a few notable recent movements towards the ESCO model of guaranteed savings to the transportation sector, including the transportation ESCO enabling act in Colorado in 2013¹⁵ and the Vermont Energy Investment Corporation's offer of a transportation ESCO service to fleets in 2015.¹⁶ According to NASEO, there have been at least three applications of the ESCO model to the deployment of CNG vehicles and/or fuel, including a contract that included a fuel savings guarantee between Johnson Controls and Rose Tree Media School District in Pennsylvania.¹⁷

Since most AFVs tend to have a lower cost per mile traveled, the fuel savings can be used to repay the loan made by the ESCO or its financier. Typically, the fleet would pay for the fuel and the debt service on the loan from the ESCO or its financier, and the monthly costs would be guaranteed not to exceed what the costs would have been for the fuel prior to the procurement of the AFVs.

The tools available to achieve savings through a transportation ESCO go beyond simply switching to AFVs, and can also include reducing total fleet miles traveled through optimization of schedules and routes, optimization of AFV usage, reducing the amount of reimbursed miles on personal vehicles by requiring employees to use efficient fleet vehicles instead, and many other strategies. While these practices arguably should be applied by fleets regardless of whether they enter performance contracts, a transportation ESCO

¹⁴ <http://www.oppaga.state.fl.us/reports/pdf/9684rpt.pdf>

¹⁵ <http://coloradocapitolwatch.com/bill/2/SB15-134/2015/0/1/>

¹⁶ <https://www.veic.org/media-room/news/2015/03/20/veic-launches-pilot-project-to-increase-transportation-efficiency-for-businesses>

¹⁷ <http://www.naseo.org/data/sites/1/documents/publications/Applying-the-Energy-Service-Company-Model.pdf>

should provide the technical expertise and the initiative to implement these practices, bundled into a performance contract. A similar option could be to contract out “full fleet management services” in which a third party would be responsible for providing vehicles, performing maintenance, and ensuring staff are appropriately trained, with the goal of meeting the fleet’s needs and operating efficiently at the lowest fleet-wide TCO.

Table 5. Third Party Financing

Best Practices	
Conventional Debt Financing	
<ul style="list-style-type: none"> • Make sure that the lender can take full advantage of the tax advantages that arise from lending to a public fleet, in order to be able to offer the lowest interest rate. • Include a “non-appropriation” option to enable the government entity to terminate lease payments if it fails to be able to appropriate funds, and return the vehicle to the lender without penalty. • Compare the loan interest rate to the fleet’s cost of capital. If the loan has a higher interest rate than the return the entity earns on its own investments, it is not wise to take the loan. 	
Performance Contracting¹⁸	
<ul style="list-style-type: none"> • Align the interests of the ESCO or other third party with the interests of the fleet. • Arrange for mutually agreeable measurement and verification (M&V) procedures for the contract, particularly in the case of performance guarantees. • If there is a performance guarantee, ensure that you feel confident in the third party’s ability to stay in business in the event of a spike in fuel prices. Have a contingency plan for what happens if the third party goes out of business. • Incorporate any necessary improvements in fleet refueling infrastructure, maintenance plans, and training plans into the overall agreement with the ESCO in order to ensure a successful initiative. 	
Benefits	Drawbacks
Conventional Debt Financing	Conventional Debt Financing
<ul style="list-style-type: none"> • For government lending, favorable rates due to tax exempt status of the interest for the lender. • Typically does not have early payment penalties. • For government lending, opportunity to terminate the agreement with the non-appropriation option. • Ability to defer payment and own more vehicles in the end. 	<ul style="list-style-type: none"> • Involves taking on debt. • Loan interest rate could be higher than rates available through bonds (for public fleets) or fleet’s cost of capital.
Performance Contracting	Performance Contracting
<ul style="list-style-type: none"> • Predictable expenses that do not exceed the projected baseline costs for running the vehicles. • After paying off the costs, the fleet will have lower operating expenses. • Transportation ESCOs may be able to help the fleet optimize other components of its operations beyond AFV procurement, resulting in additional savings. • ESCOs assess and absorb risk. • ESCOs are able to take advantage of federal and/or state tax credits for fuel stations and vehicles that are often unavailable to tax exempt entities. 	<ul style="list-style-type: none"> • Relatively untested in the transportation field. • Overall financial value for the fleet may be lower than if it implemented the initiatives in-house due to the ESCO’s need to earn a profit. Furthermore, for government fleets, the cost of borrowing for the third-party owner may be higher than the government entity could obtain by issuing its own bond. • There may not be much clarity about whether agencies can retain the savings generated by an energy saving project without reducing their utility or fuel budgets.¹⁹

¹⁸ While the best practices outlined here remain largely theoretical in the transportation realm with a few noted exceptions, these best practices have been widely proven in commercial building energy efficiency and widely applied by public agencies. NASEO’s report cited above provides more extensive discussion of transportation ESCO best practices.

¹⁹ <http://spotforcleanenergy.org/wp-content/uploads/2016/04/4396c0661e915509252e37395f4a82bf.pdf>

Green and Revolving Loan Funds

In some instances, municipalities have set up funds within their internal budgets from which capital can be loaned to support the procurement of alternatives that have a higher upfront cost, but a lower lifetime total TCO. Typically, the repayment of the loans replenishes the fund from which loans can be made and the repayment schedule is set such that the department taking out the loan would have a positive cash flow for the duration of the loan (the money saved on operations would always exceed the principal and interest payments on the loan). This arrangement has most commonly been deployed in the higher education sector, with at least 55 colleges, universities, and university medical centers managing their own Loan Funds (for solar and other “green” projects). However, it has also been implemented by a number of public-sector agencies and administrations, including Atlanta, Georgia and San Antonio, Texas.

The benefit of establishing a Revolving Loan Fund for a government fleet is that the return on investment (ROI) of efficiency projects could be much higher than the ROI of alternate ways that government could invest money, and often lower than the cost of a bond offering.

Revolving Loan Funds are an especially flexible mechanism because the policy for deploying their capital can be set by the organization that sets up the fund. Depending on the goals of the fund, they could be established to maximize the financial savings of efficiency measures, maximize emissions reductions, or achieve other policy goals. They can impose a minimum or maximum payback period for eligible projects, establish contextually appropriate repayment schedules, and even allow projects to be bundled together to provide an acceptable overall rate of return when one of the projects alone would not be justifiable financially.

Table 6. Revolving Loan Funds

Best Practices ²⁰	
<ul style="list-style-type: none"> • Properly capitalize the fund based on the anticipated need for investment in AFVs and other energy projects with financial paybacks – too large a fund may result in capital sitting idle, and too small may not accomplish the needs of the organization. • Implement a fair and participatory stakeholder process for distributing the financial resources. • Manage the fund in-house to alleviate the need for a financier, which reduces savings. • Bundle fast payback with slower payback projects for an acceptable overall rate of return, particularly if the goal of the fund is maximizing emissions reductions while achieving a financial return. 	
Benefits	Drawbacks
<ul style="list-style-type: none"> • Enables self-management of funds that can generate positive economic returns by implementing AFVs and other efficiency measures. • Emphasis on both emissions benefits and financial returns. • Engages stakeholders and builds expertise and knowledge on the savings associated with AFV deployment. • Ensures that funds will be continually available for worthy AFV deployments due to the fact that the savings are recycled back into the fund. 	<ul style="list-style-type: none"> • Need for organizational approval to set aside the funds. • Does not enable the public agency to claim tax credits. • Unlikely to be a model that an individual fleet would set up on its own, due to the benefits of scale and the benefit of having a large pipeline of candidate projects. However, this could be a very effective mechanism for a local government or administration to offer to its departments and fleets.

²⁰ A comprehensive guide to implementation of Green Loan Funds can be found here: http://greenbillion.org/wp-content/uploads/2013/01/GRF_Implementation_Guide.pdf

Bundling of Vehicles, Fuel, and/or Fueling Stations

Since the cost premium associated with AFVs can be more substantial if a fleet needs additional fueling infrastructure for efficient fleet operations, infrastructure needs should be included in TCO analysis. Engaging the same supplier to handle multiple components of the deployment may help reduce this cost.²¹ Furthermore, AFV deployment and AFV fueling infrastructure constitute a classic “chicken or the egg” conundrum. In order to justify building AFV fueling infrastructure, there must be a suitable number of customers to justify the upfront investment. And in order to buy a significant number of AFVs, fleets need to feel confident that the refueling infrastructure is sufficient for efficient fleet operations. Therefore, bundling vehicles and infrastructure in a procurement can be a good strategy, particularly if the agency will be consuming significant amounts of fuel. In these cases, an RFP issued by an agency or a cooperative bid process could include both. The results of this type of procurement are very similar to a performance contract, but without the cost premium of engaging a third party and requiring more internal management.

Another bundling opportunity combines the fueling infrastructure with the cost of fuel. For instance, in exchange for obtaining a multi-year fuel contract with the agency, fuel suppliers are often willing to provide the fueling infrastructure for the fleet, building the cost of construction, installation, and maintenance into the base fuel price.

Table 7. Bundled Procurements

Best Practices	
<ul style="list-style-type: none"> • Use bundled solutions in situations where the complexity of the deployment is beyond the technical capacity or time available of the procurement team. • Carefully evaluate the total cost of ownership of bundled proposals to ensure that a fair deal is being negotiated on the individual components. 	
Benefits	Drawbacks
<ul style="list-style-type: none"> • Simplifies the procurement process. • Enables efficiencies of vertical integration, for instance when the fuel provider also installs the refueling infrastructure. 	<ul style="list-style-type: none"> • May not allow for picking the best provider for each specific subcomponent of your bid process.

²¹ The vehicles themselves can also be considered as a bundled or unbundled procurement, particularly in the case of the gaseous fuels where an agency could put out an RFP for a full vehicle package or could award separate contracts to the dealer, the upfit system manufacturer, and the upfitter, as described in the gaseous fuels best practices document.

Best Practices Summary

The following tables highlight the best practices described in the above document.

Table 8. Best Practices Summary

Competitive RFP Best Practices
<ul style="list-style-type: none">• Plan for preventative maintenance in order to maximize residual value of fleet assets at their end of life.• Write RFPs that can solicit the widest range of bidders and the most comparable and competitive pricing.• Require staff training and local vehicle service capabilities.• Frame RFP around solutions to be achieved rather than overly restrictive specifications, relying on bidders to come up with the most cost-effective way to meet fleet needs.• Request respondents to pass through as purchase discounts some or all of any applicable tax credits they may claim upon a successful sales transaction.
Cooperative Purchasing Best Practices
<ul style="list-style-type: none">• Convene fleet stakeholders and educate them on the benefits of cooperative procurement processes and how to incorporate detailed specifications requirements.• Establish a regional working group to identify areas of common interest and compromise.• Establish robust communication channels between the entity aggregating the cooperative procurement and end user fleets.• Survey fleet managers and procurement officers to understand what vehicle types and financing mechanisms are most appealing and at what price points, and what opportunities/challenges to AFV deployment are most salient to them.
Commercial Leasing Best Practices
<ul style="list-style-type: none">• Understand the accounting and tax credit implications of leasing options.• Include leasing decisions in your capital outlay and financing processes.• Centralize leasing management within fleet management – to keep the leasing agreements in the hands of the staff responsible for using the leased assets.• Develop a good understanding of each vehicle’s anticipated usage to align the lease terms with expected vehicle utilization (e.g. mileage per year).• Customize the lease term to align with anticipated replacement cycles, both the anticipated duration of using the vehicles and the time of year that is most logical for replacement.• Evaluate the rationale for current lease activity regularly. Is the mileage still appropriate for the terms of the lease? Is the financial situation that justified leasing the same? Train drivers on the lease terms and establish a thorough performance monitoring program – to make sure leasing is still financially viable for each vehicle.• Develop leasing policies and procedures for the fleet. Which vehicles and applications/duty cycles are the best match for leasing? For purchasing?

Third Party Financing Best Practices

Conventional Debt Financing

- Make sure that the lender can take full advantage of the tax advantages that arise from lending to a public fleet, in order to be able to offer the lowest interest rate.
- Include a “non-appropriation” option to enable the government entity to terminate lease payments if it fails to be able to appropriate funds, and return the vehicle to the lender without penalty.
- Compare the loan interest rate to the fleet’s cost of capital. If the loan has a higher interest rate than the return the entity earns on its own investments, it is not wise to take the loan.

Performance Contracting

- Align the interests of the ESCO or other third party with the interests of the fleet.
- Arrange for mutually agreeable measurement and verification (M&V) procedures for the contract, particularly in the case of performance guarantees.
- If there is a performance guarantee, ensure that you feel confident in the third party’s ability to stay in business in the event of a spike in fuel prices. Have a contingency plan for what happens if the third party goes out of business.
- Incorporate any necessary improvements in fleet refueling infrastructure, maintenance plans, and training plans into the overall agreement with the ESCO in order to ensure a successful initiative.

Revolving Loan Fund Best Practices

- Properly capitalize the fund based on the anticipated need for investment in AFVs and other energy projects with financial paybacks – too large a fund may result in capital sitting idle, and too small may not accomplish the needs of the organization.
- Implement a fair and participatory stakeholder process for distributing the financial resources.
- Manage the fund in-house to alleviate the need for a financier, which reduces savings.
- Bundle fast payback with slower payback projects for an acceptable overall rate of return, particularly if the goal of the fund is maximizing emissions reductions while achieving a financial return.

Bundled Procurement Best Practices

- Use bundled solutions in situations where the complexity of the deployment is beyond the technical capacity or time available of the procurement team.
- Carefully evaluate the total cost of ownership of bundled proposals to ensure that a fair deal is being negotiated on the individual components.

