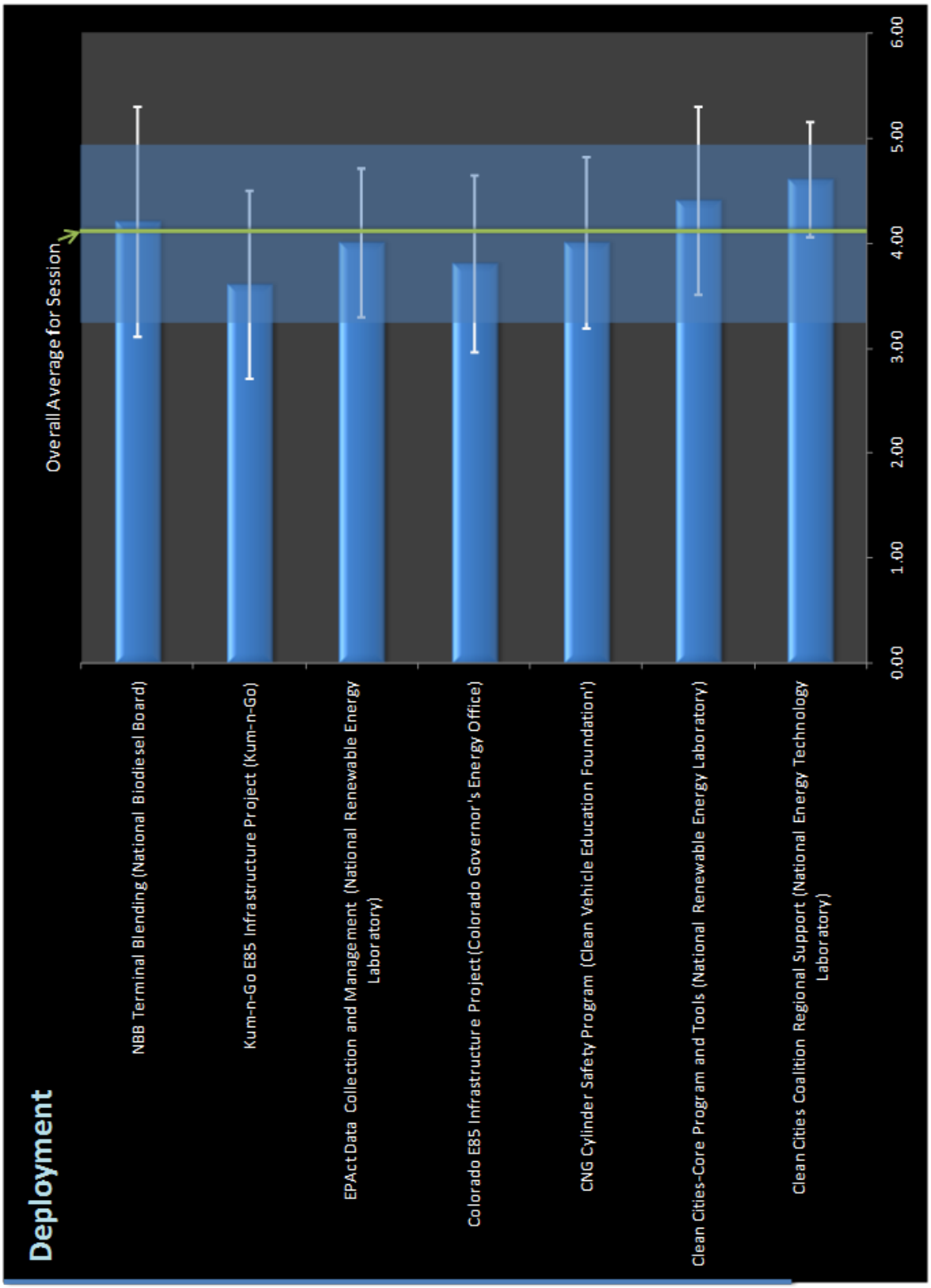
15. Deployment

Introduction

The VT deployment activity includes the Clean Cities and EPAct work to encourage the use of alternative fuel and advanced transportation vehicles. Clean Cities strives to advance the nation's economic, environmental, and energy security by supporting local decisions to adopt practices that contribute to the reduction of petroleum consumption. Clean Cities has a network of approximately 90 volunteer coalitions, which develop public/private partnerships to promote alternative fuels and advanced vehicles, fuel blends, fuel economy, hybrid vehicles, and idle reduction. The Energy Policy Act of 1992 (EPAct) was passed by Congress to reduce our nation's dependence on imported petroleum by requiring certain fleets to acquire alternative fuel vehicles, which are capable of operating on nonpetroleum fuels. The U.S. Department of Energy administers the EPAct regulations through the Federal Fleet Requirements, State and Alternative Fuel Provider Rule, Private and Local Government Fleet Rule, and Alternative Fuel Designation Authority.

In this merit review activity, each reviewer was asked to respond to a series of six questions, involving multiple-choice responses, expository responses where text comments were requested, and one numeric score response. In the pages that follow, the reviewer responses to each question for each project will be summarized: the multiple choice and numeric score questions will be presented in pictorial form in eight graphs as the last page of each project, and the expository text responses will be summarized in paragraph form for each question. A table and graph presenting the average and standard deviation for each project relative to the overall average and standard deviation for this session is presented below.

Page	Project Title and Principal Investigator	Project Average Score	Project Score Standard Deviation
15-3	Clean Cities Coalition Regional Support (Kay Milewski, National Energy Technology Laboratory)	4.60	0.55
15-6	Clean Cities-Core Program and Tools (Paul Bergeron, National Renewable Energy Laboratory)	4.40	0.89
15-9	CNG Cylinder Safety Program (Hank Seiff, Clean Vehicle Education Foundation')	4.00	0.82
15-12	Colorado E85 Infrastructure Project (Stacey Simms, Colorado Governor's Energy Office)	3.80	0.84
15-15	EPAct Data Collection and Management (Paul Bergeron, National Renewable Energy Laboratory)	4.00	0.71
15-18	Kum-n-Go E85 Infrastructure Project (Ben Steely, Kum-n-Go)	3.60	0.89
15-21	NBB Terminal Blending (Jill Hamilton, National Biodiesel Board)	4.20	1.10
	Overall Session Average and Standard Deviation	**4.09**	**0.83**


Deployment
Overall Average for Session
0.00
1.00
2.00
3.00
4.00
5.00
6.00
NBB Terminal Blending (National Biodiesel Board)
Kum-n-Go E85 Infrastructure Project (Kum-n-Go)
EPAct Data Collection and Management (National Renewable Energy Laboratory)
Colorado E85 Infrastructure Project (Colorado Governor's Energy Office)
CNG Cylinder Safety Program (Clean Vehicle Education Foundation')
Clean Cities-Core Program and Tools (National Renewable Energy Laboratory)
Clean Cities Coalition Regional Support (National Energy Technology Laboratory)

Clean Cities Coalition Regional Support (Kay Milewski of National Energy Technology Laboratory)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
One person commented that the project provides the support and accountability necessary to ensure effective coalition activities, while another noted that it provides support for local coalitions. Similarly, one person noted that the project is part of the Clean Cities Program in VT, alternative fuels, and outreach through the local coalitions and coordinators. Another simply wrote that it always has and always will support petroleum displacement.

Another reviewer, in a lengthy response, provided comments on the success of the team. They build and strengthen coalitions, assist coordinators, provide technical assistance, and provide outreach. They serve as the project management of the regional support activities and coalition support contracts. There are six Clean Cities regions and Project Management Center representatives. The team members collect data on fuel use through a subcontract with RDS ($10K each) to incentivize coalitions to give the needed data to NETL. There are 80 contracts established out of a total of 85 coalitions, as well as contracts for regional and national meetings. Coalitions receiving funds must complete an annual survey and make sure that the data center website is up-to-date and given info on success stories. There were 82 annual surveys completed (an increase over 2005, which had 66), with improved data. Support contracts have increased response rates on the alternative fuel price report. There are already established contracts for 2008 ($12,500), with 75 contracts established to date. There is a revised reporting requirements checklist (100 percent response rate for Q1 Alt Fuel Price Report data). There were 16 projects awarded through a recent solicitation: for refueling infrastructure for E85 (13 projects), incremental cost for AFVs (1 project), and 2 idle reduction/training projects for school districts. They have had lots of partners in these efforts.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
The first reviewer indicated that there is regional diversity and solid metrics for tracking actions and successes, while another person felt that there was a good understanding of the technical and commercial challenges facing the program. One reviewer stated that the project was providing financial support and information and coordinating activities to share successes and the identification and resolution of barriers from various coalitions. Another person, similarly, noted that the project was issuing solicitations and assisting the coalitions in furthering their work.

Separately, one person stated that there were not enough funds in grants, and asked, what about grants for fuel providers in getting info? This reviewer stated that the fueling station locations were not up to date, and that fuel providers do not provide info to NREL.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
Results were generally positive in this section, with one reviewer stating that the project seems to be using resources effectively to support coalition activities. Another noted that the team has increased the reporting data from the Coalitions and is working to give the Coalitions the tools they need to further their goals. Another cited the fuel price reports and the good response rate, administration of

the coalition support contracts, and the 2006 grant awards. One other reviewer stated that the barriers are very large, but progress is being made and this is accelerating.

In contrast, one person stated that there was too much effort on biomass infrastructure projects, like E85, and not sufficient effort in incremental cost reduction grants.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.

The first reviewer wrote that there is continuous work needed to overcome the technology and infrastructure barriers; however, there are lots of regional and national barriers to overcome. The project's effective execution is only part of changing the marketplace significantly. One other person said that fuel efficiency and alternative fuels technologies are increasingly attractive in the marketplace.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

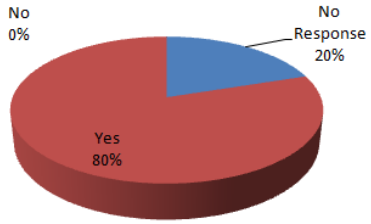
One person commented that, as stated previously, the project is succeeding in meeting its goals within current budgeting, but greater funding could grow the goals and successes. The other respondent stated that the project needs higher DOE budget requests and should expand into renewable natural gas.

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

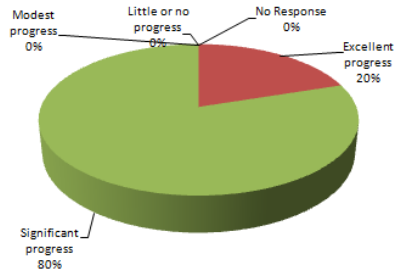
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: Clean Cities Coalition Regional Support

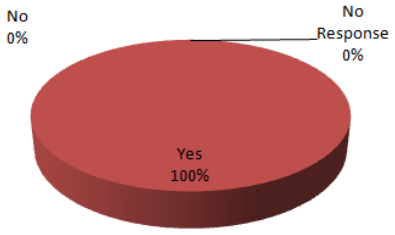
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



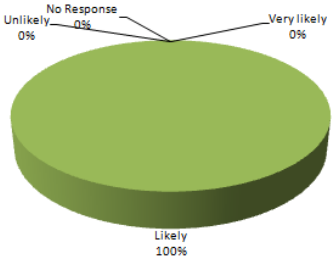
Question 3: Characterize the technical accomplishments and progress toward goals.



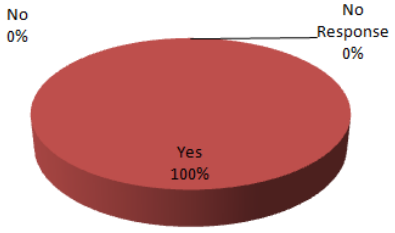
Question 2a: Are the goals of the project technically achievable?



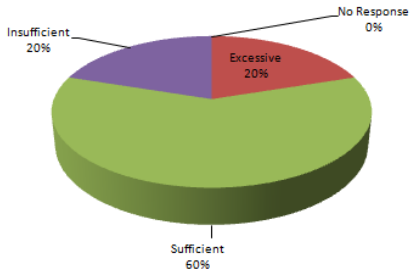
Question 4: How likely is the project team to move technologies into the marketplace?



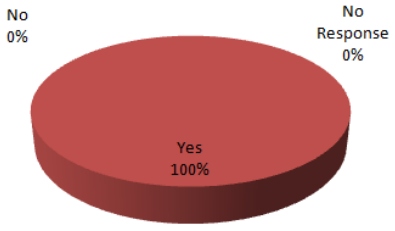
Question 2b: Have the technical barriers been identified and addressed?



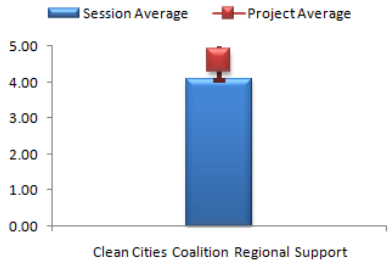
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



Clean Cities-Core Program and Tools (Paul Bergeron of National Renewable Energy Laboratory)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
Responses were generally positive in this section. One person wrote that the program's activities promote up- and down-stream adoption of vehicles and fuels and infrastructure. The program is sensitive to the necessity of diverse approaches. Another commented that it is the most effective Federal deployment program around. One other reviewer strongly emphasized that petroleum reduction is the overall program objective.

Another respondent noted that the program is trying to overcome barriers to deployment of AFVs, supporting infrastructure, and consumer education/awareness (AFDC) through activities such as Tiger Teams, Google map technologies (to improve station geocoding), and sharing info with Mapquest. The project is developing in-house GIS capability; engaging in partnerships with AAM; cosponsoring an E85 study; developing new fact sheets ("What's an FFV"), technology bulletins (E85 dispenser), and webcasts; and has initiated an RSS feed for AFDC (simple syndication). Regarding technical support, they are initiating a Verizon fleet analysis and have developed template presentations for coordinators.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
Responses were again generally positive here. One person wrote that the strategy emphasizes diversity and the dissemination of technical information, which are critical. It leverages national and regional partnerships. Another person commented that the deployment strategy leverages local stakeholder resources and local decision makers, while providing a wide range of national information resources. Similarly, one person wrote that AFDC, Tiger Teams, and in-house technical expertise provide effective strategies. Another stated that this education and increased awareness is needed.

One final response stated the program takes a comprehensive approach to addressing the barriers associated with advancing energy efficient and alternative-fueled vehicles and the supporting infrastructure. There is a clear understanding of future activities to undertake: increase coordination with DOE biomass program, develop new fleet tools, and update key materials.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
One person here cited the increases in petroleum displacement success and recent budget improvements, while another commented that the GGE/displacement measurement shows that the program is exceeding annual goals. One reviewer commented that Clean Cities and AFDC are widely recognized and respected sources of technological expertise that is unbiased, technically sound, and targeted to industry and stakeholder needs.

One person said that the work can always improve. Another stated that working with Mapquest (e.g., GIS E85 station candidate locator) and Google are good strategies to identify opportunities and reach the largest audience.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.

Results were generally positive. One person cited the increases in petroleum displacement success and recent budget improvements, while another referenced the activities noted in the presentation. One person commented that increasing funding is important. Increasing sophistication of information dissemination tools also plays a role. Another reviewer stated that NREL has historically been involved in the Clean Cities program and has developed a number of tools and resources to educate consumers, industry and other key stakeholders about the technologies that represent the Clean Cities portfolio.

To contrast, one person stated that there was too much emphasis on biomass.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

One reviewer commented that, while the program uses its funding effectively in advancing objectives, the program's success could be expanded in proportion to additional resources. Another person wrote that there is always room for improvement, but resources are being utilized effectively.

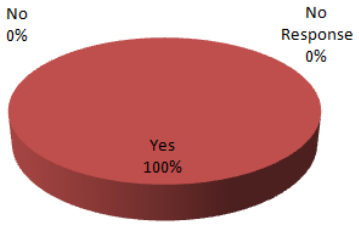
One final person commented that, regarding E85, the total energy costs for this fuel need to be reexamined more thoroughly. The reviewer asked what its effect is on full-cycle energy consumption, emissions, and food supply/prices.

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

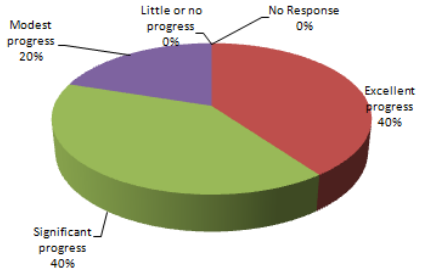
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: Clean Cities-Core Program and Tools

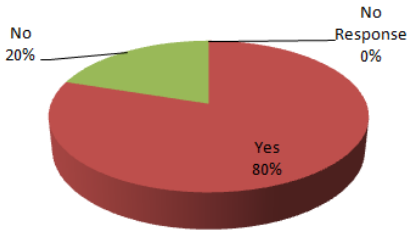
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



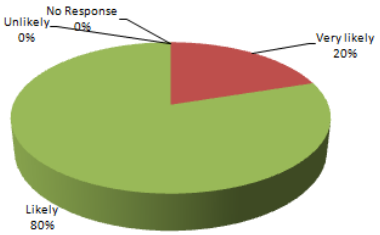
Question 3: Characterize the technical accomplishments and progress toward goals.



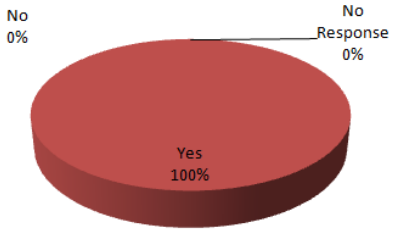
Question 2a: Are the goals of the project technically achievable?



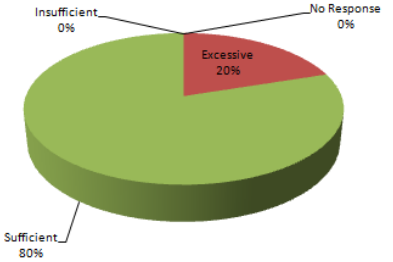
Question 4: How likely is the project team to move technologies into the marketplace?



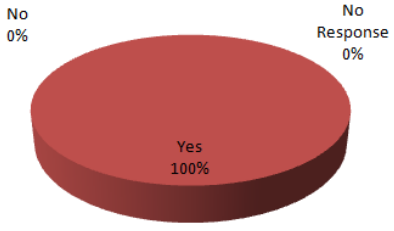
Question 2b: Have the technical barriers been identified and addressed?



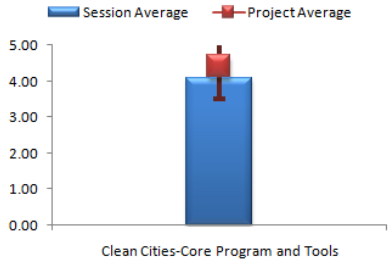
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



CNG Cylinder Safety Program (Hank Seiff of Clean Vehicle Education Foundation')

Reviewer Sample Size
This project had a total of 4 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
One reviewer stated that CNG is a proven and economical alternative fuel for many applications, while another similarly wrote that CNG use displaces petroleum, and ensuring safety is critical for potential customers. Another person stated that safety standards, as well as technical and consumer education, are necessary for the use and expansion of natural gas as an alternative fuel. Following this same idea, one reviewer began by stating that the goal of the project is to assure the safety of NGV fuel systems, and this project is important to keeping current and future NGVs on the roads. The person adds that there are 7 million NGVs worldwide. This project is effectively attempting to tell people who own NGVs to properly use and maintain the CNG fuel cylinders. In addition, the project is addressing related codes, making sure there is available training and inspection programs, assuring coordination among vehicle users, and providing information to potential hydrogen vehicle users/manufacturers.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
One reviewer stated that the project is using outreach effectively to respond to safety and education concerns, while another commented that they provide a good understanding of safety issues and how to improve the safety inspection process for cylinders. Another person added that proving and improving safety is critical to growing the CNG market opportunities. One final reviewer noted that, when one performs a Google search for "CNG gas cylinder safety," their website comes up first – attempting to increase public awareness/education. The program advertised 76 times, granted 224 scholarships for people who take training and become certified inspectors; certified inspectors have received criteria, had 3 inspectors certified through the program who then interface with test certifiers, also ensuring that accidents are investigated and information imparted widely. The program is also helping with the development of hydrogen codes and standards. They are assuring that the lessons learned from incidents are making their way into codes and standards.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
One reviewer commented that the project has met benchmarks for education and media presence, while another stated that this is important work that needs to be undertaken to ensure the safe and effective deployment of NGVs. One individual remarked on the wide range of outreach activities (e.g., scholarships, advertisements, work through the industry). One final respondent wrote that CNG is a proven alternative that enjoys increasing economic benefits as petroleum fuel prices grow faster than natural gas prices.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.
Responses were generally positive here. One person stated that, while the project is a small element of a larger scale NGV equation, it is an important piece of that puzzle. Also, the natural gas model has great lessons for the hydrogen effort. Another individual wrote that without this type of work, this reviewer doesn't believe the industry will see an increase in NGVs and/or hydrogen-fueled vehicles in the future.

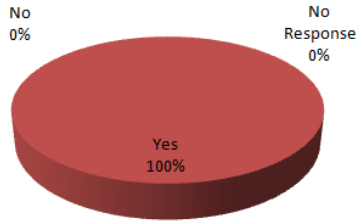
One reviewer commented on the program's work to increase recognition of safety and how to obtain cylinder certification/recertification, while one other person stated that addressing CNG safety concerns is an important activity, and this project seems to be effectively providing objective information in this regard.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?
One person commented that the project is in its third year and appears to be quite effective. Another reviewer simply stated that the resources are never enough.

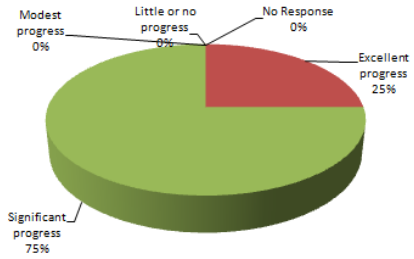
Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: CNG Cylinder Safety Program

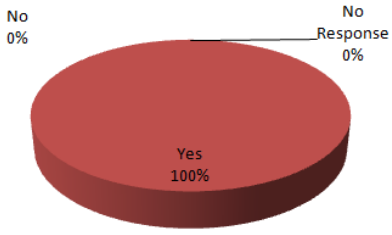
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



Question 3: Characterize the technical accomplishments and progress toward goals.

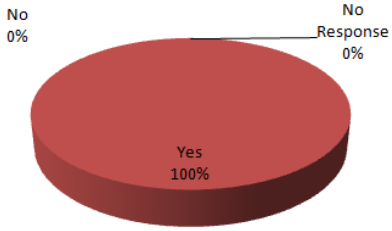


Question 2a: Are the goals of the project technically achievable?

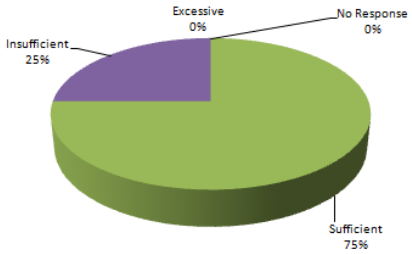


Question 4: How likely is the project team to move technologies into the marketplace?

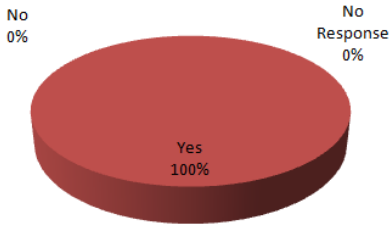
Question 2b: Have the technical barriers been identified and addressed?



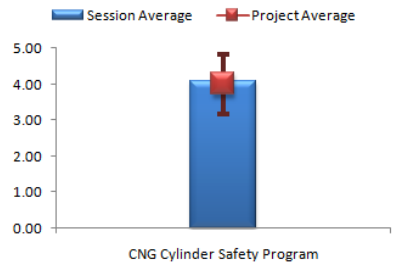
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



Colorado E85 Infrastructure Project (Stacey Simms of Colorado Governor's Energy Office)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
Responses were generally positive here, with one person stating that the project promotes deployment of alternative fuel as well as consumer and media understanding of E85. One reviewer noted on how the Coalition is increasing awareness, usage and infrastructure for E85 and biodiesel in Colorado. One other person stated that this is a direct promotion of biofuels, while another noted that both E85 and biodiesel displace petroleum.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
Responses were slightly mixed but generally positive in this section. One person wrote that the project has appropriately identified tangible (infrastructure) and intangible (media perceptions) barriers, along with the strategies to address them. Another commented that the deployment strategy is to overcome biofuels misconceptions, help consumers see value in biofuels, secure support from many different sectors so not perceived as a "government" program, and add technical and marketing expertise in addition to locating stations. The coalition has created press materials and secured the Governor's participation for grand openings. It has increased biofuel stations from 13 in 55 by the end of 2007. Major retailers have committed to offer E85 and biodiesel at more than 20 stations in the next 12-18 months. The coalition first worked with early adopters and is now branching out to other target audiences. These early adopters were used as a case study for why other entities should want to add biofuels to their mix. The coalition recognizes that the amount of E85 used is also related to the price of unleaded gas.

One reviewer cited the emphasis on public/private partnerships, support for additional biofuel sites, and the range of outreach activities. Another individual stated that providing technical and marketing support is key. Lastly, one reviewer felt that this was a well-developed coalition, but its goals were not well described, nor were activities for educating the public made clear. The reviewer was not sure if the barriers can be entirely overcome.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
Results were generally positive in this section, with one person commenting that the project has met and exceeded goals for deployment and has been successful in generating positive media attention. Another wrote that the coalition has brought together the key stakeholders necessary to further the use of E85 and biodiesel. Importantly, they recognize that price is a key factor as to the usage of the fuels. One reviewer commented that the goals have been met, and this is a proper reallocation of DOE funds. One person commented on the significant growth in station establishment, while another cited the success in reaching 55 biofuel stations in Colorado.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.
The first reviewer stated that the project has been successful in expanding fuel availability and has plans to expand on that success. The program has established a template for other coalitions to use to repeat the project's accomplishments. Another response stated that they have held a number of

outreach events and have worked with other key stakeholders to further the use of E85 and biodiesel in the state. One other person commented on the coordination of available resources.

Another reviewer stated that there have been good attempts to identify locations, but there are insufficient efforts to educate potential consumers and the program needs a proper redirection for station location.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

One person stated that the funding appears to have been sufficient to leverage other funders and diversify the stakeholders with an investment in project success. Another stated that there is always room for more resources. One reviewer commented on the $388,000 reimbursable DOE grant, with the total project valued at $1.09 million. This person added that GM has provided a lot of support (including outreach and promotion), and that they have exceeded their grant pledge.

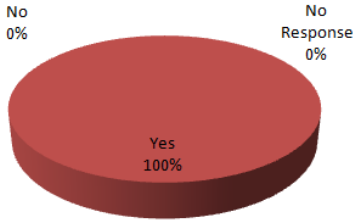
To contrast, one person stated that the DOE financial support was excessive, and that there was insufficient operator participation. They added that the funding matrix is good.

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

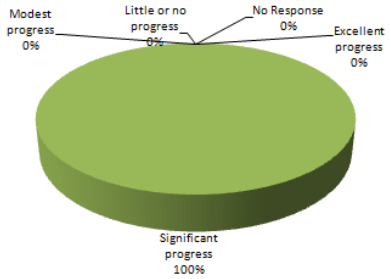
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: Colorado E85 Infrastructure Project

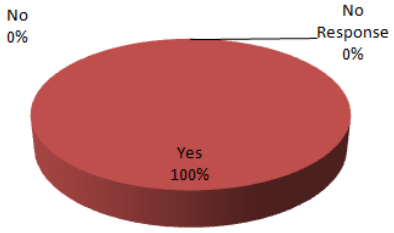
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



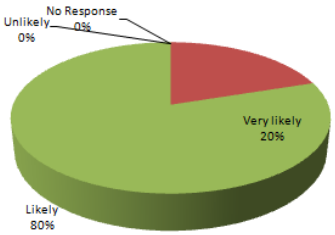
Question 3: Characterize the technical accomplishments and progress toward goals.



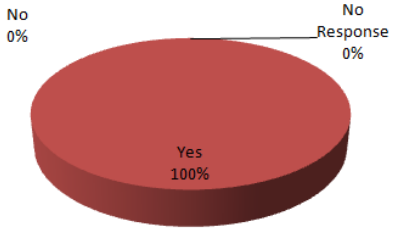
Question 2a: Are the goals of the project technically achievable?



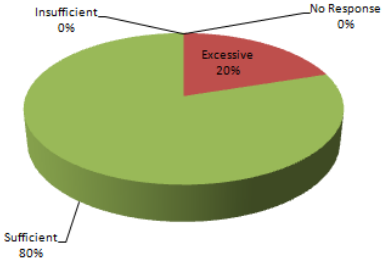
Question 4: How likely is the project team to move technologies into the marketplace?



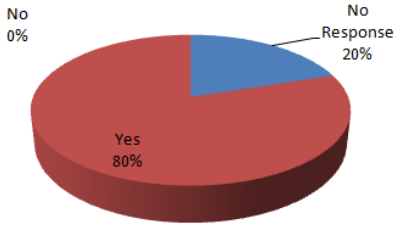
Question 2b: Have the technical barriers been identified and addressed?



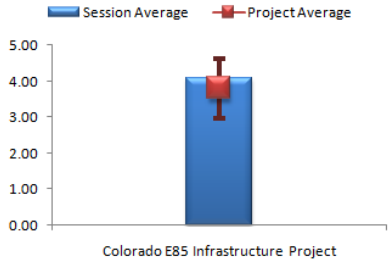
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



EPAct Data Collection and Management (Paul Bergeron of National Renewable Energy Laboratory)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
Responses were generally positive here. One reviewer stated that the data management and tracking are necessary to measure compliance and benefits of alternative fuel vehicles and alternative compliance. Another commented that the data collection and analysis is a critical component of management of petroleum reduction activities and determining progress towards the goals. One person stated that the goal conforms 100%, citing strong relevance and adding that it is of great use to Clean Cities Coordinators.

Another reviewer stated that NREL directly supports DOE's responsibility to implement the EPAct state and fuel provider regulations, and does this through data collection with a secure, active, and flexible data management system. Similarly, one person wrote that the program provides direct support to DOE's EPAct State and Local Provider Fleet Program. Another stated it provides tools and data to help fleets comply, since mandating AFVs has limitations and the alternative fuels compliance option allows for greater fleet flexibility.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
One reviewer commented that the secure database and the quality-checks on data entry are important safeguards, while another stated that data collection and analysis is a critical component to managing petroleum reduction activities and determining progress towards these goals. In a more detailed response, one person commented on how the program uses a secure Oracle database and allows fleets to have a flexible approach to meeting EPAct goals, which is beneficial so that greater reductions in gasoline usage are achieved. NREL has an online control room to access the database and has a control room that allows for tracking a variety of data (reviewing fleet compliance history, executing credit trades and approved exemptions). Three mechanisms are available for reporting: an online form, spreadsheet, and hard copy. An online alternative fuel compliance tool allows the fleets to determine if this approach would be more beneficial for their fleet. They can use eight different technologies to meet the plan. They can also report partially or fully at any point in the year, plus they have constant phone help available.

One reviewer stated that the program is reactive versus proactive in terms of who should or could comply. Another individual commented that the program needs to be accessible, predictable and transparent to users who are trying to comply. The effectiveness of NREL in establishing these metrics contributes to the near-100% compliance with the EPAct fleet requirements.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
The first reviewer commented that the current data collection and management system provides a good launch point to achieve future growth due to petroleum pricing growing faster than non-petroleum alternatives. The existence of substantial credit trading indicates the current success and growing opportunities for future strengthening. Another cited the program's 99% compliance rate

since 1997, adding that there have been more than 4,000 annual reports, 306 exemptions, and 238 trade transactions.

One reviewer noted the program's electronic options, noting the tools were good overall. There is slow progress in meeting Congressional studies (not AC), but added that there is great progress in data collection and in the available tools. One final reviewer stated that the program implementation for AFV's has been successful within the program's limits. Establishment of alternative compliance has the potential to address the barriers that the original program could not. The additional flexibility provided in EISA07, properly implemented and measured, has the potential to make the program even more effective in displacing petroleum and building advanced technology and alternative fuel options in the fleet.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.

One reviewer stated that fleets are a demonstrated market of first resort. Regulatory support for fleet purchases and advanced vehicle infrastructure investments not only ensures the direct investments but grows markets, builds economies of scale, and speeds deployment. Another person commented that the degree to which fleets are complying with the requirements both through the normal AFV purchase and the alternative compliance program, and added that they will be working to support EISA DOE rulemaking process to establish EISA credits and create procedures and modify the database accordingly. This program will be implemented in FY 2009 for use in 2010.

Another response stated that reconstituted goals and EPAct mandates on regulated fleets provide a reasonable degree of confidence. There are noted issues, including the actual use of biofuels in flex-fuel vehicles. More monitoring and verification in this area is needed. Another concern is credit trading and whether there is enough verification of the trades and enough database analysis. One person added to this, stating that data collection and management provides a needed component to complement the growing availability of alternative fuel and vehicles and growing acceptance of them in the market that will only accelerate as petroleum prices grow faster than alternative fuel prices.

One final respondent stated that he or she was unsure, and it may depend on who uses the models. This reviewer goes on to ask whether someone who is not required to meet the goals uses the models to calculate fuel reduction goals and financial rewards.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

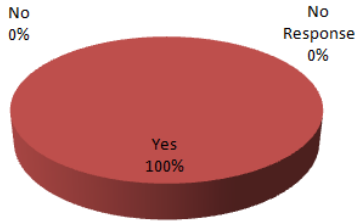
One person stated that new rulemakings and support for alternative compliance will require additional resources, while another reviewer stated that users should pay for the resources. One final respondent stated that there is always a need for additional resources to support the growing opportunities for petroleum reduction.

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

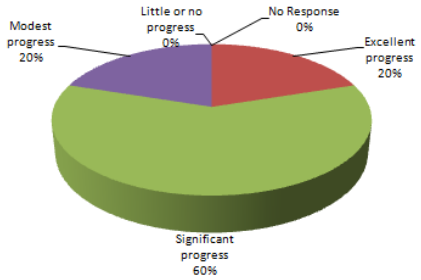
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: EPAct Data Collection and Management

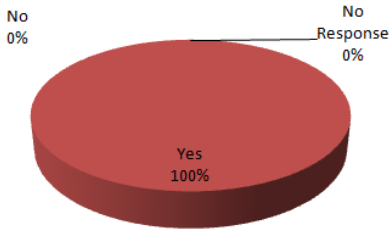
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



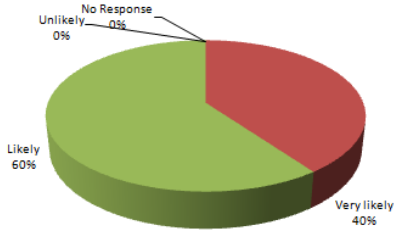
Question 3: Characterize the technical accomplishments and progress toward goals.



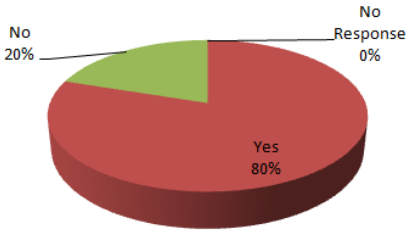
Question 2a: Are the goals of the project technically achievable?



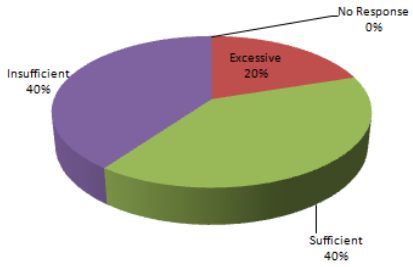
Question 4: How likely is the project team to move technologies into the marketplace?



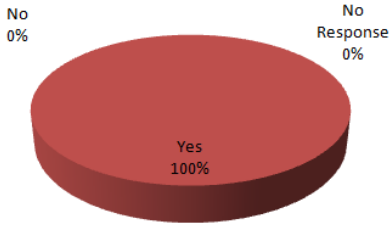
Question 2b: Have the technical barriers been identified and addressed?



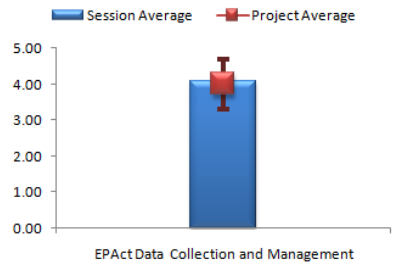
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



Kum-n-Go E85 Infrastructure Project (Ben Steely of Kum-n-Go)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
One person indicated that the project has been demonstrably successful in installing infrastructure and proliferating the alternative fuel option. Another wrote that E85 can significantly displace petroleum. In contrast, one reviewer suggested that DOE may want to revisit the total energy costs of E85, adding that the national media are reporting that total fuel production, delivery, and usage may exceed the oil displacement benefits.

One person commented that the program is enhancing US E85 infrastructure, increasing awareness of product, and increasing demand for product. This reviewer commented that, in 2006, there was infrastructure installed at three locations (new construction), while in 2007 there were five new locations and nine retrofits. The construction, capital, siting, product availability and equipment, infancy of demand, market saturation (South Dakota), misconceptions, and obtaining public sector fueling sites are some of the barriers Kum & Go is trying to overcome as part of this project.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
One reviewer stated that the barriers are well developed and identified, while another said that there is a good range of regional/local marketing strategies for increasing the number of E85 retail locations. Also, partnerships with manufacturers (e.g., GM) will help. One other individual commented that there seems to be a carefully constructed strategy for evaluating and establishing fueling sites and tracking their performance. In addition to the direct deployment activities, the project promotes additional deployment by establishing a visible business case and helping to increase the demand/market. One person cited the four new locations under construction, along with 10 additional new sites planned during 2008 and four or more at Kum & Go sites. There are currently 18 locations to date, making them the number one retailer in Iowa at this point, and ranked in the top ten on location count. This reviewer could see 40+ E85 retail stations beyond 2008.

One final reviewer felt that the deployment strategy was not clearly described.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
One person commented that there is a vast untapped potential market for E85, while one person stated that the project is creating numerous successful facilities, which increases the availability of alternative fuel and increases consumer and retailer understanding of the fuel. Another reviewer indicated that, in addition to public education and outreach (described below), they have installed the infrastructure and worked with other stakeholders to advance E85. They have been using YouTube, publications and other media sources to promote the product, and the Secretary of Agriculture commended them as top E85 retailer. They have planned 15 grand openings, conducted annual E85 Days, and continued relationships with other stakeholders (ALA, GM, agricultural boards, etc.). One other reviewer acknowledged that there were difficult barriers to overcome, including market limits from OEMs, but stated there were well-done press and education and outreach activities.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.

One person noted that they are making progress, while another reviewer stated that their conclusions were based on the volume of E85 sales to date and the expansion of facilities. Another person stated that there is a significant degree of marketing being undertaken to support E85. They are installing stations and they are working with a number of key stakeholders to further the fuel in the marketplace. In addition, the data presented on fueling station growth at various locations is significant. One other reviewer cited the level of Congressional support, adding that there was significant growth shown and that the retrofit seems to have the best performance goals. This person also expressed some concern over product limitations.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

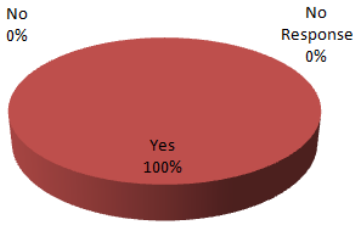
One person noted that the grant for this project is 42% with Kum & Go contributing approximately 50%, which is a significant investment by the company. As to whether the amount of resources being devoted to this project is sufficient, it is difficult to assess. Another person agreed, stating that there is not enough information to determine whether the investment in this project is pegged correctly. One reviewer stated that the break-even is 10,000 gallons. Another commented that there are never enough resources.

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

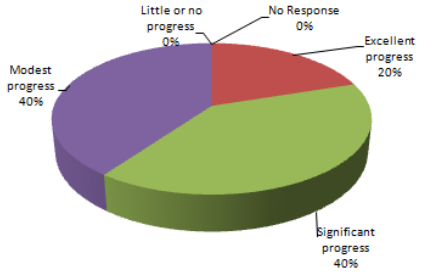
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: Kum-n-Go E85 Infrastructure Project

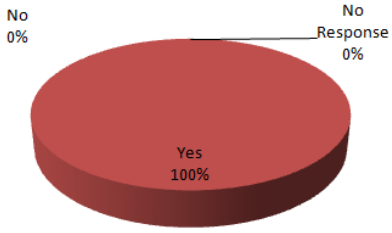
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



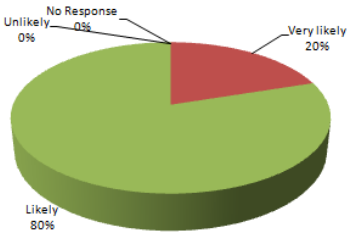
Question 3: Characterize the technical accomplishments and progress toward goals.



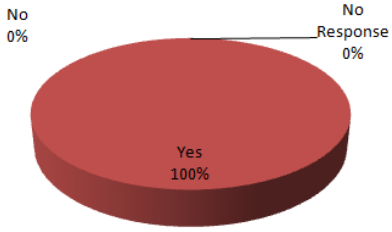
Question 2a: Are the goals of the project technically achievable?



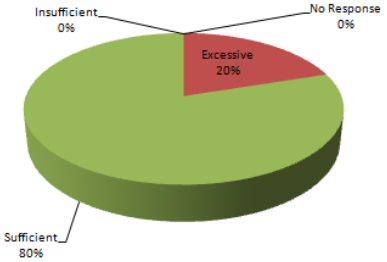
Question 4: How likely is the project team to move technologies into the marketplace?



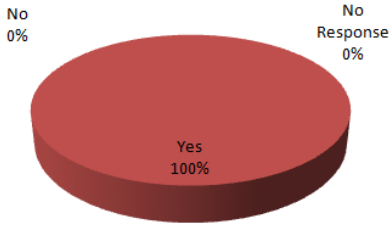
Question 2b: Have the technical barriers been identified and addressed?



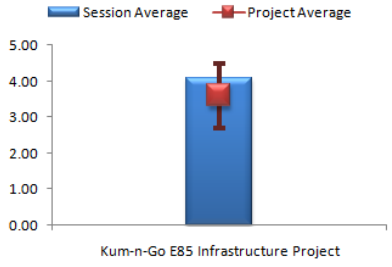
Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating



NBB Terminal Blending (Jill Hamilton of National Biodiesel Board)

Reviewer Sample Size
This project had a total of 5 reviewers.

Question 1: Does this activity support the overall DOE objectives of petroleum displacement? Why or why not?
One reviewer noted that biodiesel use displaces petroleum, while another commented that the project creates upstream supply as well as a business model for repeating the effort in additional locations. Another reviewer indicated that they have installed/modified five of six biodiesel meter blend terminals to dispense biodiesel 24 hours a day/365 days a year. The sixth entity will be doing this in 2008 after a change of location. They worked with five different vendors and were anxious to have them work with Clean Cities coalitions, since many had not done that in the past. Similarly, one reviewer cited the installation of six biodiesel blend terminals and coordination with Clean Cities. Another response simply noted that the fuel production was limited.

Question 2: Are the goals of the project technically achievable? Have the technical barriers been identified and addressed? Is the project likely to overcome those technical barriers? Please comment on the project's strategy for deployment of technologies.
Responses were generally positive here. One person commented that the initial problem in Arizona was overcome well, adding that locations are generally in areas well-suited for the use of the project. Another person stated that there was a good regional distribution of sites and also commented on the reprogramming of the original site in Arizona to Iowa.

One person felt that proper metering of terminals seems beneficial, while another reviewer felt that an upstream approach is important to the proliferation of alternative fuel options at the retail level. This person adds that creating successful terminals by leveraging federal grants not only builds fuel supply, but also establishes a repeatable model. One final reviewer commented on the 90 million gallons to be sold vs. the 31.8 million initially projected. This person noted that one of the six terminals isn't complete, and moved from Arizona to Iowa to get this project completed and meet the contract. The Florida site is already moving 28 million gallons of biodiesel; the cruise industry is its largest customer. The NYC site has biodiesel for on- and off-road applications (fleets and home heating), and has sold over 500,000 gallons of biodiesel. The Oceanside, NY has over 170,000 biodiesel gallons sold. The PA site, which opened March 2007, has sold 30,000 gallons of biodiesel. The Hartford Terminal, which opened in October, sold 30,000 gallons of biodiesel per month. The West Central site is to open in Iowa by April/May 08.

Question 3: Characterize your understanding of the technical accomplishments and progress toward DOE goals: please state the reasons for your assessment.
One reviewer commented that five of six terminals are in operation and displacing almost 30 million gallons of diesel fuel, with another citing the statistic of up to 90 million gallons of distributed biofuels. One person stated that they have significantly exceeded their biodiesel distribution goals. Lastly, one person commented on the good outreach to CC coalitions, Florida yes, sales good, and goals met.

Question 4: What is the likelihood that the project team will move the technologies toward or into the marketplace? Please state the reasons for your selection.
One reviewer based their conclusions on the amount of fuel already displaced, adding that terminals can go far to further educate consumers about benefits. Similarly, another person stated that the project has a 90 million gallon goal that it is on track to meet. It is establishing large-scale, quality-assured supply options and terminal business model. All of these contribute to building the

marketplace for a new fuel. One reviewer felt that they had identified the markets well and had good cost share. Similarly, another person stated that the NBB approach appears to be business-like, and they seem to have the experience and financial information on-hand to advise the industry and retailers.

Question 5: How sufficient are the resources for the project to achieve the stated milestones in a timely fashion?

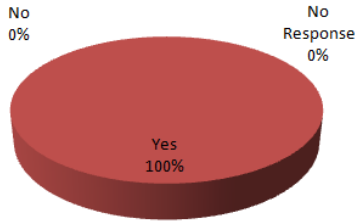
One reviewer commented that the project has successfully leveraged federal Clean Cities grants to promote other government and private investment, while another cited the 81% cost-share of this project, adding that this is significant and the DOE funding is greatly appreciated. One reviewer asked, is government investment necessary, or is there another federal role here?

Question 6: Summary rating: when scoring this project, consider the relevance of the work to DOE's objectives, potential impacts on DOE/VT goals, project accomplishments, likelihood of technology transfer, and sufficiency of project resources.

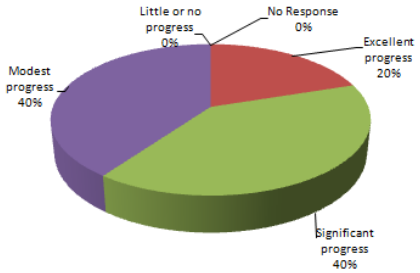
There were no expository comments for this question: refer to the graphic on the next page for this project's summary score.

Project: NBB Terminal Blending

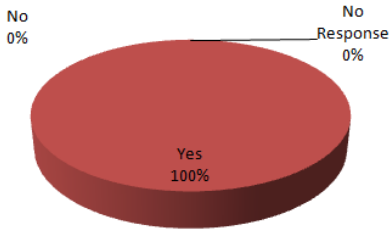
Question 1: Does this project support the overall DOE objectives of petroleum displacement?



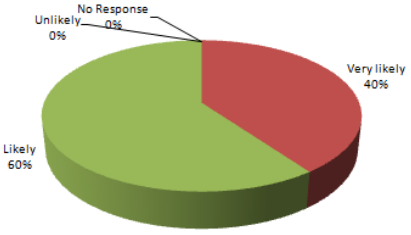
Question 3: Characterize the technical accomplishments and progress toward goals.



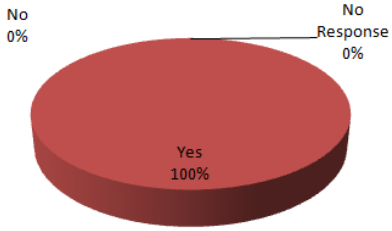
Question 2a: Are the goals of the project technically achievable?



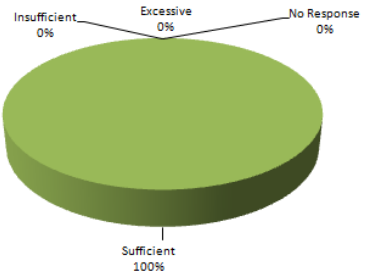
Question 4: How likely is the project team to move technologies into the marketplace?



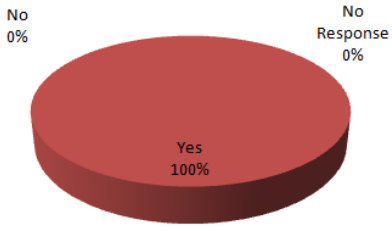
Question 2b: Have the technical barriers been identified and addressed?



Question 5: Characterize the resources available for this project to achieve the stated milestones in a timely fashion.



Question 2c: Is the proposed work likely to overcome technical barriers?



Question 6: Overall Rating