

Appendix 6

Refueling Infrastructure

This appendix outlines the criteria for project eligibility and gives the methods for calculating the reductions in NO_x emissions for a refueling infrastructure project. To estimate emissions reductions, the TCEQ will use applicant-supplied information on the type of vehicles and equipment using the fuel. The emissions reduction for the activity will be the difference in the emissions level in tons of NO_x expected to be produced by baseline vehicles and equipment, and the emissions level in tons of NO_x expected to be produced through the use of the qualifying fuel by the vehicles and equipment, within the eligible counties.

The emissions standards and factors applicable to this program are contained in a technical supplement which the TCEQ will make available in conjunction with these guidelines. Potential grant applicants should contact the TCEQ for copies of the supplement and for answers to questions about which emissions standards and factors to use.

In accordance with Texas Health and Safety Code 386.104(j) and TERP program rules, 30 TAC 114.622(g), the executive director or his or her designee has the authority to waive certain eligibility requirements, based on a finding of good cause. Situations where good cause may be determined and a waiver granted are explained in the discussion of eligibility requirements in this appendix or the appendix applicable to the type of vehicle or equipment activities used to show that emissions reductions will be achieved as a result of the infrastructure project.

The executive director may identify other eligibility criteria for which a waiver may be considered, based on a finding of good cause and subject to the statutory and regulatory requirements. Waiver options will be explained in the grant-application materials.

In determining good cause and deciding whether to grant a waiver, the executive director shall ensure that the emissions reductions that will be attributable to the project will still be valid and, where applicable, meet the conditions for assignment for credit to the State Implementation Plan.

Eligible Activities and Costs

The TCEQ may further limit the types of eligible activities beyond policies stated here, and may more narrowly define eligibility requirements, under a particular funding round or by geographic area, as needed to best achieve the objectives of the TERP.

The grant recipient may be eligible for reimbursement up to 50% of the total eligible costs for the purchase and installation of the infrastructure. However, expenses for

salaries, travel, land purchases, and overhead, including indirect costs, will not be covered. Costs that may be reimbursed by the TCEQ include:

- the invoice cost of the infrastructure equipment, including sales tax and delivery charges;
- the cost of associated supplies directly related to the installation of the infrastructure;
- installation costs;
- costs of design and engineering work directly necessary for the installation of the infrastructure; and
- reengineering and construction costs, if the existing site must be modified to allow for installation of the infrastructure.

All grant-funded infrastructure must be purchased, not leased.

Project Criteria

In addition to the eligibility criteria previously presented, the following list of criteria applies to projects involving non-road equipment activities. The TCEQ may impose additional criteria, and may more narrowly define the criteria established in the guide, during a particular funding period or by geographic area, as needed to best achieve the objectives of the TERP.

- One or more eligible activities of the same project type (i.e., on-road, non-road, locomotive, etc.) that will occur in the same primary area may be included under one project application.
- Infrastructure for fueling vehicles and equipment used primarily for competition or recreation is not eligible for funding.
- The infrastructure project must result in new, surplus emissions reductions that will then be available to the TCEQ for use in the State Implementation Plan. In general, the TCEQ will not accept as a new emissions reduction the conversion of a vehicle or equipment fleet that occurred earlier than 12 months before the grant application deadline.
- An activity is not eligible if it is required by any state or federal law, rule, regulation, memorandum of agreement, or other legally binding document. However, this restriction does not apply to an otherwise qualified activity—regardless of the State Implementation Plan’s assumption that the change in equipment, vehicles, or operations will occur—if, on the date the grant is awarded, the change is not yet required by any state or federal law, rule, regulation, memorandum of agreement, or other legally binding document. This restriction also does not apply to a purchase of vehicles or equipment that is required only by local law or regulation, or by controlling-board policy of a public or private entity. Projects used to demonstrate a technology that may be used to comply with an emissions-reduction requirement may be funded, as long as the

reductions directly attributable to the project are not used to comply with those requirements.

- An activity involving a new emissions-reduction measure that would otherwise generate marketable credits under state or federal emissions reduction credit averaging, banking, or trading programs is not eligible for funding under this program unless:
 - the activity includes the transfer of the reductions that would otherwise be marketable credits to the State Implementation Plan or the owner or operator as provided under Texas Health and Safety Code 386.056, and
 - the reductions are permanently retired.
- The incremental cost of the proposed activity must be reduced by the value of any existing financial incentive that directly reduces the cost of the proposed activity, including tax credits or deductions, other grants, or any other public financial assistance.
- In the areas of the state where TxLED is required, the baseline and reduced-emissions-rate calculations for diesel-engine use after September 2005 must be adjusted using a correction factor, in addition to any other calculation adjustments.
- The cost-effectiveness of a project, other than a demonstration project, may not exceed any limits established by the TCEQ on the cost per ton of NO_x emissions reduced in the eligible counties for which the project is proposed.
- For all activities, the activity life must be at least five years. The TCEQ may establish longer activity-life requirements for each grant period. Not less than 75% of the annual usage of the qualifying fuel dispensed from the infrastructure must take place in one or more of the eligible counties throughout the life of the project. For infrastructure activities to fuel marine vessels, not less than 75% of the annual usage of the qualifying fuel dispensed from the infrastructure must take place in bays adjacent to one or more of the eligible counties, or in the Texas portion of the Gulf Intracoastal Waterway, throughout the life of the project.
- Annual usage normally should be measured using fuel consumption by the vehicles or equipment being fueled from the infrastructure. Therefore, a grant recipient must have a viable mechanism for tracking and reporting on the use of the fuel dispensed.
- The TCEQ will determine an acceptable activity life for infrastructure activities, case by case.
- Applicants must agree to monitor the use of grant-funded vehicles, equipment, infrastructure, and fuel, and to report to the TCEQ for the life of each grant-funded activity. If the grant recipient does not own or operate the vehicles or equipment to be fueled from the infrastructure, the recipient will need to explain, as a condition of the grant, what mechanism will be used to ensure that the vehicles and equipment are operated within the eligible counties for the specified time period.

Figure 6.1
Correction Factor for TxLED

The TCEQ adopted rules (30 TAC 114.312–19) requiring that diesel fuel sold or supplied for use in compression-ignition engines in certain counties in Texas must meet low-emission-diesel standards.

The counties affected by the TxLED requirements currently include all those eligible for TERP incentive funding, as listed in Table 3.1, except for El Paso County.

The requirements set a maximum for content of aromatic hydrocarbons of 10% by volume. The requirements also set a minimum cetane number for TxLED of 48.

The TxLED requirements are intended to result in reductions in NO_x emissions from diesel engines. Currently, reduction factors of **5.7%** (0.057) for on-road use and **7.0%** (0.07) for non-road use have been accepted as estimates for use of TxLED. However, these estimates are subject to change, based on the standards accepted by the EPA for use in the Texas State Implementation Plan. The TCEQ will identify the appropriate reduction factors to use in the technical supplement prepared to support these guidelines.

For activities in the applicable counties, a correction factor will need to be applied when calculating the baseline or reduced emissions for diesel engines.

On-road:

$$\text{TxLED correction factor} = 1 - 0.057 = \mathbf{0.943}$$

Non-road:

$$\text{TxLED correction factor} = 1 - 0.070 = \mathbf{0.93}$$

- Applicants must also agree to notify the TCEQ of any changes in the following during the activity life: termination of use; change in use, sale, transfer, or accidental or intentional destruction of grant-funded vehicles, equipment, or infrastructure; or change in use of the qualifying fuel.
- Administrative costs and other internal costs of the grant recipient, including but not limited to personnel expenses, internal salaries—indirect costs, and travel—are not eligible. This restriction also applies when the grant recipient delivers the grant-funded vehicle or equipment before or after accepting it.
- Consultant fees for the preparation of a grant application, either directly or as an addition to the cost basis of the grant-funded vehicle, equipment, or engine, are not eligible.
- Fees for a third-party consultant hired by the grant recipient to manage and administer the grant-funded activities, including coordination of the work and submission of reports and paperwork to the TCEQ for the grant recipient, are not eligible. This restriction is not intended to limit the ability of the vehicle or equipment supplier or installer to include reasonable and necessary costs for managing the work to be performed in the price of the vehicle, equipment, or installation. The costs for professional services, including engineering and technical work, required for completion of the activity may be included, subject to the restrictions pertaining to that type of project. Per the Uniform Grant

Management Standards, the “cost plus a percentage of cost” method of contracting for professional services must not be used.

- The TCEQ may impose additional criteria for certain projects and funding periods, consistent with these guidelines.

NO_x Emissions Factors

The baseline NO_x emissions factors for this program normally should be the federal standards for NO_x emissions applicable to the engines being provided the fuel from the infrastructure. The federal NO_x emissions standards for various categories of engines are listed in a technical supplement available from the TCEQ. Potential grant applicants should consult with the TCEQ to ensure they use the appropriate baseline standards.

Calculating Reductions in NO_x Emissions

In general, the emissions-reduction benefit represents the difference in the emissions level of a baseline engine and a reduced-emissions engine. For refueling-infrastructure activities, reductions in NO_x emissions should be calculated based on information regarding the type of vehicles and equipment using the fuel.

NO_x-emissions reductions may be claimed for a verified fuel or fuel additive, the purchase and use of alternative-fueled vehicles or equipment, or an upgrade or conversion of vehicles or equipment. The TCEQ may limit the types of eligible activities during a particular grant period.

Emissions reductions for the use of a fuel or fuel additive must be verified by the EPA or the California Air Resources Board (CARB), or otherwise accepted by the TCEQ, as achieving the claimed reductions when used in lieu of a baseline fuel or an additive mixed with a baseline fuel. The verified fuel or additive may only be used in vehicles and equipment owned or operated by the applicant.

In some cases, the TCEQ may accept a claim of reduced NO_x emissions based on the purchase and use of alternative-fueled vehicles or equipment certified at an NO_x emissions rate that is less than the federal standard for that engine. In general, the vehicles and equipment using the qualifying fuel should be owned or operated by the applicant. However, the TCEQ will consider situations where the fuel will be supplied to upgraded fleets owned or operated by another enterprise or authority. The TCEQ will require a letter of agreement with a third party indicating the willingness to use the qualifying fuel and report on its use.

For vehicle or fleet upgrades or conversions, a reduction in NO_x emissions must occur when compared to an equivalent baseline engine. The upgraded vehicle or equipment engines must be certified to a NO_x-emissions rate that is less than the standard for

that type of engine under the test cycle used. The reductions in NO_x emissions are based on the difference in the emissions rates. In general, the baseline for comparison for natural gas vehicles certified under the diesel cycle will be the diesel-engine standard applicable to that type of engine. Similarly, for propane-, natural gas-, and other-fueled vehicles and equipment certified under the Otto-cycle standard, the baseline for comparison will be the federal Otto-cycle standard applicable to that type of engine.

The TCEQ may also consider, at its discretion, reductions in NO_x through the replacement of conventionally powered vehicles or equipment with new or late-model vehicles powered by alternative fuels to be served by the refueling infrastructure. The emissions reductions under this approach will be based on the same methodology and requirements as apply to a replacement project involving the same type of vehicle or equipment. If the grant recipient does not own the vehicles or equipment being replaced, the recipient will be responsible for securing necessary agreements from the vehicle or equipment owner to destroy the vehicle or equipment being replaced and to use the replacement vehicle or equipment in the eligible counties for the percentage of annual usage and for the annual and total usage amounts required for the activity life.

Calculating Cost-Effectiveness

Only the amount of incentive funds requested under the program will be used in calculating cost-effectiveness. The incremental costs for each activity must be reduced by the value of any existing financial incentive that directly reduces the cost of the proposed activity, including tax credits or deductions, other grants, or any other public financial assistance.

To determine the cost-effectiveness of an activity—with the exception of qualifying fuel activities—the incentive amount for the activity included in the project must be amortized over the activity life designated by the applicant, at a discount rate of 3%.

The following amortization formula yields a *capital-recovery factor* (CRF).

$$\text{capital-recovery factor} = [(1 + i)^n (i)] / [(1 + i)^n - 1]$$

$$\text{where } \begin{array}{l} i = \text{discount rate (3\%)} \\ n = \text{activity life} \end{array}$$

The discount rate of 3% reflects the opportunity cost of public funds—the level of earning that reasonably could be expected by investing state funds in various financial instruments, such as U.S. Treasury securities.

The incentive amount must be multiplied by the incremental cost or incentive amount requested to determine the annualized cost.

$$\text{incremental cost} \times \text{CRF} = \text{annualized cost}$$

The cost-effectiveness calculations appear in Table A6.1. Capital-recovery factors for up to 20 years appear in Table A6.2, for use in the calculations.

For projects that include more than one activity, the total project incentive amount will be used to determine the cost-effectiveness of the project. The applicant may request an incentive amount that is less than the full incremental costs, in order to meet the cost-effectiveness criteria.

To determine the cost-effectiveness: First sum all of the annualized costs for the activities included in the project. Also sum the annual emissions reductions from each activity to determine an annual emissions reduction for the project. Then divide the combined annualized costs for all activities included in the project application by the total annual reductions in NO_x emissions for the combined project activities.

$$\text{total annualized costs} / \text{total annual NO}_x \text{ reductions} = \text{project cost-effectiveness}$$

Table A6.1
Calculating Cost-Effectiveness

Step 1. Determine the capital-recovery factor (CRF)	
$\text{CRF} = [(1 + i)^n (i)] / [(1 + i)^n - 1]$ $i = \text{discount rate (.03)}$ $n = \text{activity life}$	
Capital-recovery factor:	
Step 2. Determine the annualized cost	
Incentive amount × CRF = annualized cost	
Annualized cost (\$/year):	
Step 3. Determine cost-effectiveness	
$\text{Annualized cost (\$/year)} / \text{annual NO}_x\text{-emissions reduction (tons/year)}$ $= \text{cost-effectiveness (\$/ton)}$	
Cost-effectiveness (\$/ton):	\$

Table A6.2
Capital-Recovery Factors Using a Discount Rate of 0.03

Activity Life	1	2	3	4	5	6	7	8	9	10
CRF	1.00	.5226	.3535	.2690	.2184	.1846	.1605	.1425	.1284	.1172
Activity Life	11	12	13	14	15	16	17	18	19	20
CRF	.1081	.1005	.0940	.0885	.0838	.0796	.0760	.0727	.0698	.0672

