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# New Technology Research and Development Program

## Guidelines for Grants



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## **Guidelines for Grants**

Prepared by  
Air Quality Division

RG-481  
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# Chapter 1

## Summary

These guidelines contain the criteria for grants under the Texas New Technology Research and Development (NTRD) Program, authorized under Chapter 387, Subchapter C, of the Texas Health and Safety Code.

### History of Program

In 2003, HB 37, 78th Legislature, Third Special Session, authorized the TCEQ to administer the NTRD program. The program was intended to complement the Texas Emission Reduction Plan (TERP) program that funds the use of verified or certified technologies to reduce emissions from on-road and non-road mobile sources. The TCEQ managed and administered the NTRD program during the fiscal 2004–05 biennium.

In 2005, HB 2481, 79th Legislative Session, transferred the administration of the NTRD program to a non-profit organization based in Houston with the funding for the program to be provided through a contract with the TCEQ. During the fiscal 2006–07 and 2008–09 biennia, the Texas Environmental Research Consortium (TERC) and its Research Management Organization—the Houston Advanced Research Center (HARC)—administered the NTRD program under contract with the TCEQ.

In 2007, SB 12, 80th Legislative Session, decreased the variety of eligible grant types, authorized greater TCEQ oversight of the TERC’s contracted work, and authorized funding for a diesel test center at the University of Houston. Consequently, in 2007 the TCEQ contracted with the University of Houston to upgrade its existing test center facilities during the fiscal 2008–09 biennium.

In 2009, HB 1796, 81st Legislative Session, returned administration of the NTRD program to the TCEQ and again revised the eligible grant categories. These guidelines establish the standards and criteria for grants issued under the NTRD program as administered by the TCEQ.

### Purpose

The primary objective of the NTRD program is to promote the development and commercialization of technologies that will reduce the emissions of NO<sub>x</sub> in nonattainment areas in Texas.

Potential projects for the NTRD program will be:

- Potentially TERP-eligible technologies with the ultimate goal of verification or certification with the EPA or the California Air Resources Board (CARB);
- Advanced technologies for new vehicles and engines with very low or zero emissions, including stationary and mobile fuel cells;
- Advanced technologies that reduce emissions from stationary sources;
- Emission reduction technologies that have been successfully developed and warrant a field validation for full commercial acceptance; or
- Development of innovative qualifying fuel production technologies that either make use of otherwise unusable energy sources in the state of Texas or enable production of qualifying fuels at lower prices.

Any potentially TERP-eligible technologies must also demonstrate that they have no significant adverse impact on fuel economy to be eligible for NTRD funding.

These guidelines establish the standards and criteria for grants issued by the TCEQ under the NTRD program. Along with the statutory provisions applicable to this program, recipients of grant funding must adhere to the criteria in these guidelines.

The TCEQ may also establish more specific criteria, through contracts or other funding mechanisms (such as Requests for Grant Applications), consistent with these guidelines.

## Funding

This program is funded through revenue from the TERP fund (Texas Health and Safety Code 386.251). The fund consists of fees and surcharges established by the Texas Legislature. Texas Health and Safety Code 386.252(a)(2) currently appropriates 9 percent of the TERP fund to the NTRD program.

The amount of funds available for grants during each year may vary depending upon the cash flow to the program, the amount of revenues received, appropriations made to the program, and reallocations of TERP funds pursuant to Texas Health and Safety Code 386.252(b). The TCEQ will periodically issue notices and information regarding the grants, including information on the amount of funds available.

## How to Contact Us

Anyone interested should check our Web site for information about the grants program. The NTRD Web page at <[www.terpgrants.org](http://www.terpgrants.org)> contains links to this document and application forms, as well as other information that may be helpful to a potential applicant.

If you are unable to access the Web site or you need additional information, the staff at the TCEQ is available to answer questions about this program. If you are unclear as to whether your proposed project would qualify for a grant, please feel free to contact us to discuss the project.

You may contact the program by calling 512-239-4950, 8:00 a.m.–5:00 p.m., Monday–Friday. You may contact us by mail at:

Implementation Grants Section, MC 204  
Air Quality Division  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

You may also contact us by e-mail at <[ntrd@tceq.state.tx.us](mailto:ntrd@tceq.state.tx.us)>.

The verification procedure for emission-reduction technologies is described in EPA publications. Information and an outline of the verification process appear at <[www.epa.gov/otaq/retrofit/documents/flowchrt.gif](http://www.epa.gov/otaq/retrofit/documents/flowchrt.gif)>—or, for fuel reformulation, see <[www.epa.gov/otaq/models/analysis.htm](http://www.epa.gov/otaq/models/analysis.htm)>.

The EPA offers several programs to assist the public and private sectors in developing and commercializing new environmental technologies, including testing protocols. More information is available through the EPA at <[www.epa.gov/etop/](http://www.epa.gov/etop/)>.

# Chapter 2

## Eligibility Requirements

### Eligible Applicants

The primary objective of the NTRD program is to promote the development and commercialization of technologies that will reduce the emissions of NO<sub>x</sub> in nonattainment areas in Texas.

An individual, business, governmental agency, or educational organization may apply for a grant. An applicant is not required to be located within Texas to be eligible for funding. All applicants must certify their compliance with all applicable Texas laws.

Each applicant will need to demonstrate the projected potential for reduced NO<sub>x</sub> emissions, the cost-effectiveness of the technology once commercialized, the potential for the technology to contribute significantly to air quality goals, and a substantial commercialization plan.

The NTRD program will evaluate proposals according to the selection criteria in the Request for Grant Applications (RFGA). The criteria may focus on the emission reduction potential, while remaining technology neutral as to the type of technology proposed, or may target particular types of promising technologies.

Applicants will be required to submit the following, as applicable:

- articles of incorporation
- authorization to sign grants or contracts
- resumes or qualifications of all principal staff involved in the project
- commercialization plan
- project plan (including drawings, photos, etc., to clarify the project)
- project schedule (including schedule of deliverables)
- testing plan/protocol
- subcontracting plan
- detailed budget

### Eligible Activities

Activities eligible for funding under this program are intended to reduce NO<sub>x</sub> emissions in Texas. NO<sub>x</sub> is usually a by-product of high-temperature

combustion. Everyday functions, like driving a motor vehicle or operating heavy equipment, contribute to the creation of NO<sub>x</sub>. It reacts with volatile organic compounds in the presence of sunlight to form harmful ground-level ozone.

Activities that may be eligible under this program are outlined below. Vehicles and equipment used primarily for competition or recreational purposes are not eligible for funding under any of the project categories. The TCEQ may more narrowly define or limit the types of eligible activities for a particular funding period.

**Activities eligible for funding will be projects for the research, development, verification and/or certification, demonstration, and/or deployment of:**

1. Retrofit and add-on technologies to reduce emissions from the existing stock of vehicles and equipment targeted by the TERP, for example—
  - on-road heavy-duty vehicles (8,500 lbs or more) such as:
    - 18-wheel vehicles
    - dump trucks
    - buses
    - garbage trucks
    - delivery equipment
  - non-road equipment such as:
    - agricultural
    - lawn and garden
    - construction
    - ground support equipment at ports
  - marine vessels
  - locomotives
  - stationary engines

Such retrofits and add-on technologies are eligible provided that the technologies do not significantly reduce the fuel economy of these engines and vehicles.

2. Advanced technologies for new engines and vehicles that produce very low or zero emissions of NO<sub>x</sub>, including stationary and mobile fuel cells.
3. Advanced technologies for reducing NO<sub>x</sub> and other emissions from stationary sources.
4. Technologies that would allow qualifying fuels to be produced from energy resources in Texas. Preference will be given to projects involving otherwise unusable energy resources in this state and to projects producing qualifying fuels at prices lower than otherwise available and low enough to make projects to be funded under the program economically attractive to local businesses in the area for which the project is proposed.

Projects may also propose the field validation of any of the above innovative technologies that reduce emissions of NO<sub>x</sub> and other emissions and require demonstration of viability for full commercial acceptance.

# Chapter 3

## Application and Award Procedures

### How to Apply

The TCEQ will issue a request for grant applications (RFGA) periodically and indicate the dates that project selections will be made. Copies of the RFGAs and the necessary application forms will be made available at the TCEQ's NTRD Web page and directly from the TCEQ.

To find more about the grants process, or to obtain copies of the application forms, you should check our website at <[www.terpgrants.org](http://www.terpgrants.org)>. You may also contact the TCEQ directly to discuss your potential project. Program staff members may be reached at 512-239-4950.

Each distinct project should be applied for separately. Costs should be broken down so that partial funding could be considered for any grant. Please enter all necessary information onto the application forms in accordance with the instructions. Incomplete applications may delay the review process or be deemed ineligible or unresponsive. The required number of copies of the application and all necessary attachments should be submitted to:

(Regular Mail)      New Technology Research and Development Program  
Implementation Grants Section, MC 204  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

(Express Mail)      New Technology Research and Development Program  
Implementation Grants Section, MC 204  
Texas Commission on Environmental Quality  
12100 Park 35 Circle, Bldg F  
Austin, TX 78753

## **Project Review**

### ***Initial Review***

The TCEQ will review the application for completeness; if incomplete or ineligible for funding at initial review, the TCEQ will notify the applicant. The TCEQ staff members will detail what is missing from the application or why the proposed project is not eligible for funding.

### ***Project Evaluation***

The TCEQ will evaluate properly completed applications for eligible projects according to criteria established in these guidelines and the RFGA and determine the funding eligibility of each activity included in the project application.

An application for a technology grant awarded under the New Technology Research and Development Program, per Texas Health and Safety Code § 387.006, must show reasonable evidence that the proposed technology project has a substantial commercialization plan and that the technology proposed is likely to be offered for commercial sale in this state as soon as practical after the date that funding is requested.

In each application, the TCEQ will consider:

- the projected potential for reduced emissions of NO<sub>x</sub>
- project maturity
- cost-effectiveness of the commercial product
- potential benefit to air quality
- strength of the commercialization plan
- other environmental impacts
- strength of the project team
- project timeline or schedule, including time frame for obtaining verification and/or certification of the technology
- potential funding from other sources
- the uniqueness of the environmental benefits of the plan or product being considered for funding

If the TCEQ requires additional information to complete or review a submitted application, then it may request that the applicant submit additional or supporting documentation within a reasonable set time period. Substantially

incomplete applications or those for which the requested additional information is not submitted will be deemed incomplete or unresponsive.

## ***Testing Protocol***

The TCEQ will require applicants to submit a proposed testing protocol as part of the application for all projects proposing to fund certification, verification, or development testing. The submitted protocol need not be currently accepted by the appropriate community or entity (e.g. CARB or EPA), but its inclusion in the application may allow the TCEQ to facilitate acceptance of an applicable test protocol in parallel with the grant negotiations and award and help minimize the time lapse before testing can begin.

There are some pre-approved protocols currently in place for the EPA and CARB. Testing protocols must be developed considering a broad range of interests (the original equipment manufacturer, the developer of the new technology, testing facilities, potential manufacturers or installers of the new equipment, etc.) that must reach agreement about how the test will be conducted. Approval of a test protocol is the beginning of the certification or verification process. For verifications, a common concern is how any warranty issues will be handled between the original equipment manufacturer and the retrofit or aftertreatment technology provider. The verification applicant must explain how the applicant and the original equipment manufacturer will address any warranty issues that may arise during testing or subsequent deployment.

Verification testing can be divided into two parts first, the initial readings or analysis before and after the new technology is applied, and, second, durability testing—demonstrating how long the new technology will last. The end of the process is an EPA- or CARB-approved final report presenting all of the data, including the engine families that would experience similar results. An acceptable written testing protocol initiates the process and carries it through to the final report. The testing data and final report serve as documentation to the EPA for determination of emission-reduction credits.

There are a limited number of facilities in the U.S. capable of performing the full range of testing required to evaluate a qualifying fuel, add-on, retrofit, or new technology. Verification or certification testing must be completed in a lab that meets the verification or certification authority's requirements. For non-verification and non-certification testing, the TCEQ must approve the test facility as adequate for the grant's purposes.

## ***Project Selection***

Project selections will use ranking and scoring procedures that will be explained in the RFGA. In general, the selection priorities may include prioritizing funding for different types of technology, the maturity of the project, and air quality benefits. The TCEQ's executive management will make the final project selections.

## **Grant Awards and Contracting**

Projects selected for funding will be awarded a grant through the execution of a contract between the recipient and the TCEQ. If needed, grants-management personnel will coordinate with the recipient on any additional information necessary to complete the contract, including the scope of work and budget. All grant recipients should review the contract language carefully before accepting and signing it.

Because the funding for this program is provided by revenue that is expected to be received continuously throughout the year, all grant awards and contracts will be contingent upon the actual receipt of sufficient revenue to cover the grant. Grant contracts may be issued on a contingency basis, subject to a following notice to proceed being issued by the TCEQ once sufficient funds are received.

The applicant will need to sign the grant contract and return the document to the TCEQ for final signature and execution. A copy of the signed contract will then be provided to the grant recipient.

An application for a Texas payee identification number (PIN) will also be provided to the grant recipient with the contract. This number must be assigned before the Texas Comptroller will make payment from state funds. Potential applicants without a PIN should consider applying for one as soon as possible. A grant recipient that has not already been assigned a PIN will need to return a completed PIN application to the TCEQ along with the signed contract. The TCEQ will forward the application to the Comptroller so that the required number can be assigned. Lack of a PIN will not affect project evaluation or selection.

# Chapter 4

## Grant Administration

### Reimbursement and Reporting

Grant payments will be on a reimbursement basis, meaning that the TCEQ's payment will be made **after** the eligible expense has been incurred and paid by the grant recipient. The grant recipient must request reimbursement of expenses by submitting a completed and original signed TCEQ request for reimbursement (RFR). Each RFR must be accompanied by a properly completed financial status report (FSR) for each activity conducted under the overall project.

The grant contract and the reimbursement forms will include requirements for documentation of expenses. Copies of purchase orders, receipts, and paid invoices for expenditures will need to be submitted with each RFR. Documentation of paid expenses (including canceled checks) must be provided in accordance with the grant provisions. Also, documentation of any required insurance must be submitted in accordance with the requirements of the applicable grant contract.

The grant recipient must submit a project status report monthly and with each RFR, and will provide a final report upon completion of the overall project. The project status and final reports will be posted at the TCEQ's Web site. Each report should clearly identify the project and be written so the average lay person can understand it.

The TCEQ will supply grantees with the reimbursement and reporting forms. All completed forms should be sent to:

Regular Mail:      New Technology Research and Development Program  
Implementation Grants Section, MC 204  
Texas Commission on Environmental Quality  
P.O. Box 13087  
Austin, TX 78711-3087

Express Mail:      New Technology Research and Development Program  
Implementation Grants Section, MC 204  
Texas Commission on Environmental Quality  
12100 Park 35 Circle, Bldg F  
Austin, TX 78753

The TCEQ staff will review the forms and accompanying documentation. To be eligible for reimbursement, all expenses must meet all applicable requirements

of the Uniform Grant Management Standards (UGMS), including allowable-cost principles set forth in Part III, Subpart C, section \_\_\_\_ .22 (b).

## **Grant Adjustments and Authorizations**

Grant recipients must complete the project according to the time lines established in the grant agreement. Approval for adjustments to the schedule should be requested as needed, according to the provisions of the grant agreement; however, a thorough explanation is required as to why additional time is needed. The TCEQ will have sole discretion to approve any modifications to time lines. Any changes to the timeline must be justified since the project's timing is considered in the application evaluation and selection process. Consistent with the grant contract, the TCEQ may also choose to terminate a project early due to delays, particularly if the delays will put the project completion date past the end of the eligible funding period.

Once the grant contract is signed and the project begins, any desired changes to the grant agreement, including work activities, authorized representative, schedule, or budget, must be requested in writing to the TCEQ. In accordance with the grant agreement provisions, the TCEQ may approve any changes through an amendment to the contract. The TCEQ will have the sole discretion to approve any changes to the contract. Instructions for budget changes will be included in the contract provisions. Applicants are encouraged to carefully analyze all costs in the grant application before execution of a contract.

## **Closeout Procedure and Release of Claims**

Upon completion of the project, the grant recipient must submit an RFR and FSR for all remaining unreimbursed expenses, all required expense documentation, and a final project report. This documentation must be submitted by no later than the deadline established in the grant contract.

The TCEQ must review and accept all deliverables due as part of the grant project before final reimbursement or closeout of the grant. The contract will contain provisions for the grantee to submit deliverables to the TCEQ for review and comment. Review and comment must be accounted for in the project time line and schedule. The grantee will also have a contractual obligation to respond to the TCEQ's review comments before finalizing reports or other deliverables.

The final FSR must include a completed and signed release of claims. Once it receives a release of claims form and the recipient has met other contract requirements, the TCEQ will close out the grant contract.

The TCEQ will also complete a contractor evaluation in accordance with the provisions that will be outlined in the grant contract. The grant recipient will be

notified of the results of the evaluation and will be given the opportunity to respond. This evaluation, which is required for all contracts administered by the TCEQ, is used to track the compliance and effectiveness of all TCEQ contractors and grant recipients.

## Glossary

Terms as they are defined in Texas Health and Safety Code, Chapter 386, and TCEQ rules (30 TAC 114.620) apply to this program, except as such terms are further defined and have the meanings as explained below.

**commercialization plan** A plan for bringing technology to market for public use in Texas.

**emission factors** The amount of emissions associated with a particular engine family, vehicle, equipment type, or stationary source.

**emissions inventory** The inventory used to support photochemical modeling for an affected area.

**EPA** The U.S. Environmental Protection Agency.

**motor vehicle** A self-propelled device required to be registered under Texas Transportation Code Chapter 502 and designed for transporting persons or property on a public highway.

**non-road equipment** A piece of equipment, excluding a motor vehicle or on-road heavy-duty vehicle, that is powered by a non-road engine, including non-road and non-recreational equipment and vehicles; construction, industrial, and mining equipment; locomotives; marine vessels; and other high-emitting engine categories.

**non-road engine** An internal combustion engine that is in or on a piece of equipment that is self-propelled or that propels itself and performs another function, excluding a vehicle that is used solely for competition, or a piece of equipment that is intended to be propelled while performing its function, or a piece of equipment designed to be capable of being carried or moved from one location or another. In general, an engine that will stay at a single site for at least a full year will be considered a stationary engine, rather than a non-road engine. The TCEQ will make the final determination of the type of engine.

**Notice to Proceed** A written notice given by the TCEQ to the performing party that confirms that adequate funding is available to support an agreement.

**on-road heavy-duty vehicle** An on-road motor vehicle that has a gross vehicle weight rating of 8,500 pounds or more.

**qualifying fuel** Any liquid or gaseous fuel or additive that is ultimately dispensed into a motor vehicle, an on-road heavy-duty vehicle, non-road equipment, or a stationary engine that provides reductions of nitrogen oxides emissions, as determined by the TCEQ, beyond reductions required by state or

federal law, rule, regulation, memorandum of agreement, or other binding document.

**retrofit** To equip an engine, a fuel system, or both with new emissions-reducing parts or technology after the manufacture of the original engine or fuel system.

**stationary engine** An internal combustion engine used either in a fixed application or in a portable (i.e. transportable) application in which the engine will stay at a single site for at least a full year (12 consecutive months). The TCEQ will make the final determination of the type of engine.

**testing protocol** A written document detailing how, when, and where testing of new technologies will be conducted. Potential applicants should review the EPA's criteria for testing new technologies.

**verification** Official testing conducted under the supervision of the EPA or CARB to verify the emission reductions from new technologies.

