

## Request For Comments

# Texas Hydrogen Infrastructure, Vehicle, and Equipment Grant Program (THIVE)

### Texas Commission on Environmental Quality (TCEQ) Texas Emissions Reduction Plan (TERP)

## The Texas Commission on Environmental Quality is Now Inviting Comments on the new Texas Hydrogen Infrastructure, Vehicle, and Equipment Grant Program.

The THIVE program was established under Texas Health and Safety Code (THSC), Chapter 386, by House Bill 4885, 88<sup>th</sup> Texas Legislature, Regular Session, effective September 1, 2023. THIVE will provide grants to encourage the adoption of hydrogen infrastructure, vehicles, and equipment that reduce emissions of oxides of nitrogen (NO<sub>x</sub>) from high-emitting sources in Texas nonattainment areas and affected counties.

The proposed criteria for the upcoming THIVE grant round are described below. TCEQ requests written comments on these criteria be submitted by email to: [TERP-comments@tceq.texas.gov](mailto:TERP-comments@tceq.texas.gov) no later than **September 22, 2023, at 5:00 pm CST**. Any responses to comments will be posted on the TERP website at [www.terpgrants.org](http://www.terpgrants.org). TCEQ has sole discretion as to whether to respond to comments. TCEQ may not reply to comments received after September 22, 2023.

Final requirements for THIVE projects will be published in the THIVE Request for Grant Applications (RFGA) upon the opening of the program.

### **Total Funding Available**

THSC, 386.252(a-1)(2), authorizes TCEQ to award up to \$8 million per fiscal year for qualifying THIVE projects.

### **Grant Round Schedule**

TCEQ anticipates accepting grant applications under the THIVE grant round for a period of 90 days, beginning in November 2023.

### **Eligible Applicants**

Eligible applicants include: individuals, state and local governments, corporations, or any other legal entity (all business entities such as corporations or partnerships must have an active registration with the Texas Secretary of State by no later than the program opening date).

### **Vehicles to be Replaced, Repowered, or Converted**

- Each vehicle must:
  - a) be a heavy-duty on-road or non-road vehicle;
    - 1) A heavy-duty on-road vehicle has a gross vehicle weight rating (GVWR) greater than 8,500 pounds (lbs.) and is certified to the United States (US) Environmental Protection Agency (EPA) heavy-duty engine emissions standards.
    - 2) A heavy-duty non-road vehicle has an engine rated at 25 horsepower or greater and is certified to the applicable US EPA non-road emissions standards.
  - b) have been continuously owned, leased, or otherwise commercially financed, registered (if on-road), and operated by the applicant in Texas for at least two years immediately preceding the application signature date; and

- c) be in operating condition with at least five years of useful life remaining.
- If selected for a replacement, the vehicle and engine being replaced must be destroyed and rendered permanently inoperable within 90 days of the reimbursement payment being issued by TCEQ by:
  - a) completely crushing the vehicle and engine, or
  - b) cutting a 3-inch or larger hole on both sides of the engine block and cutting both frame rails in half.
- If selected for a repower or conversion grant, the engine being replaced must be destroyed and rendered permanently inoperable within 90 days of the reimbursement payment being issued by TCEQ by:
  - a) completely crushing the engine;
  - b) cutting a 3-inch or larger hole on both sides of the engine block and cutting both frame rails in half; or
  - c) cutting a 3-inch or larger hole on both sides of the engine block.

### **Grant-Funded Vehicles**

A vehicle to be purchased with grant funds must be:

- a) a heavy-duty vehicle that uses hydrogen to operate the vehicle, including through the use of hydrogen fuel cells or an internal combustion engine that runs on hydrogen; and
- b) of the same weight classification and used in the same application or vocation as the vehicle being replaced.

### **Grant-Funded Repowers and Conversions**

A repower or conversion must result in:

- a) a heavy-duty vehicle that uses hydrogen to operate the vehicle, including through the use of hydrogen fuel cells or an internal combustion engine that runs on hydrogen; or
- b) a vehicle of the same weight classification and used in the same application or vocation as the vehicle prior to conversion.

### **Usage Commitment**

- **Replacement, Repower, Conversion, and New Purchase** - the grant-funded vehicle must be operated at least 55% of its total annual mileage (on-road) or hours (non-road) in one or more of the Texas nonattainment areas or Affected Counties for the earlier of five years or the date the vehicle reaches 400,000 miles (see list of qualifying counties on page 7).
- **Infrastructure** - hydrogen fuel cell charging or hydrogen refueling infrastructure must be owned, operated, and maintained by the grantee within an eligible county for the duration of the grantee's five-year usage reporting requirement.

### **Maximum Grant Amounts**

Applicants will choose their requested grant amount, up to the maximum amounts described below. For replacement, repower, conversion, or new purchase projects, the applicant must submit, with the grant application, a price quote or other price estimate provided by the vehicle or equipment manufacturer or dealer. For infrastructure projects, the applicant must submit, with the grant application, an estimated budget outlining the eligible project costs.

- **Replacement, Repower, or Conversion** – an applicant may request up to 100% of the *incremental cost* associated with the purchase, repower, or conversion of the grant-funded vehicle.
  - TCEQ will consider a lease with a binding commitment to buy and retain ownership of the grant-funded vehicle at the end of the lease (referred to as a lease-purchase agreement) a purchase.
  - The incremental cost is the total eligible cost of the grant-funded vehicle, repower, conversion, or infrastructure minus the value of any other financial incentive that directly reduces the cost of the proposed project, including tax credits or deductions, other grants, or any other public financial assistance (see “Eligible Costs,” below).
- **New Purchase** – an applicant may request up to 100% of the difference in the capital cost of the comparable on-road or non-road diesel vehicle and the incremental cost of the qualifying on-road or non-road hydrogen vehicle.
- **Infrastructure** – an applicant may request a maximum of 50% of the eligible costs of the hydrogen refueling or fuel cell charging infrastructure project, up to a total of \$2 million.

**Eligible Costs**

- **Eligible costs for replacement and new purchase projects may include, but are not limited to:**
  - a) cost(s) (or if leased, the capital lease cost basis) of the grant-funded vehicle;
  - b) taxes and government fees;
  - c) delivery and shipping fees;
  - d) factory and/or extended warranties;
  - e) maintenance and service contracts;
  - f) mechanic and safety inspections;
  - g) cooperative fees; and
  - h) manufacturer or dealer processing fees not related to financing.
- **Eligible costs for repower and conversion projects may include, but are not limited to:**
  - a) costs directly associated with replacing the existing engine with the hydrogen engine or for converting the existing engine to run on hydrogen or hydrogen fuel-cell;
  - b) the purchase and installation of the hydrogen refueling system and tanks, if applicable;
  - c) the cost of the new engine or conversion system, including the cost(s) of additional equipment that must be installed with the new engine or upgrade, as well as taxes, duty, protective in-transit insurance, freight charges;
  - d) the installation costs including the cost to remove and dispose of the old engine, if needed; installation costs may include costs to re-engineer the vehicle for the new engine to fit (technical design, testing, and other engineering services required as part of the installation work may also be included under this subcategory); and
  - e) other ancillary costs which include shipping costs, factory and/or extended warranties, mechanic and safety inspections, cooperative fees, service and maintenance contracts, and dealer or manufacturer fees.
- **Eligible costs for refueling infrastructure projects include:**

- a) **Equipment** includes tangible personal property having a unit acquisition cost of \$5,000 or more (including sales tax and delivery) with an estimated useful life of over one year. Equipment purchased with grant funds should be budgeted as equipment if the sum of the separate component parts (including tax and delivery) has an original value of \$5,000 or more. TCEQ will require an itemized invoice and proof of payment for reimbursement of all equipment costs.
  - 1) Eligible equipment costs may include liquid and compressed hydrogen storage tanks, liquid hydrogen pumps and vaporizers, electrolyzers, and other equipment at the facility directly needed to store and dispense hydrogen or charge hydrogen fuel cells.
  - 2) Eligible equipment-related costs include contractual costs and supplies and non-capital items necessary for the installation of the equipment.
- b) **Supplies and Materials** includes non-construction related costs for goods and materials having a unit acquisition cost (including sales tax and delivery) of less than \$5,000 per unit. An itemized invoice and proof of payment will be required for reimbursement of all supplies and materials costs.
- c) **Construction** includes the costs for the enhancement or building of permanent facilities. Construction costs include:
  - 1) planning, designing, and engineering;
  - 2) materials and labor;
  - 3) subcontracts for services in connection with the construction; and
  - 4) facility improvements, such as paving, foundations, and covers.
- d) **Contractual** includes non-construction related costs for subcontracted or hired out professional services or tasks provided by a firm or individual who is not employed by the applicant. List each subcontractor/consultant separately.

**Ineligible Costs**

Ineligible costs for all projects include:

- a) insurance premiums;
- b) finance fees and charges;
- c) salaries and travel expenses for employees of the grantee;
- d) expenses of any lobbyist registered in Texas;
- e) costs associated with the preparation and submission of the application;
- f) administrative costs of the grantee, including overhead and indirect costs (e.g., office supplies, rent, marketing, and advertising);
- g) facility improvements and equipment not directly related to the installation of the hydrogen refueling or fuel cell charging equipment;
- h) facility, land, or an interest in land;
- i) permitting costs for TCEQ-issued permits;
- j) costs that do not involve an arms-length transaction, such as the use of existing inventory without a proof of purchase, or transactions between affiliated companies;
- k) any costs paid prior to September 1, 2023; and

- l) food and drink.

### **Priority, Ranking, and Selection**

Eligible projects will be scored, ranked, and selected competitively based upon the following statutory requirements:

- **Priority Categories** – THSC, 386.302(d), requires TCEQ to prioritize the awarding of grants by project category in the following order:
  - a) Projects to replace on-road heavy-duty vehicles with newer on-road hydrogen vehicles.
  - b) Projects to purchase, lease, repower, or convert on-road heavy-duty vehicles with a powertrain powered by hydrogen.
  - c) Projects to implement hydrogen refueling or charging infrastructure that is open and accessible to the public at least as frequently as the business operating hours of the site.
  - d) Projects to replace non-road heavy-duty vehicles with newer non-road hydrogen vehicles.
  - e) Projects to purchase, lease, repower, or convert non-road heavy-duty vehicles with a powertrain powered by hydrogen.
- **Preference Scoring** – THSC, 386.302(e), requires TCEQ to give preference to projects with the most cost-effective projects that will result in the greatest reduction in emissions of NO<sub>x</sub>. Applications will be evaluated, scored, and ranked *within* each priority category according to the cost effectiveness of the project, and the total amount of NO<sub>x</sub> projected to be reduced over a five-year contract period.
  - a) **Total NO<sub>x</sub> Reductions:** projects with the highest projected NO<sub>x</sub> reductions (tons of NO<sub>x</sub>), as compared to all other projects in the same priority category, will receive the most points in that scoring category (up to 50 points).
    - 1) **Replacement, Repower, or Conversions.** Total NO<sub>x</sub> reductions will be based on the difference between the certified NO<sub>x</sub> emissions rate of the vehicle or engine to be replaced, repowered, or converted, and the NO<sub>x</sub> emissions rate of the grant-funded vehicle, over the five-year contract period for the project.
    - 2) **New Purchase.** Total NO<sub>x</sub> reductions will be based on the difference between the NO<sub>x</sub> emissions rate of the grant-funded vehicle and the most current certified NO<sub>x</sub> emissions rate for the equivalent diesel vehicle, over the five-year contract period for the project.
    - 3) **Infrastructure.** Total NO<sub>x</sub> reductions will be based on emissions reduction points assigned to each infrastructure project, with a 1 point added for each access point proposed with the project (e.g., port or nozzle); and an additional 2 points added for fuel or electricity produced by renewable energy sources.
  - b) **Cost Effectiveness:** projects with the lowest cost per ton of NO<sub>x</sub> reduced, as compared to all other projects within the same priority category, will receive the most points in that scoring category (up to 50 points).
  - c) **Overall Score:** the overall score for each project will be calculated by adding the “Cost Effectiveness” and “Total NO<sub>x</sub> Reductions” scores together.

Projects will be ranked within each priority category according to their overall score. Projects that have high scores for both preference factors will receive the highest overall scores and ranking within their priority category.

- **Selection** – TCEQ will select for award the highest-ranking eligible projects in the order of the priority categories listed above.

### **Grant Award and Contracting**

Applicants selected to receive grant funding will be required to sign a contract with TCEQ. The approved activities outlined in the application will be represented in the contract's Scope of Work. Grant recipients must commit to taking all actions necessary to ensure the successful completion and subsequent operation of the new vehicles, equipment, and/or refueling infrastructure (referred to in the contract as Grant Equipment) within the contract's time frames and funding limitations.

- **Reimbursement of Expenses**

- a) Eligible expenses must have been incurred on or after September 1, 2023, to be considered for funding.
- b) Payments will be made on a reimbursement basis for eligible costs paid in full by the grantee.
- c) TCEQ will not reimburse an amount that will exceed the costs incurred by the grantee with the addition of any other financial incentive that directly reduces the cost of the proposed project, including tax credits or deductions, other grants, or any other public financial assistance.
- d) Grantees will be required to provide documentation in accordance with the contract to show that grant-funded equipment has been received and costs have been paid in full before reimbursement will be provided by TCEQ unless otherwise approved.
- e) All costs must be paid in full by the grantee, grant-funded equipment received, and final requests for reimbursement received by TCEQ no later than April 30, 2027.
- f) If the grantee finances the grant equipment, the reimbursement will be assigned to the company that provided the financing. To be paid directly, the grantee must show that the grantee paid eligible expenses that are equal to, or greater than, the reimbursement amount with cash on hand (non-borrowed funds).
- g) If the grant equipment is leased, the lease must have a term sufficient to extend to the end of the activity life or a binding commitment to purchase at the end of the term. For lease purchase arrangements, an option to buy at the end of a lease term without a binding commitment is not sufficient.

- **Annual Usage Reporting**

- a) The time period used to determine the emissions reductions for each activity is referred to as the Activity Life. The Activity Life will start on the date TCEQ approves disposition (or the date of reimbursement if disposition is not applicable) for an activity and will end on the earlier of:
  - 1) the fifth anniversary of the start date for the Activity Life; or
  - 2) for on-road vehicle replacement projects, 400,000 miles of vehicle operation after the start of the Activity Life.
- b) For the duration of the Activity Life, a grantee must:
  - 1) Own or lease to purchase, the grant-funded equipment (refueling infrastructure must be purchased and not leased);

- 2) register (unless the vocational type of the vehicle is exempt from inspection and registration requirements) and operate the grant-funded vehicles in Texas, with at least 55% of the vehicles' total annual miles of operation occurring in the eligible areas;
  - 3) maintain usage and location records for the grant-funded equipment;
  - 4) maintain the grant-funded equipment in proper operating condition;
  - 5) obtain sufficient commercial insurance for each grant-funded equipment to protect against loss, damage, or liability (proof of self-insurance will be sufficient for governmental entities);
  - 6) provide written notice to the TCEQ via email at [TERP-Monitoring@tceq.texas.gov](mailto:TERP-Monitoring@tceq.texas.gov) within 30 calendar days of the accidental destruction or repossession of grant funded vehicles; and
  - 7) request approval for any changes, including, but not limited to:
    - the termination of use;
    - the change in use;
    - the intentional destruction of grant-funded vehicles; or
    - the sale of grant-funded vehicles. Any sale of the grant-funded vehicle during the contract period will be subject to approval and consent to assignment by TCEQ in accordance with the contract terms.
- c) During the Activity Life, grantees will provide annual usage reports. The usage reports are used to ensure compliance with the annual usage requirements identified in the contract Scope of Work and to identify any issues preventing performance.
- d) Failure to meet the program requirements may invoke the contract's remedies, including termination of the contract and the return of all or a pro-rata share of the grant funds.

### **List of Eligible Counties**

- **Nonattainment Counties:** Anderson, Bexar, Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Ellis, Fort Bend, Freestone, Galveston, Harris, Howard, Hutchinson, Kaufman, Liberty, Montgomery, Navarro, Panola, Parker, Rockwall, Rusk, Tarrant, Titus, Waller, and Wise Counties.
- **Affected Counties:** Bastrop, Caldwell, Comal, Gregg, Guadalupe, Hardin, Harrison, Hays, Henderson, Hood, Hunt, Jefferson, Johnson, Nueces, Orange, San Patricio, Smith, Travis, Upshur, Williamson, and Wilson Counties.

**For More Information** contact TERP staff at [terp@tceq.texas.gov](mailto:terp@tceq.texas.gov) or 800-919-TERP (8377).