

Propane School Bus Incentives

Chairman Michael L. Williams
Railroad Commission of Texas



RAILROAD COMMISSION OF TEXAS
PROPANE SCHOOL BUSES

Railroad Commission Role

- RRC is Texas' chief energy agency
- Charged by statute to promote economically and environmentally beneficial uses of propane
- Worked with Blue Bird, Propane Education and Research Council and Rush to develop, market and promote an ultra-low emissions propane school bus
- Administers \$24 million grant program for propane school buses, forklifts and medium-duty trucks



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School Bus Facts

- Texas has 36,800 school buses
- One-third are pre-1990 models
- Pre-1990 buses emit 60 times as much pollution as current standards
- 35 Texas school districts already operate a total of 1,533 propane buses
- 77 percent are located in TERP-eligible counties



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Why Use Propane?

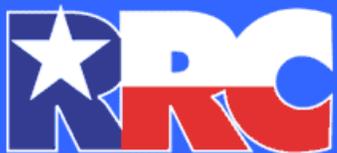
- Cleaner air
- Cost savings
- Energy security



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PROPANE SCHOOL BUSES

Why Use Propane?

- Cuts emissions by 83-99 percent
- First-year cost savings: up to \$35,000 per bus in TERP-eligible counties and \$3,800 per bus in most other counties
- Annual savings of \$5,500 per bus
- Propane is 90 percent U.S.-produced; most of the rest comes from Canada



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Reduced Reliance on Foreign Oil

- A typical propane school bus backs out 60 barrels of diesel per year
- Replacing Texas' pre-1990 buses with propane would save more than 700,000 barrels a year
- Replacing all of Texas' diesel buses with propane would save 2.1 million barrels a year



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Sample Savings w/ RRC Grant

Propane, 15K mi/yr

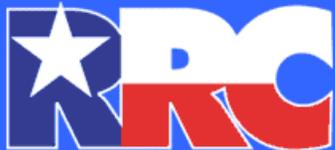
| | |
|-----------------|------------------|
| Purchase | \$95,300 |
| RRC grant | <\$30,700> |
| Fuel (4.4 mpg) | \$ 5,608 |
| Fuel tax credit | <\$ 1,689> |
| Vehicle credit | <\$ 7,000> |
| Maintenance | <\$ 225> |
| Pilferage | <u>N/A</u> |
| TOTAL | \$ 61,294 |

Diesel, 15K mi/yr

| | |
|-----------------|------------------|
| Purchase | \$86,600 |
| RRC grant | N/A |
| Fuel (6 mpg) | \$ 8,700 |
| Fuel tax credit | N/A |
| Vehicle credit | N/A |
| Maintenance | \$ 450 |
| Pilferage | \$ <u>500</u> |
| TOTAL | \$ 96,250 |

FIRST YEAR SAVINGS \$34,956

ANNUAL SAVINGS \$5,506



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PROPANE SCHOOL BUSES

Sample Savings w/o RRC Grant

Propane, 15K mi/yr

| | |
|-----------------|------------------|
| Purchase | \$95,300 |
| Fuel (4.4 mpg) | \$ 5,608 |
| Fuel tax credit | <\$ 1,689> |
| Vehicle credit | <\$ 7,000> |
| Maintenance | <\$ 225> |
| Pilferage | <u>N/A</u> |
| TOTAL | \$ 92,444 |

Diesel, 15K mi/yr

| | |
|-----------------|------------------|
| Purchase | \$86,600 |
| Fuel (6 mpg) | \$ 8,700 |
| Fuel tax credit | N/A |
| Vehicle credit | N/A |
| Maintenance | \$ 450 |
| Pilferage | \$ <u>500</u> |
| TOTAL | \$ 96,250 |

FIRST YEAR SAVINGS \$3,806

ANNUAL SAVINGS \$5,506



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Case in Point: Denton ISD

44 Buses

| | |
|---------------------------|------------------|
| Emissions-Reduction Grant | \$267,309 |
| RRC/SECO Grant | 82,927 |
| Rush Reimbursement | <u>308,000</u> |
| Total | \$658,236 |

“The 50¢ per gallon offered by the **Motor Fuel Tax Credit** and the Propane Vehicle Initiative can provide D.I.S.D. with approximately **\$1.8 million** in funding to augment our current propane program.”

--Gene Holloway, Transportation Director



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PROPANE SCHOOL BUSES

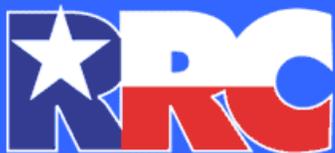
Cleaner Air

Nitrogen oxides (NO_x)
Precursors to smog



**96 percent reduction over 1989
diesel buses**

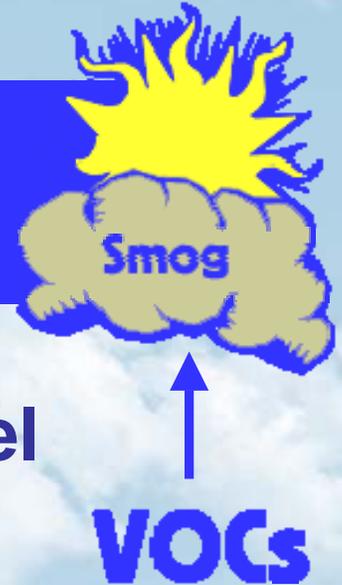
Source: EPA, Mobile 6



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PROPANE SCHOOL BUSES

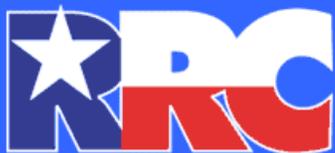
Cleaner Air

Volatile organic compounds (VOCs)
Precursors to smog



93 percent reduction over 1989 diesel buses

Source: EPA, Mobile 6

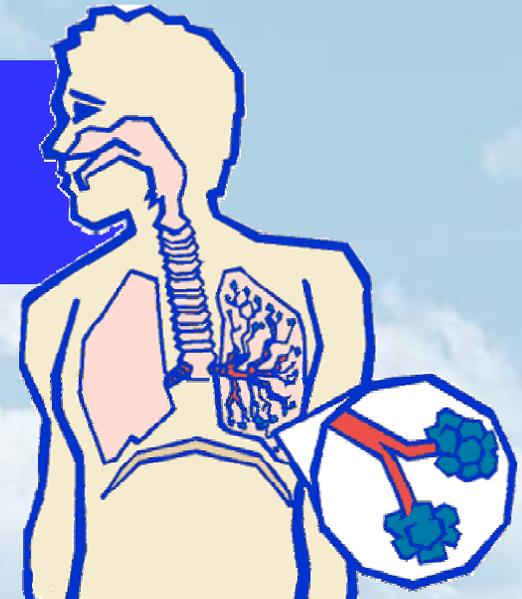


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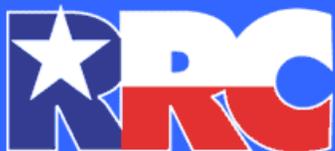
Cleaner Air

Carbon monoxide (CO)
Causes respiratory distress

**83 percent reduction over
1989 diesel buses**



Source: EPA, Mobile 6



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PROPANE SCHOOL BUSES

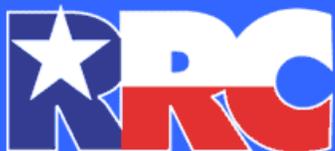
Cleaner Air

Particulate matter (PM)
Particularly harmful to children



**99.99 percent reduction
over 1989 diesel buses**

Source: EPA, Mobile 6

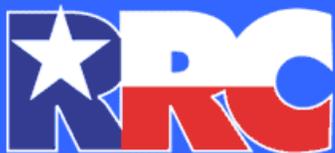


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Grants and Credits

Current state and federal incentives reduce capital and operating costs.

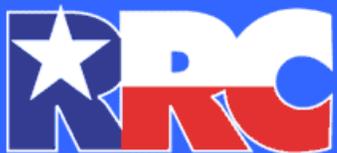
- Railroad Commission Propane Vehicle Initiative
- Federal Alternative Motor Vehicle Tax Credit
- Federal \$0.50/gal. Alternative Motor Fuel Tax Credit
- Federal Refueling Property Tax Credit



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RRC Propane Grants

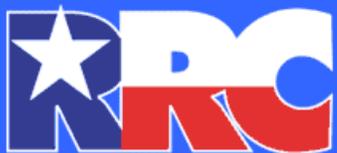
- Administered by RRC's Alternative Fuels Division under grants totaling \$24M from the Texas Commission on Environmental Quality
- State funds—source is Texas Emissions Reduction Plan (TERP)
- Applications are accepted year-round.



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RRC Propane Grants

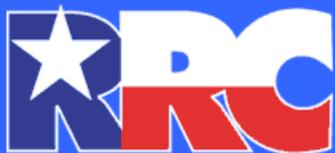
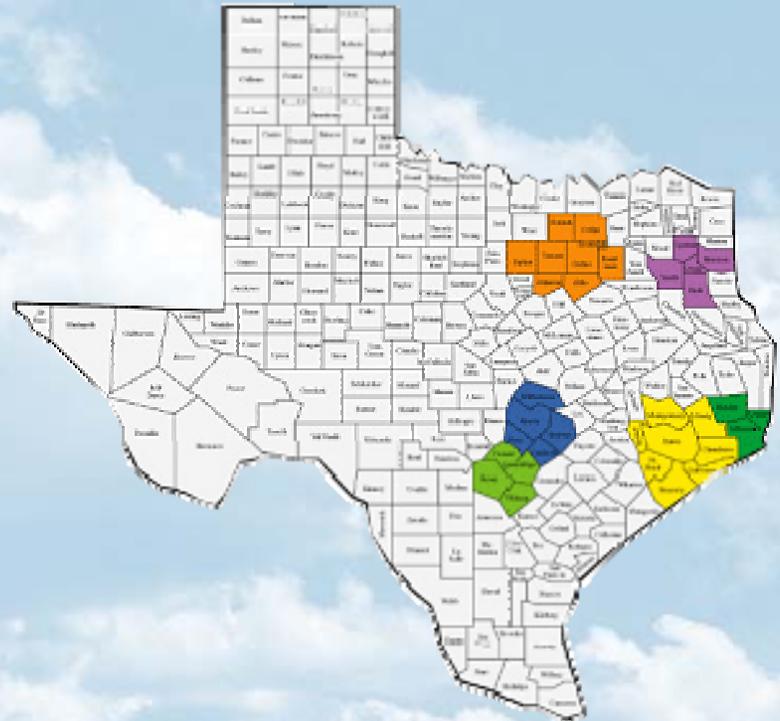
- School districts in 34 counties are TERP-eligible
- Only 8 of these counties currently have propane school buses: Bexar, Brazoria, Dallas, Denton, Harris, Tarrant, Travis, Williamson



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RRC Grants: Eligible Counties

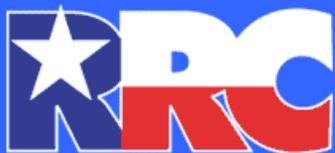
Bastrop • Bexar • Brazoria
Caldwell • Chambers • Collin
Comal • Dallas • Denton • Ellis
Ft. Bend • Galveston • Gregg
Guadalupe • Harris • Hardin
Harrison • Hays • Jefferson
Johnson • Kaufman • Liberty
Montgomery • Orange • Parker
Rockwall • Rusk • Smith
Tarrant • Travis • Upshur
Waller • Williamson • Wilson



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RRC Grants: Eligibility

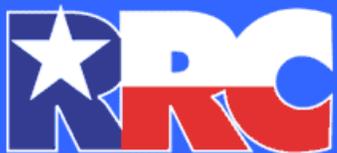
- Replacement buses only—not additions to fleet
- Bus being replaced must be registered and certified operational by a Railroad Commission Category L (propane engine fuel) licensee.
- Old bus must have been owned and operated in Texas for the two years immediately preceding the grant application.
- New bus must be EPA- or CARB-certified to 2008 emission standards.



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RRC Grants: Eligibility

- Old bus must be scrapped.
- New bus must operate for seven years, and only in an eligible county.
- Grant amounts vary according to the fuel (diesel or gasoline), annual mileage, and Gross Vehicle Weight Rating of the old and new buses.
- Remember: RRC and TCEQ are buying emissions reductions.



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RRC Online Grant Estimator

- Go to rrc.state.tx.us
- Click on “Rebates and Incentives”
- Select “School Bus Grant Estimator”
- Choose “Propane Replacing Diesel School Bus” or “Propane Replacing Propane School Bus”
- Select tab for model year of old bus
- Enter miles driven per year



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PROPANE SCHOOL BUSES

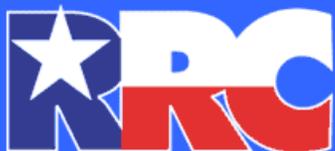
Diesel to Propane School Bus Replacement

Model Year 1989

| | | Diesel Old School Bus | Propane Replacement |
|---|------------|---------------------------------|-------------------------------|
| Enter Miles Driven Per Year | | 15,000 | 15,000 |
| TxLED Correction Factor | | 0.943 | 1 |
| Baseline NOx (g/bhp-hr) | x | 10.7 | 0.2 |
| TXLED Adjusted NOx (g/bhp-hr) | = | 10.0901 | 0.2 |
| Conversion Factor (bhp-hr/mi) | | 2.69 | 2.99 |
| Grams/Ton | div | 907200 | 907200 |
| TX LED Adjusted NOx (tons/mi) | | 0.0000299188 | 0.0000006592 |
| Percentage of time operated in eligible counties | x | 100% | 100% |
| Annual miles per year | x | 15,000 | 15,000 |
| Annual NOx emissions (tons) | = | 0.4487825562 | 0.0098875661 |
| Net annual NOx emissions reductions (tons) | | 0.4388949901 | |
| Percentage reduction | | 98% | |
| % annual NOx reduction must be 25% or greater to proceed | | | |
| Net annual NOx emissions reductions (tons) | | 0.4388949901 | |
| Total Years (Choose 5, 6, or 7 years) | x | 7 | |
| Grant Life NOx emissions reductions (tons) | = | 3.072264931 | |
| Cost effectiveness of \$10,000/ton NOx | x | \$10,000 | |
| Grant amount requested | = | \$30,722.65 | |

**Enter
annual
miles**

**Grant
(est.)**



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Sample Grant Estimates

2009 propane bus replacing . . .

| | | |
|-------------|----------------|-----------------|
| 1989 diesel | 15,000 mi/year | \$30,700 |
| 1989 diesel | 12,000 mi/year | \$24,570 |
| 1989 diesel | 9,000 mi/year | \$18,430 |
| 1993 diesel | 15,000 mi/year | \$14,690 |
| 1998 diesel | 15,000 mi/year | \$12,360 |



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Federal Vehicle Tax Credit

- Alternative fueled vehicles approved and credit amounts set by Internal Revenue Service
- Current propane school bus credit: \$9,760
- Distributor may take the credit if purchaser is tax-exempt
- Distributors taking the credit must disclose the credit amount to the purchaser

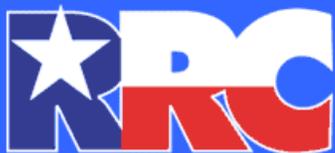


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Federal Vehicle Tax Credit

Rush Bus Centers Reimbursement

- Rush Bus Centers will reimburse school districts \$7,000 for each new Blue Bird propane bus purchased through Rush Bus Centers
- Rush is the first Blue Bird distributor in the U.S. to offer this reimbursement
- Offer available only through Rush
- Offer is good on first 1,000 units sold through Rush Bus Centers
- Offer expires January 31, 2009

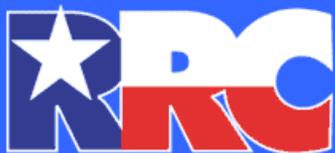
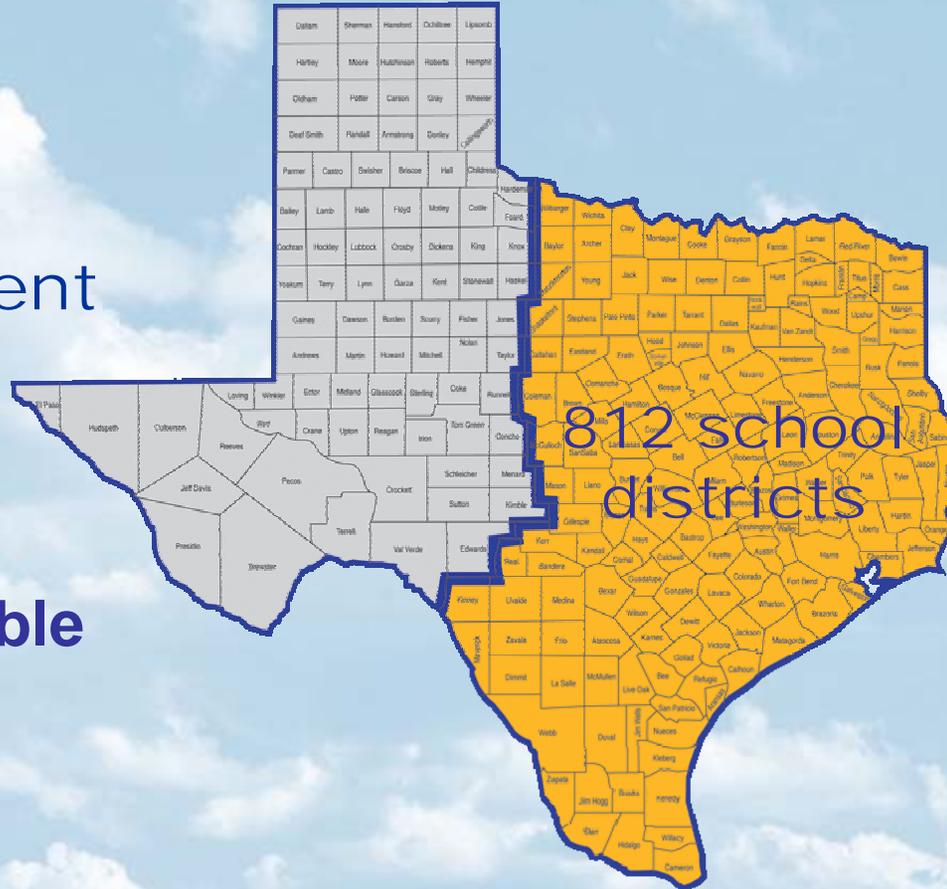


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Federal Vehicle Tax Credit

Rush Bus
Centers
Reimbursement

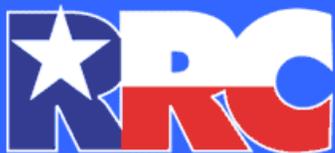
-  Available
-  Not available



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Service and Training

- Service on propane system is by Rush Truck Centers.
- RRC offers free training to school districts on operation and maintenance of propane systems.



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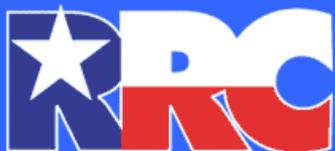
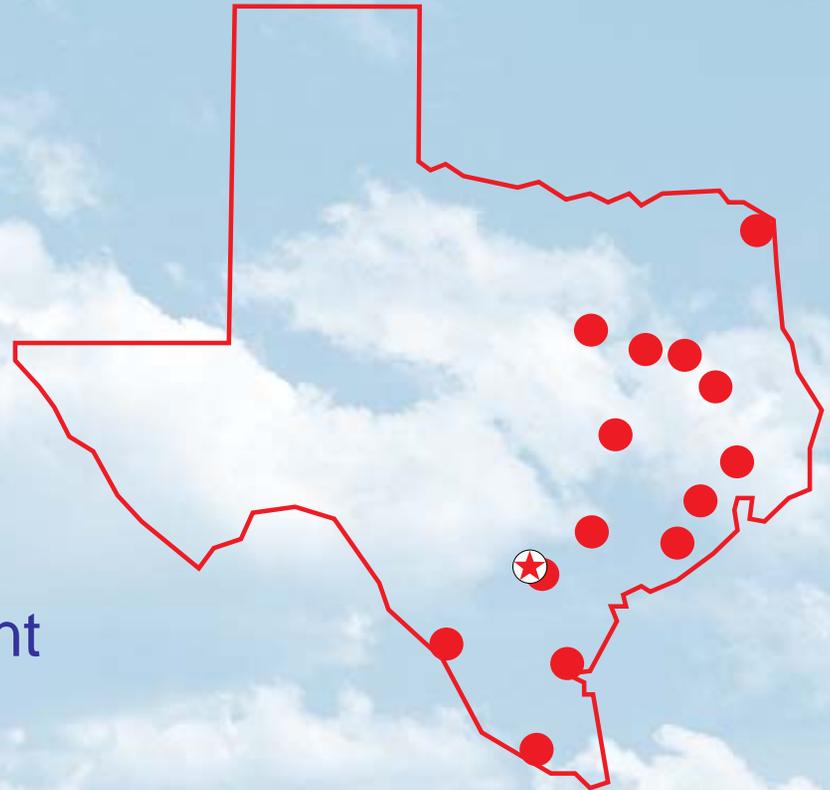
Rush Bus Centers

Largest Blue Bird school bus dealer network in Texas

14 state-of-the-art service facilities

Authorized Blue Bird dealer

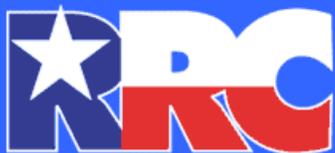
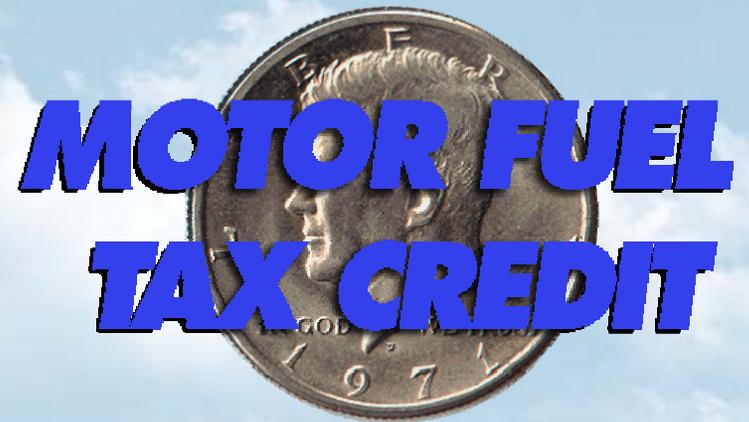
43+ years in commercial transportation and equipment



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50¢/gal. Federal Fuel Tax Credit

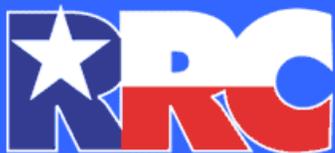
- School districts are eligible
- IRS refunds \$0.50/gallon of propane used in on-road vehicles
- Duration: Oct. 1, 2006 – Sept. 30, 2009
- Congress may extend



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Federal Alternative Refueling Property Tax Credit

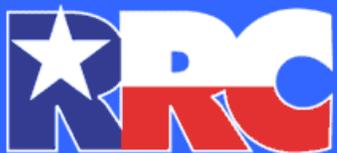
- 30 percent of new propane station cost, up to \$30,000
- For tax-exempt entities, seller may take credit
- Station must be placed in service by Dec. 31, 2009



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RRC Online Grant Estimator

- Go to rrc.state.tx.us
- Click on “Rebates and Incentives”
- Select “Total School Bus Savings Calculator”
- Click tab for “Sample School Bus”
- Fill in blue fields to compare total costs



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SAMPLE SCHOOL BUS COST ANALYSIS

| | Capital Cost | DIESEL/GASOLINE | PROPANE | SAVINGS |
|--|---------------------|------------------------|--------------------|---------------------|
| 1 Purchase Price | | \$86,600.00 | \$95,300.00 | -\$8,700.00 |
| <i>Click on the link below to determine the amount of your federal motor vehicle tax credit.</i> | | | | |
| 2 Federal Alternative Motor Vehicle Tax Credit (propane only) | | | \$7,000.00 | + \$7,000.00 |
| <i>Click on the link below to estimate the amount of your Texas propane equipment grant.</i> | | | | |
| 3 Texas Propane Equipment Incentive Grant amount (propane only) | | | \$30,720.00 | + \$30,720.00 |
| 4 Capital Cost Savings/Difference | | | | \$29,020.00 |
| Operating Cost | | | | |
| 1 Annual miles driven | | 15,000 | 15,000 | |
| 2 Average miles/gallon | | 6.00 | 4.44 | |
| 3 Gallons per year (line 1 divided by line 2) | | 2,500.00 | 3,378.38 | |
| 4 Cost per gallon* | | \$3.48 | \$1.66 | |
| 5 Annual fuel cost (line 3 x line 4) | | \$8,700.00 | \$5,608.11 | = \$3,091.89 |
| 6 Annual federal excise tax rate/gallon | | \$0.00 | \$0.00 | |
| 7 Annual federal excise tax amount (line 6 x line 3) | | \$0.00 | \$0.00 | \$0.00 |
| 8 Annual federal excise tax credit/gal beginning 10/1/06 (propane only) | | | \$0.50/gallon | |
| 9 Annual federal tax credit (line 3 x line 8) | | | \$1,689.19 | + \$1,689.19 |
| 10 Cost of annual maintenance (includes tune-ups, oil, future engine life) | | (\$0.03 per mile) | (\$0.015 per mile) | |
| 11 Annual maintenance (line 2 x line 10) | | \$450.00 | \$225.00 | + \$225.00 |
| 12 Loss from pilferage/theft | | \$500.00 | NONE | + \$500.00 |
| 13 Annual propane state motor fuel tax or decal | | \$0.00 | \$0.00 | - \$0.00 |
| 14 Total Annual Savings | | | | = \$5,506.08 |
| 15 TOTAL First-Year Savings | | | | \$34,526.08 |

Rush

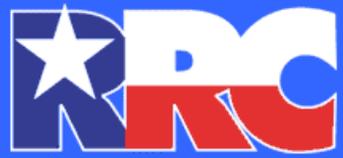
RRC grant

Mi/yr

MPG

Fuel price

Result



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Contacts

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Rush Enterprises

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Pat Wilson, Propane Vehicle Grants Manager

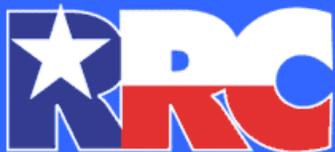
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