



# Alternative Fuels Incentive Grant (AFIG) Opportunity

## Adsorbed natural gas (ANG) vehicle technology

ANG vehicle technology marks the second wave of natural gas vehicles (NVGs). As a Tier 1 and 2 supplier to the global automobile industry for the last 40 years, Ingevity's proprietary wood-based activated carbon technology has been used in vehicles around the world to capture and recover over 8 million gallons of gasoline vapor emissions every day. This same eco-friendly technology has been leveraged to enable the ANG vehicle and fueling solution for light-duty trucks (LDVs).

### "The Turnkey ANG Package"



Activated carbon monoliths that allow low-pressure onboard natural gas fuel storage paired with conventional gasoline (bi-fuel hybrid).



Ford F-series modified by a QVM with original warranty.



Low-pressure fuel storage enables safe, economic fueling of the vehicle.

### Light-duty fleets can benefit from ANG in many ways:

- Requires only an easy-to-install, affordable fueling appliance
- Eliminates the need for a massive CNG fueling station
- Costs less to fuel than gasoline and diesel in the U.S.
- Combats the "range anxiety" associated with electric vehicles
- Has a relatively inexpensive total cost of ownership



ANG reduces fueling tank pressure to 900 psi - compared to CNG at 3,600 psi - enabling the use of a reliable, low-cost and small fueling appliance that offers optimal fueling convenience, accessibility and fleet productivity. Installation is possible via an existing commercial or office parking lot, vehicle yard, or wherever is most efficient for fueling.



Fleets around the country continue to experience ANG technology's ability to maximize the use of natural gas, a lower cost, cleaner and domestically abundant transportation fuel.



ANG enables fleets to realize the economic benefits of natural gas and opens a pathway to maximize corporate sustainability objectives, showing greenhouse gas emission reductions of 20% with natural gas and 84%-129% with renewable natural gas.

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Ingevity is working with several Pennsylvania-based entities - including Peoples Gas, Eastern Pennsylvania Alliance for Clean Transportation (EP-ACT), and Pittsburgh Regional Clean Cities - for interested fleets to take advantage of ANG for LDVs by participating in the Pennsylvania Department of Environmental Protection's Alternative Fuels Incentive Grant (AFIG) program. If awarded based on prior year AFIG guidelines, the grant will reduce the incremental cost of the ANG package to approximately \$7,500, resulting in the potential for a 3-year or less return on investment.



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