



## 2004 Product Portfolio

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Alternative Fuel Vehicles  
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## Clean Burning Alternatives



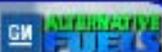
## Alternative Fuels

- Ethanol (E85)
- Compressed Natural Gas (CNG)



## Ethanol (E85)

- Reduces fossil energy use and greenhouse gasses
  - Made from renewable, agricultural starch crops
- Can be stored in an above-ground tank



## Natural Gas (CNG)

- Domestic and readily available
- Produces little or no evaporative emissions



## Save Money in Fleet Operations

**AFVs Make Economic Sense** 

- Low Fuel Cost
- Reduced Maintenance
- AFV Funding Opportunities



**Meet Government Mandates**

**Meet Government Mandates** 

- Energy Security
- Air Quality

**Fulfill EPA Act & Clean Air Act Mandates** 

<u>EPA Act</u>	<u>Clean Air Act</u>
-Decrease dependence on foreign oil	-Improve air quality in non-attainment areas
-Mandates Federal & State Government and Fuel Provider Fleets	-Mandates Federal, State, Municipal, Fuel Provider, and Private Fleets
-Nationwide Program	-Regional Program
-75-90% of new vehicles must be AFVs	-70% of new vehicles must be LEVs



**GM Durability and Reliability**

**GM AFV Product Offerings** 

- Ethanol (E85) Flexible Fuel Program
- CNG Bi-Fuel and Dedicated Program

### E85 Flexible Fuel Chevy Silverado GMC Sierra

Labels in diagram:  
 Tank Underbody  
 Gasoline and Alcohol Compatible Fuel Line to Engine  
 Gasoline and Alcohol Compatible Fuel Injectors and Engine Components  
 Fuel Tank  
 Fuel Composition Sensor  
 Fuel Line to Engine through Fuel Sensor

### E85 Flexible Fuel Chevy Silverado GMC Sierra

- 1500 series, Vortec 5300 engine
- 2WD or 4x4  
(Manual Transfer Case available Fall 2003)
- Regular cab, short or long box  
Extended cab, short box
- N/A in NY, MA, ME, CA, VT
- CFF LEV certified

### E85 Flexible Fuel Chevy Tahoe/Suburban GMC Yukon/Yukon XL

Labels in diagram:  
 Fuel Composition Sensor  
 Fuel Tank  
 Fuel Line to Engine through Fuel Sensor  
 Tank Underbody  
 Gasoline and Alcohol Compatible Fuel line to Engine  
 Gaseous Fuel Injectors  
 Gasoline and Alcohol Compatible Fuel Injectors and Engine Components

### E85 Flexible Fuel Chevy Tahoe/Suburban GMC Yukon/Yukon XL

- 1500 series
- Vortec 5300 engine
- FFV standard equipment
- N/A in MA, ME, NY, CA, VT
- CFF LEV certified

### CNG Bi-Fuel & Dedicated Chevy Silverado GMC Sierra

Labels in diagram:  
 CNG Tank in Bed  
 Intermediate Pressure Regulator  
 Gaseous Fuel Injectors  
 Fuel Line to Engine  
 Gasoline Fuel Tank (Bi-Fuel Only)  
 CNG ECU  
 Fuel Fill Receptacle  
 High Pressure Regulator  
 Fuel Line to Engine  
 Molded Plastic Cover  
 CNG Tank in Bed with Solenoid Lock-Off

### CNG Bi-Fuel & Dedicated Chevy Silverado GMC Sierra

- 2500 series, Vortec 6000 engine
- Regular, extended, and crew cab
- 2WD or 4x4
- 8500 or 9200 lbs. GVWR
- 20 gge CNG tank
- Accurate fuel gauges

**CNG Bi-Fuel & Dedicated** 

**Chevy Silverado  
GMC Sierra**



<u>Emissions</u>	<u>Fuel System</u>	<u>Fuel Type</u>	<u>Certification Level</u>
California	Bi-Fuel	CNG	ULEV
		Gasoline	ULEV
	Dedicated	CNG	ULEV
Federal	Bi-Fuel	CNG	ULEV
		Gasoline	LEV
	Dedicated	CNG	ULEV

**CNG Bi-Fuel & Dedicated** 

**Chevy Silverado  
GMC Sierra**

**Exclusive Pickup Bed Delete**



- 2500 series, Vortec 6000 engine
  - Regular cab
    - 2WD or 4x4
    - 8500 or 9200 lbs. GVWR
  - Crew cab
    - 4x4
    - 9200 lbs. GVWR
- 20 gge CNG tank mounted to frame rails

**CNG Bi-Fuel & Dedicated** 

**Chevy Silverado  
GMC Sierra**

**Exclusive Pickup Bed Delete**  
9200 lbs. GVWR\*



<u>Emissions</u>	<u>Fuel System</u>	<u>Fuel Type</u>	<u>Certification Level</u>
California	Bi-Fuel	CNG/Gasoline	ULEV
	Dedicated	CNG	LEV II ULEV
Federal	Bi-Fuel	CNG/Gasoline	ULEV
	Dedicated	CNG	ULEV Federal 04 Option 1

\* 8500 lbs. GVWR emissions are the same as the pickup with a pickup bed

**CNG Bi-Fuel & Dedicated** 

**Chevy Express  
GMC Savana**



- Vortec 6000 engine
- 8500 or 9600 lbs. GVWR
- Cargo or Passenger
- 8 or 12 passenger seating
- 135 or 155 inch wheel base
- 20.3 gge dedicated CNG capacity, 11.2 gge bi-fuel CNG capacity



Labels in diagram: High Pressure Regulator, Fuel Supply Line, Fuel Lock-Off, Lock-Off Relay, Midship Tank Shield, Solenoid Tank Valves, Fuel Fill, Midship CNG Tank (Dedicated Only), AFT-Axle CNG Tank.

**CNG Bi-Fuel & Dedicated** 

**Chevy Express  
GMC Savana**

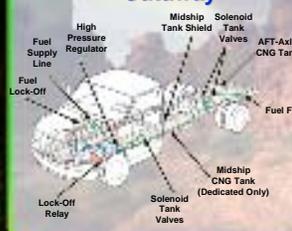


<u>Emissions</u>	<u>Fuel System</u>	<u>Fuel Type</u>	<u>Certification Level</u>
California	Bi-Fuel	CNG/Gasoline	LEV II ULEV
	Dedicated	CNG	LEV II ULEV
Federal	Bi-Fuel	CNG/Gasoline	Tier 2 Bin 10
	Dedicated	CNG	Tier 2 Bin 8

**CNG Bi-Fuel & Dedicated** 

**Chevy Express  
GMC Savana**

**Cutaway**

Labels in diagram: High Pressure Regulator, Fuel Supply Line, Fuel Lock-Off, Lock-Off Relay, Midship Tank Shield, Solenoid Tank Valves, Fuel Fill, Midship CNG Tank (Dedicated Only), AFT-Axle CNG Tank.

- Vortec 6000
- 12,000 or 12,300 GVWR
- 139 or 159 inch wheel base
- 29.7 gge dedicated CNG capacity, 20.6 gge bi-fuel CNG capacity

### CNG Bi-Fuel & Dedicated

**Chevy Express  
GMC Savana  
Cutaway**



Emissions	Fuel System	Fuel Type	Certification Level
California	Bi-Fuel	CNG/Gasoline	05 ULEV
	Dedicated	CNG	05 ULEV
Federal	Bi-Fuel	CNG/Gasoline	ULEV EPA 05 Option 3
	Dedicated	CNG	ULEV EPA 05 Option 3

### CNG Bi-Fuel Chevy Cavalier




Labels in diagram:  
 - CNG Tank in Trunk with Solenoid Lock-Off  
 - Fuel Receptacle Door  
 - Fuel Line to Engine  
 - Coalescing Filter  
 - High Pressure Regulator  
 - CNG Tank in Trunk  
 - Gaseous Fuel Compatible Engine  
 - Fuel Line to Engine  
 - CNG Injection Driver Module  
 - CNG Fuel Rail  
 - IPRL/PL

### CNG Bi-Fuel Chevy Cavalier



- 2.2L Ecotech engine
- 6.2 gge CNG capacity
- LEV California Emissions  
Tier 2, Bin 8 Federal Emissions

### Introducing FlexPower

**Chevy Silverado  
GMC Sierra**



- Hybrid electric extended cab / short box fullsize pickup
- Features the same performance as the conventional 5300 Vortec V-8
- 120 Volt, 20 amp Electrical System
  - Four Auxiliary Power Outlets
- 10 to 15% improvement in fuel economy
- Reduced CO<sub>2</sub> emissions
  - 50 State Bin 8 SULEV 1 Emission Certification

### Introducing FlexPower

**Chevy Silverado  
GMC Sierra**



Labels in diagram:  
 - 120 Volt, 20 amp Electrical System  
 - 4 Auxiliary Power Outlets  
 - Energy Storage Module  
 - 2000 Watt Generator  
 - 2000 Watt Inverter  
 - 12 Volt Battery

### B5 Biodiesel Duramax

- New for 2004MY
  - Not retroactive to previous model years
- Available with:
  - Chevy Silverado 2500 HD and 3500 series
  - GMC Sierra 2500 HD and 3500 series
  - Chevy & GMC 560 series
    - 16,000 – 26,000 lbs. GVWR

**LEV Gasoline Vehicles** 

- **LEV emission certification**
- **Wide vehicle availability**

visit [www.gmaltfuel.com](http://www.gmaltfuel.com) for a complete listing of LEV vehicles

**GM Certified AFV Dealer Network** 

- **166 Certified AFV Dealers**
  - Capable of ordering CNG products
  - Required to purchase service tools and train at least one technician
- **225 salespeople have attended AFV training**
- **Recruitment will continue in areas with CNG vehicles in operation**

visit [www.gmaltfuel.com](http://www.gmaltfuel.com) for a complete listing of Certified AFV Dealers



**For more information,  
please contact:  
GM Alternative Fuel Vehicles at  
1-888-GM-AFV-4-U  
Or visit our web site at  
[www.gmaltfuel.com](http://www.gmaltfuel.com)**