Compressed Air Vehicles

The future of Transportation
Brief History
At the end of the 19th century the first approximations to what could one day become a compressed air driven vehicle already existed, through the arrival of the first pneumatic locomotives. Yet even two centuries before that Dennis Papin came up with the idea of using compressed air (Royal Society London, 1687).

The first recorded compressed-air vehicle in France was built by the Frenchmen Andraud and Tessie of Motay in 1838. A car was tested in 1840, and worked well, but the idea was not pursued further.

For the complete history, go here:
http://www.theaircar.com/acf/air-cars/compressed-air-history.html
Advantages of All Compressed Air Vehicles

1. The costs involved to compress the air to be used in a vehicle are inferior to the costs involved to fuel a normal combustion engine.
2. Air is abundant, economical, transportable, storable and, most importantly, nonpolluting.
3. The technology involved with compressed air reduces the production costs of vehicles by 20% because it is not necessary to assemble a refrigeration system, a fuel tank, spark plugs or silencers.
4. Air itself is not flammable
5. The mechanical design of the motor is simple and robust
6. It does not suffer from corrosion damage resulting from the battery.
7. Less manufacturing and maintenance costs.
8. The tanks used in an air compressed motor can be discarded or recycled with less contamination than batteries.
9. The tanks used in a compressed air motor have a longer lifespan in comparison with batteries, which, after a while suffer from a reduction in performance.
10. Some of the air used is returned to the air tank.
MDI’s (Motor Development International) **MiniC.A.T** with **Tata**, India’s largest automotive manufacturer:

1. Its mileage is about double that of the most advanced and current electrical car.
2. The car has a top speed of 68 mph.
3. Once the market develops, refilling will take 2-3 minutes and cost only $2.00 to fill the cars carbon fiber tanks with 340 liters of air at 4350psi. It will then be ready to go another 124-186 miles.
4. As a viable alternative, the car carries a small compressor which can be connected to the electrical grid and refill the tank in 3-4 hours.
5. Due to the absence of combustion and, consequently, of residues, changing the oil (1 liter of vegetable oil) is necessary only every 31,000 miles.
6. The temperature of the clean air expelled by the exhaust pipe is between 0 - 15 degrees below zero, the air conditioning system makes use of the expelled cold air with no use of freon.
7. The final selling price will be approximately 10,900 USD.

http://www.gizmag.com/go/7000/
http://www.theaircar.com/acf/
MDI’s CityCAT

No of Seats 6
Weight 1874 lbs
Engine 6cyl.
Power 75 CV (75 HP)
Max. Speed 96 mph
Urban Range (Zero Pollution) 37 miles
Co2 Emission in Urban Use 0 g/mile
Non-Urban Range 800-1000 miles
Non-Urban fuel efficiency 106 mpg*
Co2 Emission in Non-Urban Use 72 g/mile
Price (depending of options) $18,000 to $20,000

Body is made with fiberglass and injected foam, which is safer, easier to repair, and does not rust.
Chassis is made with aluminum rods, glued together like an aircraft.
Transmission: The horizontally opposed engine is rear-mounted, driving the rear wheels (to eliminate friction losses caused by transmitting power to steered wheels) via a multi-function “moto-alternator” and a gearbox needing only two or three ratios.

*When the energy used to heat compressed air entering the engine is accounted for, and average driving speeds factored, the average economy is expected to be 106 gasoline-equivalent mpg
MDI’s Standard Compressed Air piston Engine
Engineair Rotary Air Engine
Inventor: Angelo Dipietro


OTHER AIR ENGINES CORPORATIONS (NOT SHOWN)

Energine
EngineAir
K'Airmobiles
Quasiturbine
Regusci
Diagram Explained:
Mode A: Operating with compressed air from Air Tank only 1. in town under 35 mph.
Mode B: Operating with compressed air from Air Tank only 1. which is being heated 2. to expand volume before entering engine.
Mode C: Operating with air from the Intake 3. which is being heated 2. to expand volume before entering engine - on highway over 35 mph.
Mode D: Operating as in Mode C but also refilling 4. Air Tank while running.
**Zero Pollution Motors (ZPM) Emissions for Compressed Air Engine (CAE)**

**Parked:** It automatically shuts down the engine when the car is stationary.

**At Lower Speeds:** Since the Compressed Air Vehicle is running exclusively on compressed air, it emits only air - **zero pollution**. The air expelled from the tail pipe is actually cleaner than the air used to fill the tank. This is because before compression, the air is run through carbon filters to eliminate dirt, dust, humidity, and other urban air impurities that could hamper the engine’s performance.

**At Higher Speeds:** At speeds over 35mph the Compressed Air Vehicle uses small amounts of fuel—either gasoline, propane, ethanol or bio fuels—to heat air inside a heating chamber as it enters the engine (again, to expand volume before entering engine). This process produces emissions of only 0.141lbs of CO2 per mile. That is up to 4 times less than the average vehicle and more than two times less than the cleanest vehicle available today. (Toyota Prius 07 Emissions: 0.34 lbs of CO2 per mile. Source: www.hybridcars.com)
The Air Car will follow the same safety rules and regulations of all approved cars driven in the Unites States. The car’s tubular body provides increased resistance in the event of a crash. The air tank(s), located under the floor, is carbon fiber with a thermoplastic lining. If damaged upon impact, it cracks and the air simply escapes without any explosion, as there is no metal. Aerospace giant Air Bus industries will manufacture the tanks for MDI. The Air Car comes equipped with Air Bags and ABS braking.
In the 80’s, he worked on airplane engines and then moved on to Formula 1 racing cars. There, with the prize awarded by IFEP (French Petroleum Institute), he developed a revolutionary 12-cylinder W-configuration rotating-valve engine for racing cars. In 1991 MDI was started.

http://www.zevcat.com/media/MDI_History.pdf
WHEN?

6,000 zero-emissions Air Cars were scheduled to hit Indian streets in August of 2008. MDI has signed deals to bring its design to 12 more countries, including Germany, Israel and South Africa.

ZPM will begin taking reservations in mid-2009 for US deliveries of compressed air vehicle in 2010.

HOW DO I GET ONE?

http://zeropollutionmotors.us/

Or


My comments:

In my opinion, people will still need a secondary mode of transportation for hauling loads etc. until further technological development. This car can be used for most of your needs. I plan to buy one as soon as they are available.
WEBSITES

http://www.guynegre.net/

http://www.zevcat.com/media/MDI_History.pdf

http://www.theaircar.com/acf/

http://www.gizmag.com/go/7000/


http://zeropollutionmotors.us/


http://www.metacafe.com/watch/1248351/car_runs_on_compressed_air/