



# COMPRESSED AIR CAR CONVERSIONS

Charlie Madden

# There is a move to ban internal combustion engined cars in 9 to 14 years time to cut greenhouse gases:

[California Aims to Ban Internal Combustion Engines by 2030](http://www.thetruthaboutcars.com/.../california-air-resources-board-automaker...)

[www.thetruthaboutcars.com/.../california-air-resources-board-automaker...](http://www.thetruthaboutcars.com/.../california-air-resources-board-automaker...)

Aug 11, 2015 - The state aims to cut greenhouse gases by 80 percent in 2050 by cutting out new car sales with **internal combustion engines** by 2030.

# AND MORE

[Holland Wants To Ban Gas Cars By 2025 | News, Report | Digital Trends](#)

[www.digitaltrends.com](http://www.digitaltrends.com) › Cars

Mar 31, 2016 - Investing in self-driving cars seems like a given, but the motion to **ban** the **internal combustion engine** once and for all has drawn criticism from ...

[Norway To Ban Sales Of Petrol And Diesel Cars By 2025? - Carscoops](#)

[www.carscoops.com/2016/06/norway-to-ban-sales-of-petrol-and.html](http://www.carscoops.com/2016/06/norway-to-ban-sales-of-petrol-and.html)

Jun 4, 2016 - The war on **internal combustion engines** is getting close, as Norway is allegedly planning to **ban** sales of fuel cars by 2025.

# Alternatives

While electric cars are wonderful, they are still expensive and once their limited life batteries have died – they have to be recycled carefully.

Carbon fibre flywheels have been mooted to store energy in – gyroscopic forces on corners & bumps? Safety against bursting?

# Why compressed air?

Air is obviously freely available.

The use of compressed air has a long history from garages & factories to dentists' drills.

Compressors are easy to find.

Compressed air cylinders from heavy factory ones – to light weight carbon fibre scuba ones are available.

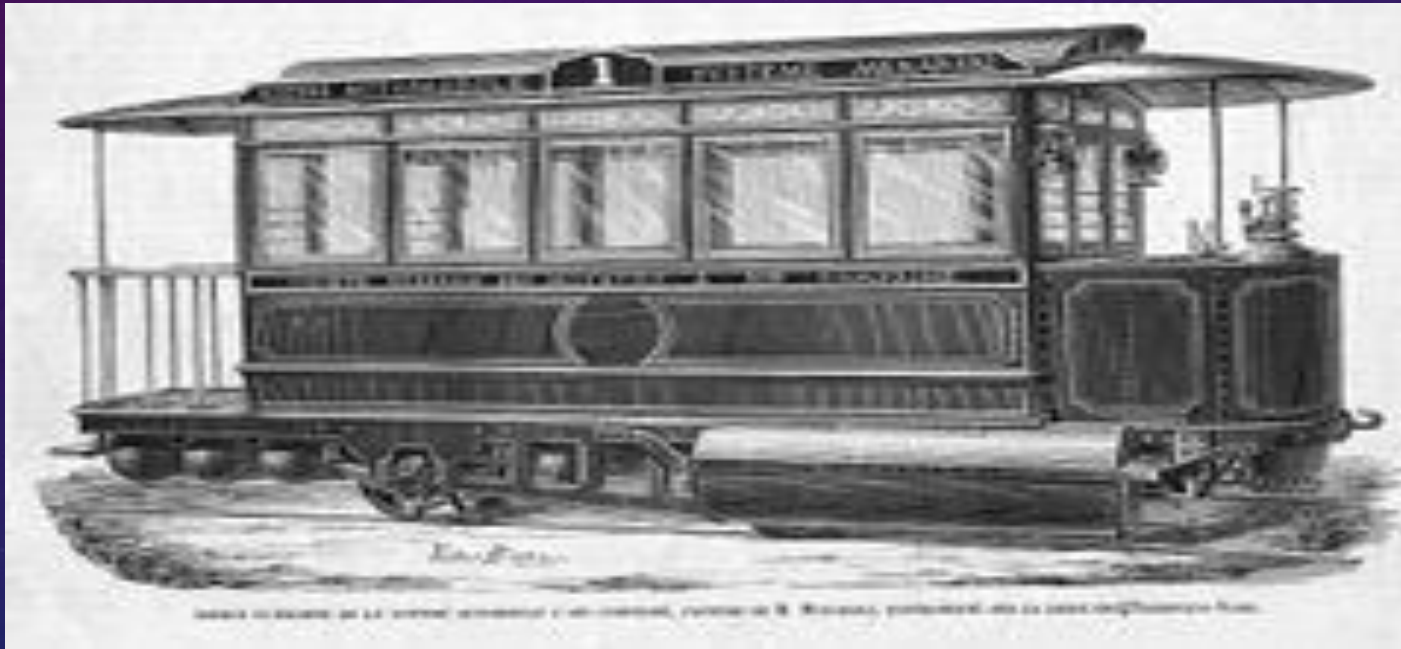
If operated within the fatigue limit of the cylinder material – they should last in principle forever, if bearings etc are changed occasionally.

Examples of compressed air vehicles follow.

# Examples – A compressed air train



# A compressed air tram



# Torpedoes

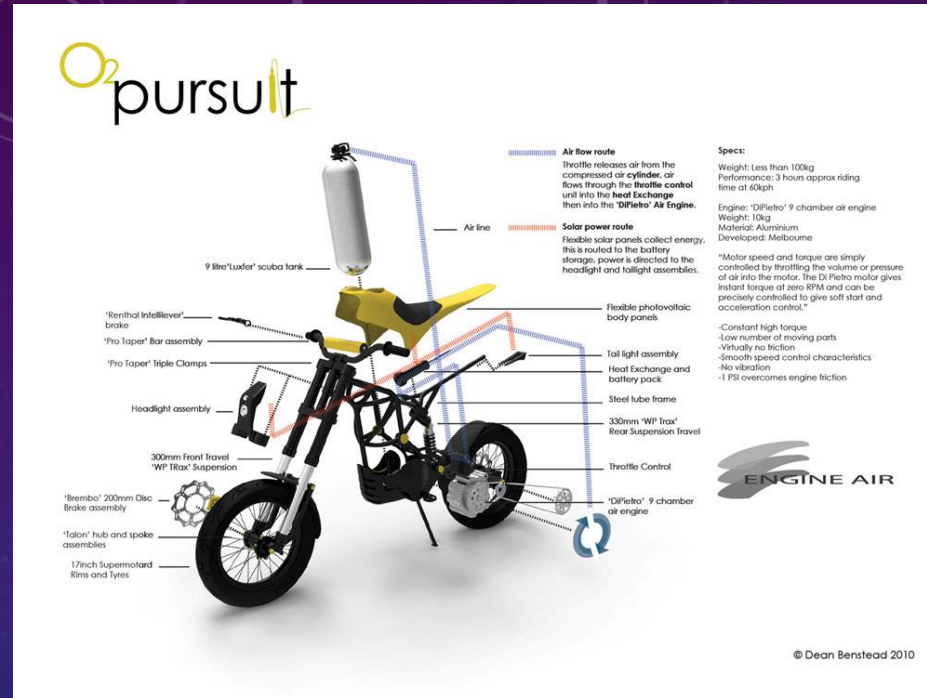
## Compressed air

The Whitehead torpedo of 1866, the first successful self-propelled torpedo, used compressed air as its energy source. The air was stored at pressures of up to 2.55 MPa (370 psi) and fed to a piston engine that turned a single propeller at about 100 rpm. It could travel about 180 metres (200 yd) at an average speed of 6.5 knots (12.0 km/h). The speed and range of later models was improved by increasing the pressure of the stored air. In 1906 Whitehead built torpedoes that could cover nearly 1,000 metres (1,100 yd) at an average speed of 35 knots (65 km/h).

# AIR TRIALS BIKE



- *Photo: James Dyson Award/O2 Pursuit*
- The O2 Pursuit, a project from an engineering school graduate in Australia, runs off compressed air stored in an on-board tank. Dean Benstead's project began with an air motor around which he built a dirt bike. He started with a Yamaha WR250R frame, and added a scuba-diving tank and an Engineair motor to power the rear wheel.



FILLING UP WITH AIR TAKES TWO MINUTES

100 KM RANGE AND 140 KPH TOP SPEED.



## PORTER COMPRESSED AIR LOCOMOTIVE USED AT THE HOMESTAKE MINE, 1928-1961

Porter went on to build over 400 compressed air locomotives for use in mines, plants, and the street railways of new orleans.

- Compressed air cars are powered by motors driven by compressed air, which is stored in a tank at high pressure such as 30 MPa (4500 psi or 310 bar). Rather than driving engine pistons with an ignited fuel-air mixture, *compressed air cars* use the expansion of compressed air, in a similar manner to the expansion of steam in a steam engine.
- There have been prototype cars since the 1920s, with compressed air also used in torpedo propulsion.

# Compressed air car



Compressed air car – 500 miles at 35 miles an hour  
with 4 compressed air cylinders

# A COMPRESSED AIR POWERED BIKE



A fleet of perfectly good cars already exists whose only downside is their emissions.

- I suggest air powered conversions of standard cars be developed. 4 strokes converted to 2 stroke by changing their camshafts can be run as an air-motor on compressed air.
- Then slave compressed air cylinders at home be charged by a compressor powered by solar or wind power.
- Their compressed air will be transferred in minutes to carbon fibre scuba tanks in the car.

If there is anybody or any company local to Adelaide or elsewhere, who might like to partner with me in this opportunity via email/ Skype, please contact me on [charlie.madden@internode.on.net](mailto:charlie.madden@internode.on.net).

Regards

Charlie

Sir Charlie Madden Bt

BSc MTech MBA