

Market Development

Fichtel Sachs Wankel engine used in snowmobile, but was underpowered and unreliable.

OMC develops a snowmobile Wankel engine. Used as a test product in anticipation of stricter marine emission standards.

Mazda develops Wankel auto engine but poor fuel economy and energy crisis limit future to sports car.

Snowmobile market plateaus, OMC exits market despite their reliable Wankel engine.

John Deere purchases Curtiss Wright Wankel assets, but aero-design market costs limit market opportunity.

Stricter pollution standards do not materialize and OMC offers orphan Wankel engine assets for sale.

New federal standards set for industrial and auto engines emissions. Full impact not expected until 2000.

Ultra-low emissions standards are set for CA. Rotapower® engine demonstrates ability to meet these extreme standards in hybrid car without catalytic converter.

Two stroke engines continue to be outlawed in many parts of the world. CARB and EPA mandate emission limits for marine market.

Snowmobiles are banned in all National Parks due to CO emissions.

Hand-held power tool market comes under attack due to emissions.

Trucking industry mandated to eliminate truck idling for auxiliary power.

Hybrid car provides ideal candidate to showcase Rotapower® engine.

Receives numerous requests from Hybrid car industry for Rotapower® engines – Letters of Intent total now exceeds 3,500,000 engines.

Rotapower® Engine Development

P. Moller begins discussions with Curtiss Wright and initiates Aero program at UC Davis w/ Wankel engine test lab.

Moller forms MI Research company to develop Wankel powered personal commuter aircraft.

Fichtel Sachs Wankel engine used in XM-4 (M200X predecessor) but was underpowered.

Purchases OMC Wankel snowmobile engine production technology, engineering time, and hardware.

Modified version of OMC engine powers M200X (Neuera) in flight before International press.

Develops a twin rotor (1600cc/2-rotor) engine for GE to be produced by Infinite Engine Co. for UAV applications.

Develops prototype, 1060cc twin rotor, liquid cooled engine. Receives patent for lubrication-less coating.

Acquires the assets of Infinite Engine Co. (NASDAQ listed company). Assets include OMC liquid cooled rotary engine marine technology licensed from OMC.

Rotapower® engine demonstrates ability to operate on alcohol, diesel, and natural gas. Additional key technologies are patented.

Freedom Motors is spun off as independent company with license to manufacture and distribute Rotapower® engines for all applications except aircraft and ducted fans.

Develops 27cc Rotapower® engine for power tool market under contract from Techtronics.

Develops 150cc Rotapower® engine under contract from Thermofan. Demonstrates and has patents in progress for compound version of Rotapower® engine.

Develops improved rotor cooling to allow air-only charge cooling. Makes direct fuel injection possible.

ROTAPOWER® engines can:

- Replace most engines worldwide
- Become the engine of choice for hybrid cars
- Effectively competes with the 4 stroke piston engine in markets like auxiliary power units (APU) where weight, size and multi-fuel capability are important