



### BACKGROUND

The demand for logistics and operational transport continues to increase to meet the requirements of a growing and more mobile society. Ripl's Rotary Internal Combustion Engine will deliver improvements in power, efficiency, and noise output to meet the requirements of transport sectors where weight must be kept to a minimum (eg marine & aviation) and will support NET ZERO objectives. Whilst weight and infrastructure challenges will limit effective adoption of EV solutions in these industries for the foreseeable future, Ripl's multi-fuel Rotary ICE can alter the volumes of both the compressed fuel-air mix and power stroke, enabling maximum energy extraction from the fuel whilst reducing waste emissions and acoustic disturbance.



The perfect rotary engine has long been the holy-grail of engineers. Ripl has it.

### ATTRIBUTES

- Only 4 moving parts, scalable form factor
- 4x power to weight over piston engine
- Minimal maintenance, lubrication oil, and seals required
- Relative efficiency improvement over piston engine of 40.1%
- 1kg of engine weight will return 9.8kw of power generation @3,000rpm
- Variable ratios of fuel/air volume to compression volume to power stroke volume
- Constant power delivery throughout engine cycle with no torque vibration
- Multi-fuel combustion including green hydrogen

### APPROACH

- **A novel** and simple improvement to rotary engine design
- **Few moving** parts with minimal requirement for contact between components
- **All components** rotate around their centre of gravity for low vibration and maximum efficiency
- **Removes oil** in fuel lubrication requirement with few high-pressure differential seals
- **Optimally efficient** engine delivering both rev/ high power capability and low rev/ high torque bridging the gap between standard internal combustion and jet engine performance

### NEED

- **Transformative improvement** in combustion engine efficiency
- **Reliable and efficient propulsion** required for heavy and remote transportation application
- **Reduced carbon output** to support NET ZERO objectives
- **Low Maintenance** schedule for persistent through-life operations
- **Highly affordable** through-life costs
- **Multi-speed drive** output into planetary drive gearbox configuration