

Polestar 5 - Thermal System Development

Case Study Overview

Polestar, a vehicle manufacturing company based in Sweden with R&D offices in the UK including at MIRA Technology Park, is developing next generation EVs.

Polestar needed to develop and prove their Vehicle Thermal Management System performance under different operating conditions (airflow, temperature and humidity).

HORIBA MIRA's vehicle thermal energy optimisation suite (VTEOS) offered Polestar a key opportunity to address these key parameters early in the development cycle, reducing overall cost and risk of failure.

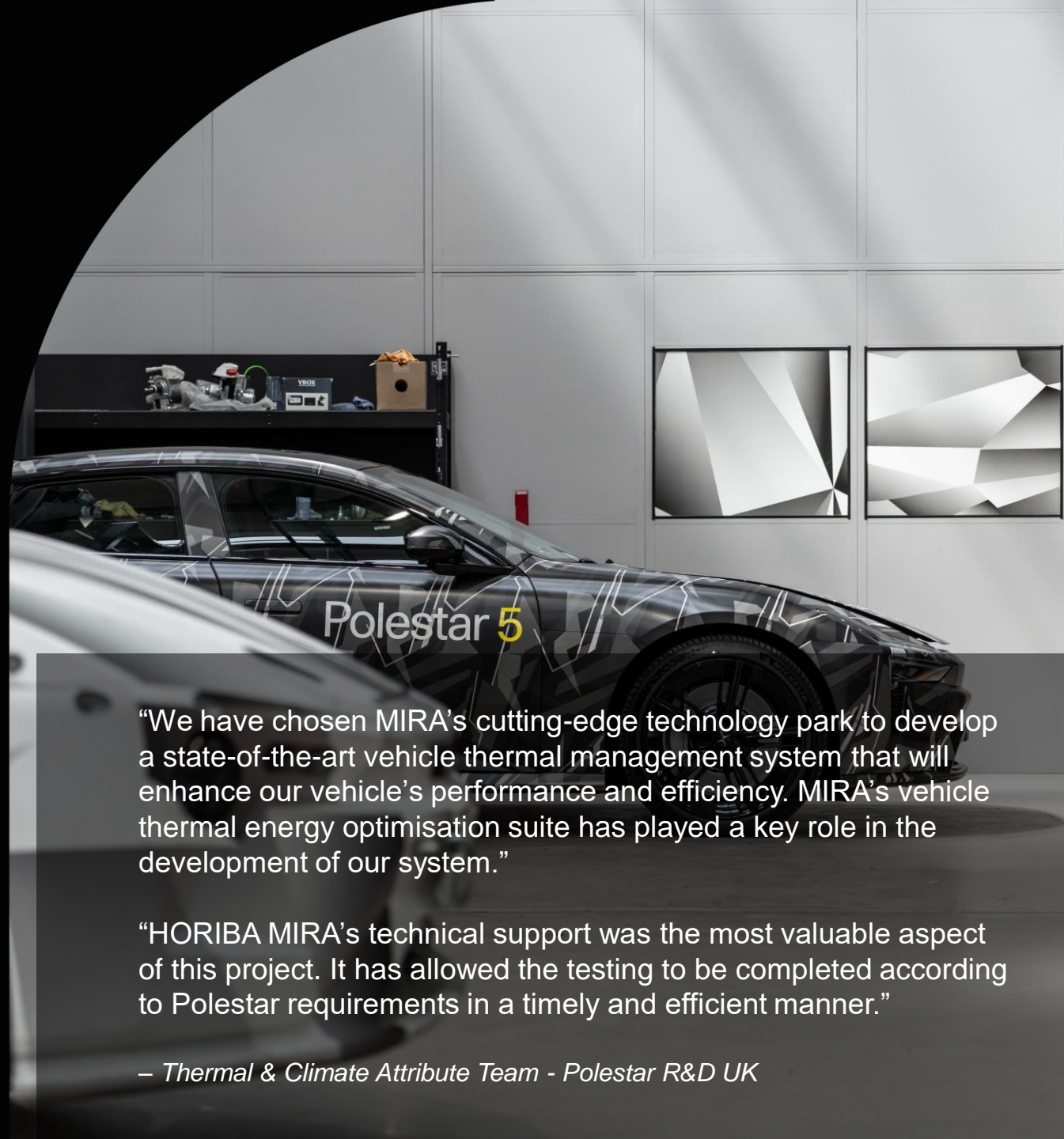
Successes and Benefits

Polestar were able to assess the following key system parameters:

- Access to critical data 12+ months in advance of physical prototype availability
- Significant cost saving versus traditional CWT vehicle level testing (>20 days)
- Reduced the risk associated eCompressor warranty issues through 'oil in circulation' analysis, enabled by easy instrumentation access.

Key parameters assessed

- Cold and hot performance
- Refrigerant charge determination
- OCR and oil retention (critical for in service failures and component warranty)



“We have chosen MIRA’s cutting-edge technology park to develop a state-of-the-art vehicle thermal management system that will enhance our vehicle’s performance and efficiency. MIRA’s vehicle thermal energy optimisation suite has played a key role in the development of our system.”

“HORIBA MIRA’s technical support was the most valuable aspect of this project. It has allowed the testing to be completed according to Polestar requirements in a timely and efficient manner.”

– Thermal & Climate Attribute Team - Polestar R&D UK