VENDIGITAL
A Siemens Business

Supporting the client to achieve operational readiness for their new production facility, focused on manufacturing cathode active products for the EV sector

JM Johnson Matthey
Inspiring science, enhancing life

Johnson Matthey is a leading FTSE 250 company specialising in sustainable technologies for the automotive, energy and chemicals sectors.

OVERVIEW

£16bn	Revenue business
£500m	Capital budget
10,000	Tonnes of cathode materials
270	Novelty risks identified
19	High risks identified relating to equipment and process design

THE CHALLENGE

Johnson Matthey (JM) invested substantially in the building and operating of a cathode active materials manufacturing plant in Europe, with the objective of delivering high performing products to Li-Ion cell manufacturers for use in battery modules/packs for electric vehicle production.

The key challenge for JM was ensuring they would be operationally ready given the novelty of the product. This product was new to the industry, requiring new equipment that hadn't been used in this environment before, with a new team in a foreign country and limited experience building a new plants.

THE SOLUTION

Vendigital was asked to assess the client's operational readiness status, specifically looking at novelty elements within the process and identifying mitigation plans to ensure the plant started up right first time:

- **Providing industry expertise:** Vendigital's team comprised leading industry experts with 30 years' experience working with battery materials and commercial scale-up to provide technical insight
- **Cross functional workshops:** Working collaboratively with cross functional teams to draw insight and learnings to develop a robust engineering maintenance strategy. New risks were identified through the use of interactive workshop tools encouraging cross collaboration
- **Supplier interviews:** Direct engagement with the suppliers enabled a deeper understanding of the technology and associated risks, whilst we were able to assess the competencies
- **Visibility of key risks:** Development of a Tableau dashboard providing a central point to capture operational risks which could be access by the whole team

Risk Types			
	People	Premises	Procurement & Technology
	Production	Systems	Procedures

Vendigital was able to bring industry experts and a fresh pair of eyes to review and challenge the team's current thinking, identifying key risks to help ensure we hit start up 'right first time'.

One of the biggest benefits was the risk tool they developed with the ability to update it so creating active risk management that was visible to all team members.

The Vendigital team has been invaluable throughout the process, collaborating with the in-house team and providing reassurance to our operational readiness activities.

Richard Rose, Deputy Operations Director for Battery Materials at Johnson Matthey

It's been a great privilege to work with Johnson Matthey on cutting edge technology in a sector that is at its infancy within Europe.

The combination of our deep sector knowledge, our collaborative approach and our digital capability has shown the value we can bring to large capex builds in new and untested sectors.

This project is a great example of how the sector needs to focus on the upstream supply chain and how our expertise can help clients achieve their ambitious goals.

Dom Tribe, Automotive Director at Vendigital

THE RESULTS

- Engaged with **100 employees** to identify novelty risks across equipment design, line performance, product quality, maintenance and instrumentation
- Developed the **engineering maintenance readiness strategy** outlining the key activities, plan, risks and resource requirements for plant start up
- Identified **270 novelty risks and developed detailed mitigation and action plans** to effectively address them
- Developed an **interactive dashboard** providing a heat map of the key risks and actions that would become the tool to centralise all operational information during the commissioning/ start-up phase whilst creating the platform for active risk management
- Performed **schedule risk analysis** to understand the impact of risks on the outturn dates and opportunities to re-sequence and accelerate the plan. Using Monte Carlo analysis, a 42 week schedule slippage was calculated based on a worst case scenario

Primary Name	Unexpected Breakdown Losses	Set-up and Adjustment Losses	Stoppage Losses	Speed Losses	Quality Defect Losses	Equipment and Capital Investment Losses
Stage 1	Low-Med	Med	Low-Med	Med	High	Med-High
Stage 2a	Med	Med	Med	Med-High	Med-High	Med
Stage 2b	Med	Med	Med	Med-High	Med-High	Med-High
Stage 3a	Low-Med	Med	Low-Med	Med	Med-High	Med-High
Stage 3b	Low-Med	Low-Med	Low-Med	Med	Med	Low-Med
Stage 4a	Med-High	Med-High	Med-High	High	High	High
Stage 4b	Med	Med-High	Med-High	High	High	High
Stage 5a	Med-High	Med-High	Med-High	High	High	High
Stage 5b	Med	Med-High	Med-High	High	High	High
Stage 6a	Low-Med	Med	Low-Med	Med	High	Med-High
Stage 6b	Low-Med	Med	Low-Med	Med	High	Med-High
Stage 6c	Med-High	Med-High	Med-High	High	High	High
Stage 7a	Med-High	Med-High	Med-High	High	High	High
Stage 7b	Low-Med	Med	Low-Med	Med	Med-High	Med-High