Ariel Green

TECHNOLOGY
PERFORMANCE INSURANCE

Fuel Cell Service Agreement Backstop

SUPPORTING THE TRANSITION TO A ZERO-EMISSION FUTURE

Fuel cells are electrochemical devices that generate electricity by converting hydrogen (or hydrocarbon fuels) into water. These systems operate at high efficiency compared to combustion-based technologies, and, in some cases, also provide a source of process heat. Due to their modular nature, fuel cells can be co-located near end users, providing reliable distributed power that can operate 24/7 so long as they are connected to a fuel source. This makes fuel cells an attractive option for facilities that highly value uninterrupted power, such as hospitals and data centers.

In addition to reliability, deployment of fuel cells paves the way for an ultra-low emissions future. Because they use hydrogen as a fuel, their only emissions are water and some heat. However, hydrogen is rarely found in its elemental state here on Earth, and is not widely available today. For this reason, commercial fuel cells typically use natural gas or biogas as a feedstock and include a reformer upstream to convert methane in the feedstock into hydrogen. This adds complexity to the system and causes some carbon to be emitted. However, the experience gained puts us on a path towards sustainability.

ARIEL GREEN CAN HELP MANAGE TECHNOLOGY RISK

Implementing new technologies, including fuel cells, electrolyzers and other clean energy technologies that produce and/or utilize hydrogen, come with real and perceived risk. This technology risk can be effectively managed with Ariel Green's Technology Performance Insurance (TPI), including investment-grade backstops for performance guarantees and long-term service agreements (LTSAs).

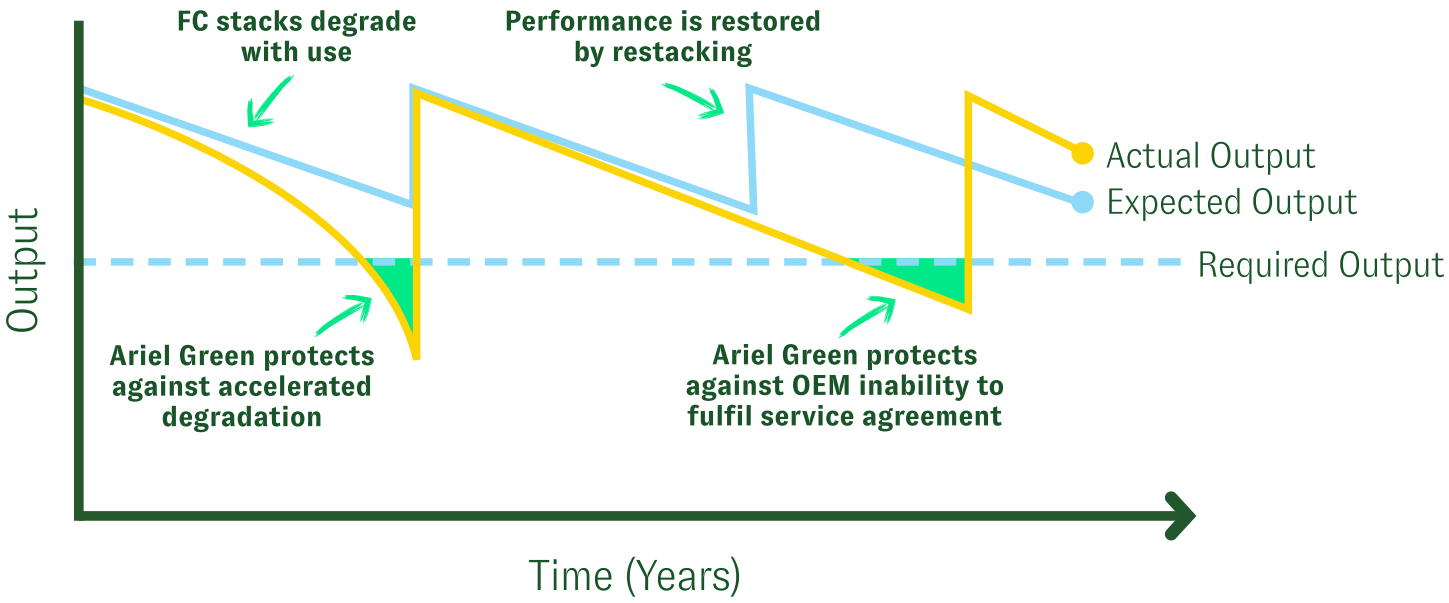
TECHNOLOGY PERFORMANCE INSURANCE

Case Review

The case review shows how a pioneering fuel cell company was able to tap low interest financing to accelerate their market penetration.

THE CLIENT

The client is a leader in the production of high temperature, high efficiency solid oxide fuel cells, with existing deployment of nearly a gigawatt of capacity globally. They are a publicly traded company and have been in existence for over 20 years.



THE CHALLENGE

Because fuel cell performance degrades over time, continued reliable long-term operation is dependent on ongoing system maintenance and periodic replacement of fuel cell "stacks". This is operationally achieved through a long-term service agreement (LTSA) between the asset owner and the manufacturer. However, to date, asset owners and their lenders have questioned the financial strength of the manufacturer and their ability to stand behind service agreement obligations for the duration of project financing, a period up to 15 years, over which time stacks will be replaced an average of three times.

THE SOLUTION

By collaborating closely with the client's commercial and technical teams, Ariel Green was able to confirm the stack-life estimates. Corresponding maintenance costs underpinning the LTSA. Armed with this knowledge, we developed a customized insurance product that guaranteed the long-term performance of the fuel cell system, including payment of liquidated damages in the event of underperformance. Further, if the fuel cell manufacturer proved unable to support fielded units, the insurance coverage continues and can maintain debt service or pay for replacement equipment if there is an unexpected drop in performance.