



APM Project
Management
Awards 2016

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WINNER'S

CASE STUDY

CATEGORY

OVERSEAS PROJECT OF THE YEAR

WINNER

QUEST – SHELL

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Overview

Industrial carbon dioxide (CO₂) emissions contribute to climate change. Using existing technologies in innovative ways can help to reduce the impact by capturing CO₂ and storing it safely underground.

In Canada, Shell is demonstrating how large-scale CO₂ emissions can be managed through the use of carbon capture and storage (CCS).

In the early to mid-2000s, Shell's oil sands operations in Alberta, Canada, which mine and process oil, were under scrutiny for their carbon intensity. In 2008 the Alberta government identified CCS as a key technology to meet the province's target CO₂ reductions for 2030 and 2050. It set up a special task force on CCS that included a representative from Shell in one of the working groups.

In response to a C\$2bn fund established by the government of Alberta, aimed at encouraging CCS demonstration projects, Shell successfully submitted a funding application for its solution, Quest.

Objectives

CCS is currently the only technology available to mitigate large-scale industrial emissions from fossil-fuel use. The International Energy Agency believes CCS could provide as much as one-sixth of the world's CO₂ emissions reductions by 2050.

Quest, Shell's flagship CCS project, is designed to capture and permanently store more than one million tonnes of CO₂ emissions each year for 25 years from the Scotford Upgrader, which turns oil sands bitumen into synthetic crude.

Resources and delivery

The project had a peak workforce of around 1,200 workers, generating local jobs. Strong senior support, combined with a focus on non-technical risks, helped ensure success.

While the team focused on project delivery, applying Shell standards and maintaining safety as the number-one priority, they also developed the motto 'The world is watching'. This served as a constant reminder of the project's stakeholders.

Quest fell under Shell's Projects and Technology organisation, which oversees all the company's projects through their entire lifecycle, from the initial idea to decommissioning.

The project was run around Shell's eight principles for good project delivery:

- making realistic early promises;
- building strong teams to deliver;
- compliance with the stage-gated project governance process;
- ensuring a clear, competitive and defined scope;
- freezing the scope;
- achieving the best practical front-end loading (conceptual development of projects);
- maximising replication and standardisation;
- compliance with project standards and controls.

Stakeholder management

Primary consideration was given to landowners and other stakeholders. As the concept of capturing and storing CO₂ underground was seen as new in Alberta, the project team recognised the importance of gaining local support and broader public acceptance in order to proceed.

Channels of communication were established early on and still remain open, allowing both formal and informal engagement. Open houses were held to answer questions and inform the public, while 'Quest café' events allowed open discussions around the concerns, questions, challenges and benefits of Quest.

A community advisory panel of local residents, politicians and academics was also set up to share regular updates about the project, helping to facilitate the Quest team to achieve approvals through the regulatory process.

Challenges

Managing the numerous interfaces of the project was a real challenge. The subsurface team alone was based across Calgary, Houston and Rijswijk, working together

virtually on 3D modelling of the underground storage area. The project had to bring everyone together and ensure information was shared as needed.

The project overcame broad challenges of community acceptance, cost scrutiny and the unknowns of an industry-first project.

Specific challenges on the ground included the extreme cold weather affecting the pipelines. The team erected special tents to keep the pipelines moisture-free and enable welding to take place safely.

Project successes

Despite all its challenges, Quest was successfully delivered ahead of schedule and below budget.

As the world's first commercial-scale CCS project to tackle carbon emissions in oil sands, it enables Shell to capture CO₂ emissions equivalent to those of around 250,000 cars. That equals one-third of the emissions from the Scotford Upgrader.

The numerous lessons learned from, and best practices yielded by, Quest will help to reduce the time, effort and cost required to advance other CCS projects worldwide.





The APM Project Management Awards have been celebrating project management excellence since 1993, and the broad range of categories is designed to make entry possible for projects and companies of all sizes and complexity.

The awards reflect the invaluable contribution that project managers make in all sectors of society and the event provides an opportunity for industry professionals to meet with colleagues and entertain guests, as well as celebrate at one

of the year's most exciting events. Highly regarded in the project management industry, the awards reflect the dedication and talent that helps to shape the project management community and the world around us.

The finalists, winners and sponsors of the awards attract national publicity for their achievements and involvement. Winning an award provides invaluable recognition and boosts the careers of winners.

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