# Major Carbon Capture and Renewable Energy Projects Making Strides Across North America and the UK



### Shell Expands Carbon Capture in Alberta

Shell is enhancing its carbon capture and storage (CCS) capabilities at its refinery and chemicals complex in Alberta, Canada, with the introduction of the Polaris CCS facility. The Polaris facility is designed to capture approximately 650,000 metric tons of CO2 annually. The captured CO2 will be transported via a 22 km pipeline to the Atlas Carbon Storage Hub, where it will be stored 2 km underground in the Basal Cambrian Sands.

The new Polaris facility complements the existing Quest CCS facility at the Scotford site, which has stored over 8.8 million metric tons of CO2 since it began operations in 2015. Quest CCS has a storage capacity of up to 1.2 million metric tons of CO2 per year.

This expansion is part of Shell’s broader initiative to reduce CO2 emissions, with the Polaris plant expected to reduce direct emissions from Shell’s refinery by 40% and from its chemicals complex by 22%. Huibert Vigeveno, Shell’s downstream, renewable, and energy solutions director, emphasized that CCS technology is crucial for meeting global climate goals. Shell plans to invest $10-15 billion in low-carbon energy solutions, including CCS, between 2023 and 2025, with the Polaris and Atlas projects set to commence operations by the end of 2028.

### Heidelberg's Net Zero Cement Project in the UK

Heidelberg Materials is initiating a consultation phase for its CCS project at the Padeswood Cement Works in Flintshire, which aims to establish the UK’s first net zero cement facility. The consultation, scheduled from July 2 to August 12, 2024, seeks public feedback on plans to install advanced CCS technology to capture up to 800,000 metric tons of CO2 annually.

The project, part of the HyNet North West initiative, aims to decarbonize the construction industry and is expected to create 54 full-time positions and up to 350 construction jobs. Public consultation events will be held in Buckley and Penyffordd, supplemented by online sessions. Details and feedback opportunities are available at padeswoodccs.co.uk.

### Heirloom's Direct Air Capture Facilities in Louisiana

Heirloom Carbon Technologies Inc. will construct two Direct Air Capture (DAC) facilities with a combined capacity of 320,000 metric tons of CO2 per annum in the Port of Caddo-Bossier, Louisiana. The first facility, starting construction later this year, will capture 17,000 metric tons of CO2 annually beginning in 2026. The second facility, part of Project Cypress, will eventually capture 300,000 metric tons annually, with an initial phase operational by 2027.

Heirloom’s decision will expand job creation and operational efficiencies in Northwest Louisiana. The state government is supporting the project with performance-based grants totaling up to $10 million, contingent on capital expenditure and payroll targets. Governor Jeff Landry supports the initiative, emphasizing Louisiana’s potential leadership in carbon storage.

### Ameren's Largest Solar Facility in Illinois

Ameren has acquired its largest solar facility to date, the Cass County Renewable Energy Center near Beardstown, Illinois, expected to generate 150 megawatts, enough to power around 27,500 homes annually. The facility will start operations later this year and is part of Ameren’s Renewable Solutions program, which helps businesses achieve environmental goals. The Cass County project, along with other pending solar projects in Missouri and Southern Illinois, aims to significantly increase Ameren’s renewable energy output. The company targets net-zero carbon emissions by 2045, with plans including natural gas plants and carbon capture to balance renewable energy fluctuations.