

## creating digital twins to reduce maintenance turnaround time

**Smart Facilities are a key enabler of assets operating more efficiently – and more autonomously – in the years ahead. They rely on digital twin technology to rapidly expose data, relationships, conditions, trends and insights for an operating facility.**

A digital twin of the Wheatstone platform has been created to optimize the planned 2021 maintenance turnaround. The solution aggregates hundreds of terabytes of data, including laser point cloud surveys, drone-acquired photos, engineering and design systems of record, operational procedures, and equipment and process data collected from tens of thousands of sensors in real time.

Comprehensive data integration allows the digital twin to transform essential workflows, such as work orders, the planning of process system isolations, and the management of safety-critical equipment. The result enables significantly reduced time and effort to plan for the turnaround, eliminating the need for most site visits and vastly improving collaboration between different work teams. Digital twins are positioning Chevron for future sustained success and competitive advantage across the enterprise, enabling the operation of true Smart Facilities with optimized safety, reliability and efficiencies.



**Photo:** Wheatstone onshore processing facility. A digital twin was created for the Wheatstone platform, which supplies natural gas to this facility, to optimize turnaround planning and execution.

**Wheatstone** Chevron holds an 80.2 percent interest in the offshore licenses and a 64.1 percent interest in the LNG facilities associated with the Wheatstone Project. The project includes the development of the Wheatstone and Iago fields, a two-train, 8.9 million-metric-ton-per-year LNG facility, and a domestic gas plant. The facilities are located at Ashburton North on the coast of Western Australia. The total production capacity for the Wheatstone and Iago fields and nearby third-party fields is expected to be approximately 1.6 billion cubic feet of natural gas and 30,000 barrels of condensate per day. The project's estimated economic life exceeds 30 years.

Total daily production averaged 21,000 barrels of condensate (17,000 net) and 1.2 billion cubic feet of natural gas (995 million net) in 2020.

**NWS Venture** Chevron has a 16.7 percent nonoperated working interest in the NWS Venture in Western Australia. The joint venture operates offshore producing fields and extensive onshore facilities that include five LNG trains and a domestic gas plant. In June 2020, Chevron announced the decision to market its interest in the NWS Venture with the data room opening in September 2020.

NWS net daily production in 2020 averaged 13,000 barrels of crude oil and condensate, 397 million cubic feet of natural gas, and 2,000 barrels of LPG.

**Barrow Island** Chevron holds a 57.1 percent operating working interest in crude oil production operations at Barrow Island.

**Exploration** The company continues to evaluate exploration and appraisal activity across the Carnarvon Basin in which it holds more than 6.6 million net acres (26,909 sq km). During 2020, the company relinquished its nonoperated working interest in the Browse Basin.

Chevron owns and operates the Clio, Acme and Acme West fields. The company continues to assess the possibility of developing Clio and Acme through shared utilization of existing infrastructure.