

# ADNOC Gas Deploys Levidian's LOOP Technology for Methane Transformation

January 16, 2025



**ADNOC Gas, the liquefied natural gas (LNG) business of ADNOC Group, has made a significant stride in its decarbonization efforts by teaming up with Baker Hughes to install Levidian's innovative LOOP technology at the Habshan Gas Processing Plant. This marks the first deployment of this technology at an operational gas processing site.**

The groundbreaking LOOP technology is designed to capture carbon from methane, the primary component of natural gas, and transform it into valuable graphene and hydrogen. "The LOOP unit is capable of producing more than 1 tonne per annum (tpa) of graphene and one tpa of hydrogen, making it a dual-purpose innovation aligned with global energy transition goals," stated ADNOC Gas in a statement.

Data gathered during this pilot project will be crucial for refining AI modeling and digital twins, optimizing future installations for maximum graphene output and minimized energy consumption. ADNOC Gas anticipates that future industrial-scale installations will significantly increase production, delivering up to 15 tpa of graphene.

"The deployment of LOOP technology is a significant milestone for ADNOC Gas," said Mohamed Al Hashemi, chief operations officer of ADNOC Gas. "By transforming methane into valuable graphene and clean hydrogen, we are unlocking new value from natural gas, driving decarbonization and supporting the UAE's industrial growth and climate ambitions."

Graphene, a remarkable material with exceptional strength and conductivity, has a wide range of potential applications across various industries. It can enhance the performance of electric vehicle batteries and solar panels, and can also be used to create stronger, more durable materials such as concrete, tires, and polymer pipes.

This collaboration with Baker Hughes and Levidian aligns with ADNOC Gas's commitment to sustainable energy solutions and its ambitious decarbonization strategy. The company recently awarded contracts worth approximately \$2.1 billion for an LNG pre-conditioning plant, compression facilities, and transmission pipelines to supply feedstock to the Ruwais LNG Project. These investments, part of a \$15 billion capital expenditure program through 2029, underscore ADNOC Gas's commitment to expanding its LNG production capacity and driving operational efficiency.

The Ruwais LNG plant, currently under development in Abu Dhabi, will be the first LNG export facility in the Middle East and North Africa region to run on clean power. When completed, it is expected to consist of two 4.8 million mtpa LNG liquefaction trains with a total capacity of 9.6 mtpa.

Furthermore, ADNOC's board of directors recently increased the company's budget allocation for decarbonization projects, technologies, and lower-carbon solutions to a record \$23 billion (Dhs84.4bn), up from \$15 billion in January 2024. This significant increase reflects ADNOC's accelerated decarbonization strategy, aiming to achieve net-zero carbon emissions by 2045 and zero methane emissions by 2030.