Photos of the Bad Lauchstädt Energy Park from February 2025 show the progress of the construction site.

Bad Lauchstädt Energy Park

THE PROOF

Regulatory sandbox for the hydrogen economy

In the very middle of Central Germany, a flagship project is being established that is leading the way for the energy transition: the Bad Lauchstädt Energy Park (“EBL”). For the first time, the entire value chain of green hydrogen is being tested on a production scale, from production and storage to transport and utilisation. The ambitious project is supported by a strong consortium of six companies and a scientific institute. “With this project, we are doing pioneering work in many areas and want to prove that the hydrogen economy is not just a vision, but actually works,” emphasises Cornelia Müller-Pagel, Overall Project Manager at EBL and Head of Green Gases at VNG AG.

GREEN HYDROGEN FROM WIND TO ENERGY

The combination of production, transport, storage, marketing and utilisation of green hydrogen implemented in the Energy Park begins with wind power. A nearby wind farm with eight modern wind turbines generates renewable electricity, which is used to operate a large-scale electrolysis plant. In this process, water is broken down into its components, producing climate-neutral hydrogen. “This direct coupling of wind farm and large-scale electrolysis is currently still unique,” explains Müller-Pagel.

LAUNCH OF THE CORE NETWORK IN CENTRAL GERMANY

An existing natural gas pipeline was converted into a hydrogen pipeline for hydrogen gas transport, sustainably utilising existing infrastructure. This 25-kilometre long transport pipeline is also the nucleus of the **ONTRAS** Central German hydrogen start-up grid. In addition, a new connection line was laid to the anchor customer, TOTAL Raffinerie Mitteldeutschland in the Leuna Chemical Park.

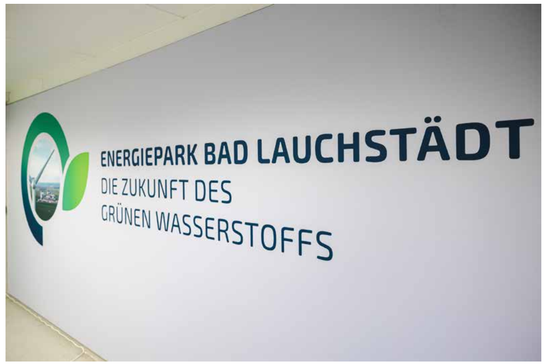
30
megawatts
of power from the electrolysis plant for hydrogen production.

2,700
tonnes of hydrogen
will be produced per year.

25
kilometres
of converted pipeline for hydrogen transport.

“In Bad Lauchstädt, we are gaining valuable experience along the entire value chain for green hydrogen, which will provide us with important insights and expertise for scaling up further hydrogen projects.”

CORNELIA MÜLLER-PAGEL
Overall Project Manager of EBL and Head of Green Gases at VNG AG



In a later stage of the project, the green hydrogen is to be stored in a specially repurposed underground salt cavern. This method not only enables the efficient and safe storage of large quantities of gas, but also the continuous supply of gas to customers independently of fluctuations in production. “We are killing two birds with one stone here: sustainable transport and, in the long term, secure storage,” explains Overall Project Manager Müller-Pagel.

INDUSTRY IN FOCUS

“Hydrogen is a real all-rounder, from industry to mobility,” explains Müller-Pagel. In the first instance, the chemical industry based in Central Germany will be supplied, which will use hydrogen to make its processes more sustainable. In addition, applications in the mobility sector are possible in the future, for example for fuel cell vehicles.

Project schedule

Since the start of the project in September 2021, many milestones have been successfully passed. On the basis of a research project, a location has been created in Bad Lauchstädt to demonstrate that hydrogen can be renewably produced on an industrial scale. Another milestone will be passed with the technical commissioning in the course of this year.

September 2021
RELEASE OF STATE FUNDING
Start: Preparation of research and development work and site preparation
Start: Preparation of the licensing procedures, in particular for the construction of the large-scale electrolysis plant and the rededication of the natural gas pipeline as a hydrogen transport pipeline

October 2021
1ST CITIZENS’ INFORMATION EVENT

January 2023.
CONCLUSION OF BIMSCHV (FEDERAL IMMISSION CONTROL ORDINANCE) PROCEDURE
Authorisation for wind farm and electrolysis

50 MW
RATED OUTPUT

by April 2023
SITE PREPARATION
Site preparations for electrolysis and storage (above-ground plant)

from June 2023
START OF CONSTRUCTION WORK
Construction of transformer station

June 2024
OFFICIAL COMMISSIONING OF WIND FARM

100,000 m³
PER HOUR

by Q4 2024
CONVERSION OF NATURAL GAS PIPELINE
Conversion and upgrading of the natural gas pipeline to hydrogen transport

by Q2 2025
COMMISSIONING
of the converted hydrogen pipeline
Construction of large-scale electrolysis with subsequent pilot operation
Construction of a gas scrubbing system

30 MW
RATED OUTPUT

from Q3 2025
COMMISSIONING
Electrolysis
Gas scrubbing and gas volume measurement during pilot operation

August 2026
COMPLETION OF HYDROGEN PRODUCTION PILOT OPERATION

The consortium partners of the EBL:

- Terrawatt Planungsgesellschaft mbH
- Uniper
- VNG Handel & Vertrieb GmbH
- VNG Gasspeicher GmbH
- ONTRAS Gastransport GmbH
- DBI – Gastechnologisches Institut gGmbH
- VNG AG

Alliance for clean energy

The **Hydrogen Germany** business alliance positions Germany as a leading hydrogen-using nation, supported by leading companies and organisations along the entire value chain of the hydrogen economy. VNG is involved with activities relating to the EBL and the hydrogen core network, which serves as an anchor point for a European infrastructure and enables European partner connections.

More information about Hydrogen Germany

Partner of

Hydrogen Germany

REGIONAL VALUE CREATION A WIN FOR THE CENTRAL GERMANY REGION

In addition to technological innovation, the project creates economic impetus for the region. Local companies and skilled workers benefit from new orders and jobs. At the same time, the Bad Lauchstädt Energy Park strengthens Central Germany as an energy location and provides local solutions for the necessary reduction of CO_2 emissions in industry. The project partners are investing a total of €210 million. This includes funding for the “Real-life Laboratory for the Energy Transition” of €34 million from the 7th Energy Research Programme funding initiative of the Federal Ministry of Economics and Climate Protection (“BMWK”).

“We want to show how a climate-friendly energy system of the future can work with hydrogen and thus also provide a future perspective for the energy and chemical region in the south of Saxony-Anhalt,” says Müller-Pagel.

ON COURSE FOR THE FUTURE

Construction work has been progressing rapidly since the ground-breaking ceremony in June 2023. The wind turbines officially went into operation in June 2024. Structural and civil engineering work has largely been completed; the focus is now on the technical plant construction. The construction of the electrolyser and the completion of the transport pipeline are currently in progress. The technical commissioning of the entire facility is planned for 2025. “We are right on schedule and are looking forward to being able to feed green hydrogen into the grid soon,” says Müller-Pagel optimistically.

GreenRoot: Green hydrogen for the industry of tomorrow

Innovative hydrogen project in Lutherstadt Wittenberg

In order to defossilise the energy requirements of numerous industrial companies in Central Germany, we want to build an industrial-scale electrolysis plant in Lutherstadt Wittenberg together with the Dutch company HyCC to supply companies in the region with green hydrogen.

From 2029, around 50,000 tonnes of green hydrogen are to be produced annually. The electrolyser with a capacity of up to 500 megawatts is being realised by VNG AG, VNG Handel & Vertrieb and HyCC. The planned hydrogen volume corresponds to around five percent of the production capacity in Germany envisaged under the national hydrogen strategy. The plant is being built opposite the Agro-Chemie Park Piesteritz and thus in the direct neighbourhood of SKW Stickstoffwerke Piesteritz. Hydrogen is intended to replace natural gas in the future and reduce CO_2 emissions.