



Media Release

Shell to build 100-megawatt renewable hydrogen electrolyser in Germany

COLOGNE/WESSELING, GERMANY, July 25, 2024 – Shell Deutschland GmbH (“Shell”) has taken a Final Investment Decision (FID) to progress REFHYNE II, a 100-megawatt renewable proton-exchange membrane (PEM) hydrogen electrolyser at the Shell Energy and Chemicals Park Rheinland in Germany. Using renewable electricity, REFHYNE II is expected to produce up to 44,000 kilograms per day of renewable hydrogen to partially decarbonise site operations. The electrolyser is scheduled to begin operating in 2027.

The REFHYNE II project has been enabled by supportive policies, including the European Union’s (EU) binding targets for the use of renewable hydrogen, and the German Federal Government’s regulatory framework. The project has also received funding from the EU’s Horizon 2020 research and innovation programme.

“Today’s announcement marks an important milestone in delivering our strategy of more value with less emissions. Investing in REFHYNE II is a visible demonstration of our commitment to the hydrogen economy, which will play an important role in helping to decarbonise Shell’s operations and customer products,” said Shell’s Downstream, Renewables and Energy Solutions Director Huibert Vigeveno. “Our decision to invest illustrates what can be achieved with the right enabling conditions to deliver competitive projects.”

Renewable hydrogen from REFHYNE II will be used at the Shell Energy and Chemicals Park to produce energy products such as transport fuels with a lower carbon intensity. Using renewable hydrogen at Shell Rheinland will help to further reduce Scope 1 and 2 emissions at the facility. In the longer term, renewable hydrogen from REFHYNE II could be directly supplied to help lower industrial emissions in the region as customer demand evolves.

The project will benefit from the experience Shell and its project partners, ITM and Linde, have in developing, constructing and operating other renewable hydrogen projects in Europe. REFHYNE II follows the success of the 10-megawatt PEM electrolyser REFHYNE I, which started up in 2021 and uses the same technology. Since 2021, preparations have been under way to deliver the detailed engineering plans for REFHYNE II, complete on-site groundworks, and connect to existing infrastructure.

Notes to editors:

- Shell plans to invest \$10-\$15 billion across 2023-2025 to support the development of low-carbon energy solutions including e-mobility, low-carbon fuels, renewable power generation, hydrogen, and carbon capture and storage. In total, Shell invested \$5.6 billion in low-carbon solutions in 2023, which was 23% of its capital spending.
- The capital investment related to REFHYNE II will be absorbed within Shell’s cash capital expenditure guidance, and this project exceeds the internal rate of return (IRR) hurdle rate for Shell’s Renewables & Energy Solutions business as outlined during Capital Markets Day 2023.

- Key project partners for REFHYNE II are ITM Power (Trading) Ltd, ITM Power Germany GmbH, Linde GmbH, TECNALIA, ERM, SINTEF AS, and CONCAWE.
- Shell expects that, once operational, hydrogen produced from REFHYNE II will meet the requirements for renewable fuels of non-biological origin (RFNBO) in accordance with current EU legislation.
- This investment delivers on Shell's strategy to repurpose its Energy and Chemicals Parks to provide lower carbon molecules to customers.
- In the Netherlands, Shell is currently constructing Holland Hydrogen I with a capacity of 200 megawatts, one of Europe's largest renewable hydrogen plants under construction.

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Cautionary Note

The companies in which Shell plc directly and indirectly owns investments are separate legal entities. In this announcement “Shell”, “Shell Group” and “Group” are sometimes used for convenience where references are made to Shell plc and its subsidiaries in general. Likewise, the words “we”, “us” and “our” are also used to refer to Shell plc and its subsidiaries in general or to those who work for them. These terms are also used where no useful purpose is served by identifying the particular entity or entities. “Subsidiaries”, “Shell subsidiaries” and “Shell companies” as used in this announcement refer to entities over which Shell plc either directly or indirectly has control. The term “joint venture”, “joint operations”, “joint arrangements”, and “associates” may also be used to refer to a commercial arrangement in which Shell has a direct or indirect ownership interest with one or more parties. The term “Shell interest” is used for convenience to indicate the direct and/or indirect ownership interest held by Shell in an entity or unincorporated joint arrangement, after exclusion of all third-party interest.

Forward-Looking Statements

This announcement contains forward-looking statements (within the meaning of the U.S. Private Securities Litigation Reform Act of 1995) concerning the financial condition, results of operations and businesses of Shell. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements are statements of future expectations that are based on management’s current expectations and assumptions and involve known and unknown risks and uncertainties that could cause actual results, performance or events to differ materially from those expressed or implied in these statements. Forward-looking statements include, among other things, statements concerning the potential exposure of Shell to market risks and statements expressing management’s expectations, beliefs, estimates, forecasts, projections and assumptions. These forward-looking statements are identified by their use of terms and phrases such as “aim”; “ambition”; “anticipate”; “believe”; “commit”; “commitment”; “could”; “estimate”; “expect”; “goals”; “intend”; “may”; “milestones”; “objectives”; “outlook”; “plan”; “probably”; “project”; “risks”; “schedule”; “seek”; “should”; “target”; “will”; “would” and similar terms and phrases. There are a number of factors that could affect the future operations of Shell and could cause those results to differ materially from those expressed in the forward-looking statements included in this announcement, including (without limitation): (a) price fluctuations in crude oil and natural gas; (, b) changes in demand for Shell’s products; (c) currency fluctuations; (d) drilling and production results; (e) reserves estimates; (f) loss of market share and industry competition; (g) environmental and physical risks; (h) risks associated with the identification of suitable potential acquisition properties and targets, and successful negotiation and completion of such transactions; (i) the risk of doing business in developing countries and countries subject to international sanctions; (j) legislative, judicial, fiscal and regulatory developments including regulatory measures addressing climate change; (k) economic and financial market conditions in various countries and regions; (l) political risks, including the risks of expropriation and renegotiation of the terms of contracts with governmental entities, delays or advancements in the approval of projects and delays in the reimbursement for shared costs; (m) risks associated with the impact of pandemics, such as the COVID-19 (coronavirus) outbreak, regional conflicts, such as the Russia-Ukraine war, and a significant cybersecurity breach; and (n) changes in trading conditions. No assurance is provided that future dividend payments will match or exceed previous dividend payments. All forward-looking statements contained in this announcement are expressly qualified in their entirety by the cautionary statements contained or referred to in this section. Readers should not place undue reliance on forward-looking statements. Additional risk factors that may affect future results are contained in Shell plc’s Form 20-F for the year ended December 31, 2023 (available at www.shell.com/investors/news-and-filings/sec-filings.html and www.sec.gov). These risk factors also expressly qualify all forward-looking statements contained in this announcement and should be considered by the reader. Each forward-looking statement speaks only as of the date of this announcement, July 25, 2024. Neither Shell plc nor any of its subsidiaries undertake any obligation to publicly update or revise any forward-looking statement as a result of new information, future events or other information. In light of these risks, results could differ materially from those stated, implied or inferred from the forward-looking statements contained in this announcement.

Shell’s Net Carbon Intensity

Also, in this announcement we may refer to Shell’s “Net Carbon Intensity” (NCI), which includes Shell’s carbon emissions from the production of our energy products, our suppliers’ carbon emissions in supplying energy for that production and our customers’ carbon emissions associated with their use of the energy products we sell. Shell’s NCI also includes the emissions associated with the production and use of energy products produced by others which Shell purchases for resale.

Shell only controls its own emissions. The use of the terms Shell's "Net Carbon Intensity" or NCI are for convenience only and not intended to suggest these emissions are those of Shell plc or its subsidiaries.

Shell's net-zero emissions target

Shell's operating plan, outlook and budgets are forecasted for a ten-year period and are updated every year. They reflect the current economic environment and what we can reasonably expect to see over the next ten years. Accordingly, they reflect our Scope 1, Scope 2 and NCI targets over the next ten years. However, Shell's operating plans cannot reflect our 2050 net-zero emissions target, as this target is currently outside our planning period. In the future, as society moves towards net-zero emissions, we expect Shell's operating plans to reflect this movement. However, if society is not net zero in 2050, as of today, there would be significant risk that Shell may not meet this target.

Forward-Looking non-GAAP measures

This announcement may contain certain forward-looking non-GAAP measures such as cash capital expenditure and divestments. We are unable to provide a reconciliation of these forward-looking non-GAAP measures to the most comparable GAAP financial measures because certain information needed to reconcile those non-GAAP measures to the most comparable GAAP financial measures is dependent on future events some of which are outside the control of Shell, such as oil and gas prices, interest rates and exchange rates. Moreover, estimating such GAAP measures with the required precision necessary to provide a meaningful reconciliation is extremely difficult and could not be accomplished without unreasonable effort. Non-GAAP measures in respect of future periods which cannot be reconciled to the most comparable GAAP financial measure are calculated in a manner which is consistent with the accounting policies applied in Shell plc's consolidated financial statements.

The contents of websites referred to in this announcement do not form part of this announcement.

We may have used certain terms, such as resources, in this announcement that the United States Securities and Exchange Commission (SEC) strictly prohibits us from including in our filings with the SEC. Investors are urged to consider closely the disclosure in our Form 20-F, File No 1-32575, available on the SEC website www.sec.gov.