**COMPANIENCE COMPANY** hydrogen based energy storage

# Digital Toolkit

The Digital Toolkit was created to help us share our story and introduce Corre Energy, a hydrogen based energy storage company

Please use the top menu to navigate.

# hydrogen based energy storage

#### Introduction

Corre Energy B.V is focused on the development, construction, & operation of grid-scale underground, long duration energy storage and the production and sale of green hydrogen, headquartered in the Netherlands.

Compressed Air Energy Storage (CAES) is a proven energy storage technology that involves using electricity to compress air in underground storage caverns which can be released at a point in time and combined with hydrogen to generate electricity. Corre Energy has developed a system whereby renewable electricity is used to compress air and generate green hydrogen both of which are stored in separate co-located underground caverns. When electricity demand is high/supply is low, air and green hydrogen are combined by an electrolyser to generate electricity in a decarbonised system.

Corre Energy has two projects at a progressed stage of development – the first is a joint project in the Netherlands (ZW1) where Corre Energy has partnered with InfraCapital (part of M&G Group). The second project is in Denmark with Corre Energy currently owning 100%. Both projects are expected to come onstream in 2025/ 2026 and reach full profitability by 2030. These projects cost €300-500m each (depending on project type) to construct and are expected to generate EBITDA of circa €80m each at maturity.

In addition to the two projects under construction, the Company also has a pipeline of 11 EU designated projects across the Netherlands, Germany and Denmark.

More information can be found at: <u>www.corre.energy</u> and on our project website: <u>www.correenergystorage.nl/faq</u>

#### Main website: <u>www.corre.energy</u>

Project website: www.correenergystorage.nl

Green Hydrogen Hub: www.greenhydrogenhub.dk

Twitter: @correenergy

Linkedin: <u>/correenergy</u>

Youtube: Corre Energy



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## The Technology

Underground energy storage in the form of compressed air provides a low-cost storage solution for a minimum of 10-12 hours, and subject to cavern sizes, a duration of 80-100 hours can be achieved for 300 MW+ of energy storage. A combination of relatively unlimited storage cycles and significantly lower capital costs provides for much lower annualised costs for CAES versus lithium-ion battery.

Compressing air or hydrogen in salt caverns is an economically viable, scalable storage technology that will be able to reach true grid scale (100s of megawatt ("MW") per installation) and offer both short and long-term duration storage.

CAES has been operating reliably and safely since 1978 in Germany and 1991 in the U.S. The technology uses specifically designed underground storage caverns created in geological salt deposits by a process known as solution mining or leaching.

During operation of the CAES facility, in the storage phase, electricity is used to compress air into the storage cavern. In the generation phase, the compressed air is released and pre-heated using a fuel to drive turbines, producing electricity when required.

One CAES cavern of 1 million cubic metres can generate 320MW of power within a 12-24 hour duration.



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#### The Team



Frank Allen Independent Non-Executive Director, Chair



Nick Gilman Chief Financial Officer in

.



Keith McGrane Chief Executive Officer



Patrick McClughan Chief Strategy Officer



Darren Patrick Green Executive Director, President



Astrid Hartwijk Chief Operations Officer

in



Rune Eng Independent Non-Executive Director



Stuart Livingstone Group Operations Director

in

**Meet The Team** 

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## Branding

#### Image Assets

Photos can be used by third parties if attributed to Corre Energy (include hyperlink to site) – www.corre.energy Full image library can be <u>downloaded here</u>



#### Logo Assets

corre.energy:

hydrogen based energy storage

Logo Tagline Grey <u>(Download)</u>



Logo Stacked Grey <u>(Download)</u>

#### Brand Colours



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#### Social Assets

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Social image assets. All files can be <u>downloaded here</u>



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## The Netherlands

CAES Zuidwending (ZW1) is a large-scale renewable electricity storage facility currently under development, and marks the Group's first project. ZW1 is being developed in partnership with Infracapital (part of M&G Group plc).

The project is listed on the ENTSO-E Ten Year Network Development Plan (TYNDP), and will deploy advanced compressed air energy storage (CAES) technology to develop and implement renewable CAES solutions for the integration of renewable energy.

On completion, it is expected to have a generation capacity of 320 MW and a daily storage/delivery capacity of approximately 3-4 GWh. ZWI has already secured grid capacity and commenced permitting, and this project is expected to come on-stream in 2025/2026.

Under the partnership, it is intended that Infracapital will fund, subject to the achievement of certain milestones, part of the development and the capital expenditure in return for an ownership interest in the project. Corre Energy will retain a significant minority equity interest in this project.

**TYNDP:** www.correenergystorage.nl/TYNDP

 **Website:** www.correenergystorage.nl





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#### Denmark

DK1, the Group's second project, which is located in Denmark, is to be developed as a renewable electricity storage facility expected to have a generation capacity of 320 MW with fully integrated green hydrogen capability. Corre Energy currently owns 100% of this project.



GHH Logo <u>(Download)</u>

The Danish Climate Agreement for Energy and Industry 2020 is targeting 70% renewables and 70% reduction in greenhouse gas emissions by 2030. Approximately 10 GW of offshore wind is to be in operation by the end of the decade and presents a significant integration problem for the electricity grid operator, therefore highlighting the need for scalable storage solutions with an emphasis on hydrogen-based systems to facilitate deep decarbonisation of both the electricity system and industrial sectors.

In December 2020, Corre Energy in consortia with Eurowind Energy A/S and Danish state-owned transmission system operator Energinet (through its subsidiary Gas Storage Denmark) formally launched plans to establish one of the world's largest green hydrogen production, storage and CAES hubs in Denmark. The project's ambition is to combine CAES and green hydrogen production via electrolysis with two large scale energy storage solutions – Underground Hydrogen Storage – underground hydrogen storage and CAES. It is intended that Corre Energy will be the lead developer of CAES and co-developer of the electrolysis facility.

Website: www.greenhydrogenhub.dk

"This first Green Hydrogen Hub, the result of many years collective work, represents a giant leap forward for Europe's energy transition,"

"Grid-scale storage is the only way to achieve 100% renewable energy, eliminate fossil fuels and decarbonise Europe within ten years. This technology has the potential to transform economies. By unlocking the true value of renewable energy, countries can now achieve the lowest cost decarbonisation."

Keith McGrane, CEO of Corre Energy.



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#### Investments

Corre Energy has been successful in raising investment from various impactfocused investment funds.

On 31st March Corre Energy announced a partnership with Infracapital to fund, subject to the achievement of certain milestones, part of the development and the capital expenditure of the initial CAES Zuidwending (ZWI) project.

Infracapital now sits on the steering committee of the ZW1 project and provides support to the Group for the development of the project. This agreement was signed on 9 March 2021.

#### Infracapital Announcement

On 21st June 2021 Corre Energy secured an investment of up to €20m from Fondo Italiano per l'Efficienza Energetica (FIEE), an EIB-backed Italian inf rastructure fund focused on energy transition. This investment followed extensive technical and commercial due diligence in respect of the Group by FIEE who are now an important strategic partner for the business.

#### FIEE Announcement

On 23rd September 2021, Corre Energy on Euronext Growth, a market operated by Euronext Dublin.

Euronext Announcement



#### dickie.armour@corre.energy







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## Get in touch with the team

More information about Corre Energy is available on our website: <u>www.corre.energy</u>

Address Corre Energy B.V. Helperpark 278-3 9723 ZA Groningen The Netherlands

Email dickie.armour@corre.energy nick.gilman@corre.energy

Phone +31 50 799 5060



Dickie Armour



Nick Gilman

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