

EVERSHEDS  
SUTHERLAND



## **Powering Data Centers**

Helping to deliver energy transition and net zero strategies

# Contents

When the grid just isn't giving you enough

3

Alternatives to achieve security of power supply

4

How can we help you?

6

Contacts

7

# When the grid just isn't giving you enough

**Energy capacity is increasingly constrained across big European cities like Amsterdam, Frankfurt, Dublin and London, where there is significant grid congestion.**

Competition for capacity is fast outpacing the traditional networks' ability to develop and invest in their networks. The need for reliable, affordable and low carbon energy sources are key drivers for data center operators to invest in alternative means of securing electricity. Data centers above all else require highly reliable and redundancy proof supplies, whilst also coming under increasing pressure to facilitate low carbon solutions, and solutions that do not divert much needed capacity from other developments like housing.

The vast majority of large organisations, especially in the tech sector, now also have ambitious decarbonisation goals. This is an important aspect of ESG policy, public perception and access to finance, compliance with regulatory/environmental measures and resilience against volatile energy commodity prices.

The main ways organisations look to decarbonise is by sourcing power and heat from low carbon sources, energy efficiency measures and/or (as a last resort) trading carbon credits. However, not all of these solutions will be viable for data centers, given the paramount need to ensure security of supply – a data center cannot only operate while the wind is blowing.



# Alternatives to achieve security of power supply

Data centers are being required to engage much more closely with alternative energy solutions and technologies, which can be complex, highly regulated and outside of your business as usual.

Access to the grid, physical space, planning and permitting, and capacity requirements will be among the key factors which determine the right energy mix to power a data center. Here are some leading technologies to consider:



## Hydrogen Fuel Cells

The combustion of hydrogen for electricity generation can provide a reliable, responsive source of power with zero carbon emissions. However, the carbon footprint from the production and transportation of hydrogen needs to be considered, with "green" hydrogen (produced from low carbon generation) remains costly.

Once green hydrogen is more widely available and economically viable, this type of stationary backup power could be implemented across industries, from datacenters to commercial buildings and hospitals.

*Source: Hydrogen fuel cells could provide emission free backup power at datacenters, Microsoft says | Hydrogen Council*

### Our capabilities

- Large **multi-national engineering company** on JV arrangements for R&D of hydrogen fuel cell technology
- **ERM Dolphyn hydrogen pilot** a system for generating low carbon hydrogen offshore at scale using a combination of floating wind and electrolysis



## Small Modular Reactors

A number of major companies have set low-carbon targets for securing their power, including data centers, which are actively exploring options to develop their own off-grid electricity supply.

With their insatiable demand for reliable baseload energy, datacenters are the perfect clients for SMR vendors.

SMRs, when commercialised, can provide a steady, baseload supply of low-carbon energy, and it is hoped that their modular nature will make them much more cost effective and easier to install and operate than large scale nuclear power plants.

### Our capabilities

- **Lead UK SMR developer** on early stage development of its SMR programme
- **Fermi Energija** on the Estonian SMR programme
- **K.A. Care** on a viability study of the Saudi national nuclear programme, focusing on its SMR programme



## Battery Storage

On site batteries which sit “behind the meter” can provide data centers with “uninterruptible power supply” (UPS) of short durations, can help unlock energy optimisation (e.g. peak shifting), and assist with integration of renewables, amongst a host of other potential benefits.

### Our capabilities

- **Gresham House** on all aspects of their battery storage fund, including capital raising, deployment, project acquisition and development, and operational and trading aspects
- Developers in **Netherlands** and **Finland** on first of a kind colocation battery projects in those markets
- Drafting **AES** template EPC contract for UK/EU battery storage projects



## Gas

Some data centers looking to secure their own reliable, affordable baseload power may look at combined gas plants, which can range from smaller “peakers” to assist with outages or grid constraints, to much larger CCGT plants to assist with baseload requirements.

The carbon footprint and permitting hurdles are some of the major inhibitors, at least without CCUS.

### Our capabilities

- **Pulse Clean Energy**, backed by **IMCO** (Canadian Pension Fund), on its acquisition of gas peakers/battery projects and entry into the UK market
- Prospective bondholders, led by **Allianz** and **Goldman Sachs**, on portfolio financing of 30 gas peakers and batteries, with **AIP** as project sponsors.
- **Vantage** on the regulatory, permitting and construction support of a 100MW gas fired power plant and three data at its Campus in Ireland.



## How can we help you?

Helping you to deliver your energy transition and net zero strategies is core to our purpose.

We do this by blending our deep expertise across our global Energy and Digital Infrastructure teams to bring you the best experience in commercial energy contracts, grid connections and energy regulatory, green corporate PPAs, energy supply contracts (including fixed, flexible and sleeving products), energy efficiency contracts, carbon credit agreements and ESG compliance. Our global Digital Infrastructure team provide a distinct blend of specialist legal advice and industry knowledge, covering the full spectrum of legal disciplines across data centers, energy, telecoms & connectivity, cyber, privacy & data security.

We fully understand current market trends and are well positioned to help you to de-risk your business and deliver extra value.



*"The extensive experience of the team is best exemplified by their ability to tackle complex problems and overcome difficult challenges."*  
**Chambers 2023**

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