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Data Centers Have a Power Problem, ENGIE Has Solutions



The iMasons Legacy Podcast

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Data Centers Have a Power Problem, ENGIE Has Solutions

Left to right: Ivan Bell, Vice President, Global Account Management, ENGIE; Patty Solberg, Senior Advisor for Solutions Innovation, ENGIE; Anne Cateaux, Vice President, Key Client Office, ENGIE; Santiago Suinaga, Chief Executive Officer, Infrastructure Masons; Christian O'Donnell, Head of Asset Portfolio Management & Structuring, ENGIE.



Photo courtesy of Engie

Today, ENGIE is scaling up a practice to help hyperscale data center clients design, build and co-site projects in areas with direct access to power at the capacity needed for modern AI workloads.

About two years ago, as grid interconnection delays and transmission constraints worsened, business leaders at the global low-carbon engineering and services company [ENGIE](#) challenged internal teams to rethink how data centers are sited and powered.

The traditional pattern is for developers to site data centers with access to abundant, inexpensive power and then secure green power purchase agreements (PPAs) from renewable energy sources. ENGIE's leadership wanted to know if the company could meet a hypothetical client request for a 300 MW hyperscale data center co-sited with low-carbon power generation and be operational within 24 months.

The teams examined ENGIE's portfolio of energy projects around the world and identified more than a dozen sites with existing or planned power capacity to meet the request.

The exercise proved prescient: Today, ENGIE is scaling up a practice to help hyperscale data center clients design, build and co-site projects in areas with direct access to power at the capacity needed for modern artificial intelligence (AI) workloads. The practice combines expertise from across ENGIE's power and design engineering teams to meet the market demand of today.

"The timing was right, and the opportunity was clear," said [Narsimha Misra](#), Chief Executive Officer of ENGIE Energy Marketing, North America, who leads the practice.



Convergence of Industries

Misra likened the market appetite for power today to the 1970s and 1980s when utilities were short on power and industrial growth was rampant. The difference today is the flexibility of the industrial load – AI training data centers can be co-sited with power, which removes the logistical constraints of sourcing and building power transmission and distribution infrastructure.

For many years, data center companies and operators viewed the energy sector as another supplier or component. Today energy and power are top priorities in the strategy to deploy data centers, noted [Santiago Suinaga](#), Chief Executive Officer of [Infrastructure Masons](#) (iMasons).

UNSTINTING COMMITMENT TO OUR GROWTH STRATEGY FOR 2030



ENGIE aims to reach 95 GW of installed renewable capacity by 2030, primarily through wind, solar and battery. This is part of a plan to double renewable capacity compared to 2020 levels. Source: 2024 Integrated Report



“At our iMasons Advisory Council meetings and Member Summits, we have seen the critical need for data centers platforms to partner with utilities and energy companies to help shape the strategy to continue deploying large scale capacity to serve the constant growing demand with an innovative, sustainable and efficient approach,” he said.

ENGIE today has tens of gigawatts of power capacity built and in the development pipeline available to serve industrial clients with siting flexibility. This capacity includes thermal and renewable sources of power and is backed by a growing portfolio of energy storage projects, which is in alignment with the company’s goal to achieve net zero carbon emissions by 2045.

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—Narsimha Misra
CEO of ENGIE Energy Marketing,
North America.





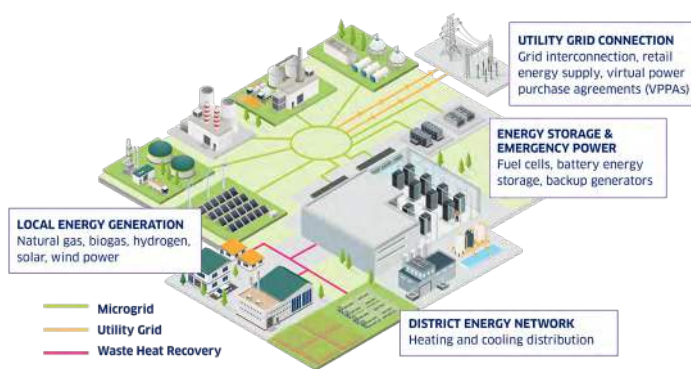
Deep History with Data Center Clients

ENGIE has a decades long history working with clients across the digital infrastructure industry, ranging from facilitating PPAs that help clients meet their carbon reduction goals to the siting, design and engineering of data centers that maximize efficiencies across power and cooling systems.

Different business segments within ENGIE, which has more than 95,000 employees in 31 countries around the world, traditionally served these different client needs. One team focused on PPAs, another on sustainability consulting. ENGIE subsidiary RED Engineering, a design engineering consultancy, specializes in low-carbon power generation and cooling systems for data centers.

When colocation and hyperscale data center companies expand into new and unfamiliar markets, they turn to ENGIE for insight on local power availability, data center permitting, siting and design, and the development and deployment of power and cooling systems.

ENGIE began to consolidate this breadth of expertise to more tightly serve the digital infrastructure industry in 2018. At the time, PPAs and other clean power solutions for data center clients were solid business for ENGIE. Today, this business is bigger than ever. Multiple hyperscale clients have also approached ENGIE with a variation on the theme: they need power at the scale of small cities today to serve AI workloads.



Render courtesy of Engie

At the end of 2024, ENGIE had 46.1 GW of renewable energy capacity, including: 20.6 GW hydro, 13.9 GW onshore wind, 1.1 GW offshore wind, 7.6 GW solar and 2.9 GW of other sources including geothermal, biomass and biogas.

Source: Universal Registration Document 2024



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— Anne Cateaux
Vice President, Key Client Office,
ENGIE



“The whole sector was clamoring for access to gigawatts of green power,” recalled [Anne Cateaux](#), Vice President, Key Client Office, at ENGIE. “That was the catalyst for us to focus on this need and accelerate our efforts.”

“ENGIE and our data center clients are becoming symbiotic, with us leveraging data centers as stable power consumers and data center operators relying on renewables to meet their own energy needs and sustainability goals,” she added.

The focus on addressing the power gap for hyperscale data center clients leverages ENGIE’s existing expertise across the energy landscape. This expertise ranges from the development of thermal, solar and wind power projects that feed the power grid to the design and deployment of micro-grids, which are behind-the-meter solutions that accelerate completion of data center projects held up by grid connection delays.

The city-size scale of these projects also fits with ENGIE’s expertise in developing and managing power, water and heating infrastructure for counties and countries, according to [Patty Solberg](#), Senior Advisor for Solutions Innovation, ENGIE North America.

“We have 99-year agreements to run city infrastructure,” she said. “This is in our DNA. We have a big, long-term ecosystem perspective that we bring into projects.”



Sustainable, 'Of the Community' Data Centers

ENGIE aims to bring this big picture, city-scale experience to the hyperscale data center practice as it helps clients integrate with communities where power capacity is available today.

“We strive to support economic growth in our largely rural communities in the U.S. and globally so they thrive via our investments in renewable energy,” said [Caroline Mead](#), Senior Vice President, Power Marketing, at ENGIE. “We create local jobs and provide economic benefits that help fund schools, roads, first responders and local services. We are very proud of the value we bring to our community neighbors.”

For example, when ENGIE approaches a new market with a client, the company will survey the local industrial landscape for synergies with power and cooling systems. The company may identify a partner to off-take the heat generated at data centers for another industrial process or find an opportunity to increase local power grid resilience through concepts such as demand response programs.

“There is increasing demand for data centers to be able to contribute to both the local infrastructure as well as the communities they’re being built next to,” said [Phil Reid](#), Head of Energy Transition at RED Engineering.

For example, data centers are increasingly called on to support the power grid with

additional generation during periods of high demand and frequency stabilization on networks with high renewable energy assets, he explained.

“Additionally, large amounts of low-grade waste heat being rejected from data centers can be harnessed and exported to community and industrial campus heating systems, providing low cost and low carbon heat to surrounding areas. That’s a win-win scenario for all,” Reid said.

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Power Marketing, ENGIE



This win-win scenario requires collaboration between the data centers, utilities and power companies to determine how they can augment each other. It also requires direct engagement with local community members to understand how data center infrastructure that is designed to last for decades, and the companies behind them, can become a part of the community rather than a source of friction.

“iMasons has partnered with ENGIE because we have seen the primary role that energy companies play in data center strategy to drive innovation and efficiency,” Suinaga said. “As well, we feel very close to ENGIE’s strategy and approach on community engagement. A major component of continuing to develop data centers is understanding and aligning to the community needs for these deployments, to not just integrate, but become of the community.”

ENGIE today runs community engagement programs focused on education about the infrastructure that the company engineers and deploys, from wind and solar power facilities that cover hundreds of acres on rural lands to the safety of industrial-scale battery energy storage systems co-located with a data center to smooth variable loads.

“We are very cognizant of the reputation of ENGIE to be doing the right thing for the community,” said Misra. “Our goal is to power a sustainable future. The data center sector mission is to enable the seamless flow of digital information. The marriage of the two benefits us all.”



CONTRIBUTORS



Anne Cateaux
Vice President, Key Client Office
ENGIE



Caroline Mead
Senior Vice President, Power Marketing
ENGIE



Patty Solberg
Director, Solutions Innovation
ENGIE



Phil Reid
Head of Energy Transition
RED Engineering



Narsimha Misra
Chief Executive Officer
ENGIE



John Roach
Writer and Content Strategy
Infrastructure Masons



Santiago Suinaga
Chief Executive Officer
Infrastructure Masons