Case Study

Immersion Cooling | **Cloud Hosting**

The future of the cloud: 100% powered by renewable energy and Immersion cooling.

Introduction

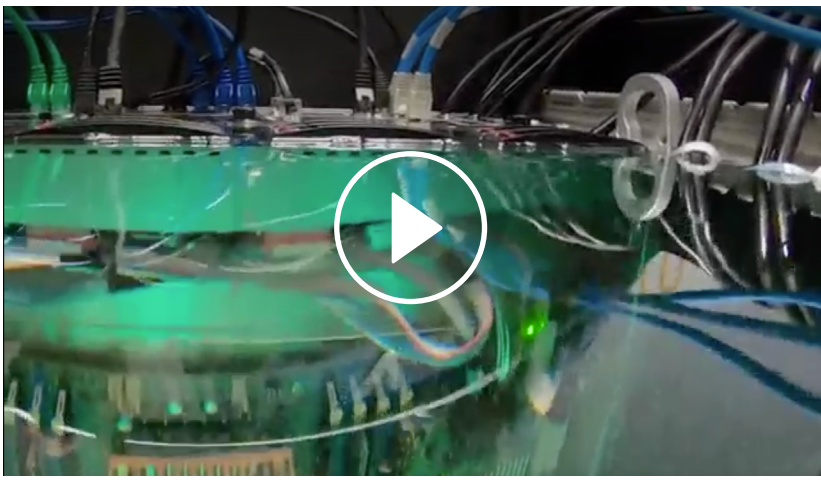
This case study explains how PeaSoup Cloud, a supplier of **eco-cloud services**, powered by Immersion cooling, Submer, an Immersion cooling technology supplier, and SuperMicro, a supplier of IT hardware, provide sustainable data centre-cloud solutions for businesses.

PeaSoup's ECO cloud refers to the public cloud infrastructure (cloud computing) and the environmental benefits that come from liquid Immersion cooling technology used in PeaSoup data centres.

PeaSoup is currently the **only company in the UK to offer a fully liquid-cooled cloud commercially**. The company is at the forefront of a growing trend toward a greener more environmentally friendly cloud and hosting industry. This trend has been accelerated over recent years, as customers look to reduce their CO_2 footprint and seek out providers which support long-term Environmental, Social and Governance (ESG) goals.

PeaSoup has chosen Immersion cooling as their preferred method of cooling their cloud IT servers. Immersion cooling and PeaSoup's ECO cloud offer its customers an **all-in-one solution to the challenge of net-zero carbon emissions and renewable energy**. Two key metrics used to measure ESG compliance and commitment. PeaSoup ensures its customers easily meet the ever-growing regulatory requirements without compromising performance, hardware life span and efficiency.

In an industry that is saturated with providers and solutions, PeaSoup can show tangible strategies and actions that show their **self-commitment to reducing their own CO_2 emissions**. This sets them apart from other companies as **their green message infiltrates all aspects of their business, giving customers a choice to take real action against environmental issues.**



Rating Index

Sustainability	★★★★
Efficiency	★★★
Innovation	★★
Cost-saving	★★★

The challenge

Cloud hosting and computing continue to grow YOY. Worldwide revenue from the public cloud will grow by 17% this year to **$266.4 billion.** A record-breaking 60% of organisations will be using an external cloud provider's services offering by 2022. At the same time, the industry is facing several challenges such as rising costs, elevated levels of waste, rising energy costs and the need for high-density computing.

PeaSoup was founded based on the mission to provide a cloud service disruptively using new technologies. In recent years, there has been a movement towards greener cloud services however, when investigated deeper, many of the actions taken by companies, providers or customers may be considered **'greenwashing'**. Greenwashing refers to the practice of **marketing a company to environmentally friendly or more ecological when the actions have no measurable positive impact, example carbon offsetting**. PeaSoup utilises Immersion cooling to offer businesses a cost-effective, energy-efficient, sustainable cloud solution without additional costs.

Customers now have the power to make sustainable choices for their business.

Type of Solution

PeaSoup ECO Cloud = SmartPodX + SuperMicro IT servers

Availability

Gatwick, England, UK

Highlight

PeaSoup is the only green, fully liquid-cooled cloud provider in the UK

Industry

Cloud Hosting

Did you know that each adult contributes up to **10kg** of CO_2 emissions annually, just from storing unwanted pictures on their mobile phone? Can you truly say that you and your business are doing enough?

With solutions like the one **PeaSoup and Submer** offer, businesses now can be aware of the impact of their environmental impact and make a **conscious decision** to store their data in a more sustainable manner.

PeaSoup was keen to find a new liquid Immersion cooling supplier that fully recognises, understands, and supports the needs of cloud providers (CP).

PeaSoup was satisfied that Submer could deliver the solution needed to support the company's **innovative and forward-thinking green approach to data centre/cloud hosting and data storage** without compromising other business concerns such as security, density, costs and scalability.

PeaSoup was also keen to partner with Submer to utilise the SmartCoolant, the biodegradable and environmentally friendly dielectric liquid in each of Submer's Immersion tanks. PeaSoup believed that the **SmartCoolant offered unique advantages and further strengthened its stance on environmental challenges in comparison to other Immersion liquid cooling providers**. Submer and PeaSoup believe that being green is a mindset and ensure these filters into every aspect of the business.

Submer's SmartPodX was chosen by PeaSoup for its server capacity, energy consumption and small footprint. It holds up to 21U servers and with an energy consumption of 750W, the pod is the perfect fit for PeaSoup's tier 3 data centre.

Powered by Immersion cooling, the tank offers higher **efficiency and better sustainability** where users and customers can **reduce their overall power and water usage and reduce their overall carbon emissions**.

Using Submer's solutions has enabled PeaSoup to:

- Offer their clients the chance to reduce their impact on the environment, specifically net-zero carbon emissions
- Provide businesses with simple and cost-effective cloud services that are considered truly green without offsetting or carbon credits
- Successfully equip companies with the necessary technology to meet the current and future standards and regulations imposed by the EU (European Union) in relation to sustainability and ESG outlooks

The environmental benefits arch above CO_2 reductions, for example, the IT equipment immersed in a dielectric liquid is more reliable with predictions of very minimal outage rates and the length of service to prolong by more than 40%.

Long maintenance intervals and savings on the manufacturing of new IT equipment add to the sustainability benefits.

1. The server immersed in dielectric liquid runs **50% - 70% cooler**, and therefore requires much less power to operate.

2. The Power Usage Effectiveness, (PUE) of the SmartPodX unit represents a real **1.011** mark.

3. The immersed servers are expected to have a much longer life span up to **40%**, with less stress on the components, and long maintenance intervals, thus more reliable.

As an example, a liquid-cooled data centre with just 100 server racks and 20 IT servers in each unit, which is still classified as a small data centre, the reductions in the CO_2 emissions would be about 4000 tonnes per year.

PeaSoup is one of the most dynamic and energy-efficient cloud providers in the UK, using up to **60% less energy** than on-premises data centres. PeaSoup actively searches for other companies that align with their green credentials and values. **Its liquid-cooled servers are housed in the Gatwick data centre in the UK, a facility that is powered already by 100% renewable energy**. PeaSoup ensures the service they offer has a measurable impact on the environment, enabling companies to be held accountable for their sustainable initiatives rather than simply greenwashing.

Choosing a company as PeaSoup delivers:

- Reliable, scalable & sustainable cloud platform
- Cutting-edge liquid cooling technology
- High availability
- Environment for high demanding applications
- Reliable, scalable & sustainable cloud storage
- 100% Eco-friendliness

Check out PeaSoup's LIVE impact calculator ***here***

The impact on the industry

Until now, cloud computing has often been set up using a traditional data centre architecture, often considered rack infrastructure cooled by air conditioning technologies. While this has been sufficient, it has become apparent that with data consumption on the rise, and therefore data centre industry expansions, **this type of cooling creates even more challenges to the already quite fragile environmental ecosystem**, and new cooling methods are urgently needed to mitigate.

Data management and storage are a concern for every business. While there is a plethora of options, businesses must consider how their choices will be perceived by their customers or users. As consumers become more aware of the impact of data, businesses can expect to be held to higher standards of corporate responsibility.

Investing in green technologies now ensures you are protecting and preparing your business from future regulatory changes and positing your brand as one that is proactive in overcoming the challenges of sustainability. **Companies that invest in green technologies will be better equipped to meet future government obligations and customers**. Immersion cooling is a great alternative for a variety of reasons that address current business and corporate responsibility issues.

Liquid cooling technology provides a highly effective deployment, up to 30% energy saving, performance increase and simplification of data centre design including an increase of IT infrastructure density up to 10 times.

Compared to air cooling, Immersion offers the following benefits:

- Huge energy savings, measured at using 20% less power than the equivalent air-cooled servers
- Minimal water consumption (closed-loop cooling)
- Increase in reliable operations / extend ed hardware lifespan
- Increased productivity and extended SLAs
- Improved work environment – no noise pollution, stable temperature environment
- Increase in efficiency and sustainability

PeaSoup, Submer and SuperMicro have provided a solution that easily enables its customers to stay competitive while reducing carbon footprint. All with minimal adaptions to their current infrastructure. Users and customers can truly measure their impact on the environment. PeaSoup's customers earn the benefits of lower power usage and better efficiency and sustainability, thanks to Immersion cooling.

What next?

PeaSoup wants an 'ECO cloud' to become the norm

PeaSoup has presented a strong business model for a sustainable cloud, and how it is possible to do this at scale without the associated large costs or major adaptions of an existing data centre setting. The cloud industry can no longer be seen to be green they must take the necessary steps to be green!

PeaSoup hopes to expand its business beyond the UK market and provide businesses with a cloud solution with green technologies at its core. The company has a strong vision that all its data centres will be powered by renewable energies by 2025 and contribute to a heat reuse scheme that will benefit local authorities and public buildings.

Ask yourself what technology does your current provider use? Is it truly green? Customers are demanding change, are you ready?

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As the importance of reducing the use of natural resources and lowering overall power usage and levels of CO_2 emissions continues. The SmartPodX is the best solution to address the challenge of high density in an eco and environmentally friendly manner. We are very pleased to have been selected by PeaSoup to help it achieve its goal of bringing and providing the cloud and hosting industry a truly green solution."

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Daniel Pope
CEO and Co-founder of Submer

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The industry has been guilty of greenwashing over recent years where its commitment to eco-friendly strategies and technologies is superficial at best. PeaSoup is committed to providing cloud and hosting services that have a measurable impact on the environment. This tech collaboration with Submer is a unique project that enables us to reach new heights with green cloud solutions. Our investment in the Submer SmartPodX allows us to provide new and existing organisations with a low carbon footprint ECO Cloud service."

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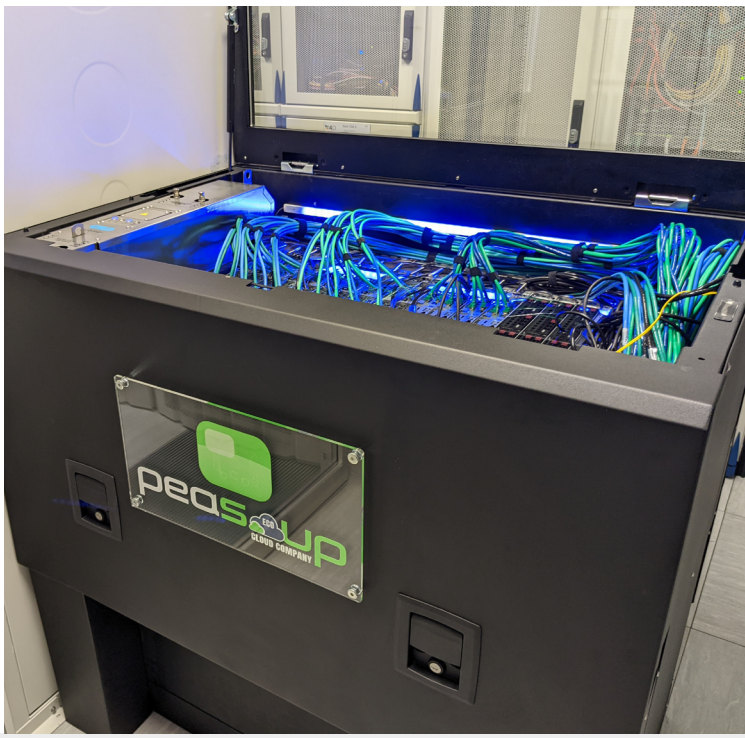
Martin Bradburn
CEO of PeaSoup.Cloud



About PeaSoup

PeaSoup was formed to drive innovation and disruption in the Cloud Market. The PeaSoup cloud uses a hyper-converged infrastructure, and the company was the first in Europe to use this cloud architecture. In striving to find competitive advantages through the innovative use of technology and deliver a more efficient service to the customer, PeaSoup focuses on the environmental controls around the servers in the data centres. For more information please visit: ***https://peasoup.cloud***

About Submer

Founded in 2015, Submer provides best-in-class technology that enables data centers around the world to leverage the power of Immersion cooling for HPC, hyperscale, data centers, Edge, AI, DL and blockchain applications. Headquartered in Barcelona, with offices in Virginia and Palo Alto, California, Submer consists of an international team of engineering, technological and business experts. For more information, visit: ***submer.com***

Know more

Want to know more about liquid Immersion cooling and how we can help?
Visit: ***submer.com***

Want to know more about PeaSoup's ECO Cloud offering?
Visit: ***https://peasoup.cloud/eco-cloud***