



ATOS AND HDF ENERGY TO DEVELOP THE FIRST GREEN HYDROGEN DATACENTER

Paris, February 25, 2021 – Atos and HDF Energy today announce their plan to develop a complete end-to-end long-term solution to supply datacenters with green hydrogen generated by renewable energy. The new solution by Atos and HDF will be the first available on the market for datacenters with heavy power consuming workloads, with the aim to demonstrate, in 2023, a first full production center operated using green hydrogen.

Atos will provide a complete end-to-end green datacenter solution by designing and providing the hardware, software and integration services that make it possible to exploit the electricity produced by green hydrogen so that it can be used in datacenters. This includes using the most advanced Artificial Intelligence (AI) technologies to optimize energy consumption. HDF Energy will supply a power plant, which will provide predictable and firm electricity thanks to its high-powered fuel cells. These cells will be powered by green hydrogen derived from photovoltaic or wind farms.

A major technological challenge

Datacenters have high energy needs, operate 24/7, 365 days a year, and cannot experience the slightest energy flaw. Therefore, the approach taken by Atos and HDF is particularly ambitious, as by its very nature, solar or wind energy is clean but intermittent, variable in its production and unpredictable, making it an unstable energy.

At a time when datacenter energy consumption is becoming a key issue and it is essential to consider new energy models, this new solution from Atos and HDF will enable datacenter operators and cloud operators to anticipate potential future constraints set by regulation authorities and offer a sustainable but reliable solution to their customers, with no compromise on their business.

Combining expertise to reduce the carbon footprint

Atos' solution includes a software layer to predict the datacenter's power consumption needs and adapt the resource (green hydrogen) accordingly. This complex process is not only based on the datacenter's activity and size but also takes into account external data from the environment, such as weather forecasting. To this, Atos brings its HPC expertise – an area in which it, as the leading supercomputer manufacturer in Europe, has several groundbreaking innovations which limit the energy consumption of its systems¹.

Thanks to its expertise in high-power hydrogen technologies, HDF has developed a new type of power plant which is totally stable, non-polluting and competitive, compared to fossil fuel generators. The availability constraints of the datacenter will be incorporated in the design of Renewable® and will enable HDF to offer the highest level of service for the most demanding consumers.

¹ Such as its patented Direct Liquid Cooling (DLC) solution, which minimizes global energy consumption in its supercomputers by using warm water up to 40°C; and its Smart Energy Management Suite, part of its HPC Software Suite, which is used to manage energy whilst optimizing performance, to ensure that clients' HPC systems are as energy efficient as possible with a limited carbon footprint.

"We are constantly seeking to develop solutions to leverage our own sustainable journey towards decarbonization and to support our clients in theirs. In this perspective, the solution to be developed by Atos and HDF will be the first solution available on the market that will enable a full production datacenter with very demanding workloads to be operated using green hydrogen. This meets the expectations not only of operators, but also of the market and public authorities." says **Arnaud Bertrand, SVP, Head of Strategy and Innovation for Big Data & Security at Atos.**

"We are very excited to develop the first-of-its-kind green datacenter with Atos. HDF is a pioneer in hydrogen-energy and it is very important for us to demonstrate that our Hydrogen-to-Power solutions are suitable for customers with a strategic need for a reliable electricity supply. This further development into the digital industry, where energy consumption is increasing every day, opens up a considerable worldwide market for us. The HDF-Atos partnership offers the first unique and sustainable infrastructure for this huge market." says **Damien Havard, CEO at HDF.**

This initiative represents a new and major milestone in Atos' Net Zero 2028 decarbonization ambition. In 2020, Atos has already accelerated its datacenter decarbonization program with encouraging progress in **energy efficiency**, which has materialized into a 15% decrease of global energy consumption of Atos datacenters versus 2019. In addition, **carbon-free and renewable energy** now power 55% of all of Atos datacenters (versus 32% in 2019). Additionally, since 2014, Atos has been providing carbon neutral hosting services to its clients by offsetting 100% of its datacenters' emissions. Atos also recently signed the Climate Neutral Datacenter Pact together with 35 other companies and associations from across Europe, emphasizing the industry's contribution to the 'European Green Deal'.

About Atos

Atos is a global leader in digital transformation with 105,000 employees and annual revenue of over € 11 billion. European number one in cybersecurity, cloud and high-performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos operates under the brands Atos and Atos|Syntel. Atos is a SE (Societas Europaea), listed on the CAC40 Paris stock index.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and members of societies at large to live, work and develop sustainably, in a safe and secure information space.

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About HDF

HDF Energy is a global pioneer in hydrogen energy. HDF develops and operates high-capacity Hydrogen-to-Power power plants to provide continuous or on-demand electricity from renewable energies combined with high-power fuel cells.

HDF has developed two models of multi-megawatt power plants:

- **Renewable® (POWER TO POWER):** stable electricity generation from an intermittent renewable source using locally produced green hydrogen.
- **Hypower® (GAS TO POWER):** On-demand power generation from green hydrogen from gas transportation networks.

HDF has integrated its key fuel cell expertise in and will commission the world's first mass production plant for these high-power fuel cells in France, under the brand name HDF Industry. In addition to energy, HDF Industry will also address the rail and maritime markets.

HDF is thus positioned as a powerful accelerator in energy transition by providing non-intermittent renewable electricity, perfectly adapted to the networks and on-demand, which can reach up to 100% of the energy mix.

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