

Haffner Energy

**LAUNCHES ITS RENEWABLE GAS AND HYDROGEN
PRODUCTION SITE IN MAROLLES (FRANCE),
A TECHNOLOGICAL, COMMERCIAL,
AND INDUSTRIAL SHOWCASE OF
THE COMPANY'S OFFERINGS AND KNOW-HOW**



Haffner Energy

Decarbonize · Innovate · Regenerate



ABOUT HAFFNER ENERGY

HAFFNER ENERGY is a French company that provides solutions for the production of competitive clean fuels. With over 40 cogeneration projects completed (600 MW installed) on three continents, the company boasts 31 years' experience in biomass-to-energy conversion. It has developed innovative biomass thermolysis and gasification technologies that produce renewable gas, hydrogen and methanol, as well as Sustainable Aviation Fuel (SAF). The company also contributes to regenerating the planet, through the co-production of biogenic CO₂ and biocarbon.

HAFFNER ENERGY is the partner of choice for manufacturers and local authorities wishing to build a future based on energy choices that are low-carbon, sustainable and competitive with fossil fuels.

HAFFNER ENERGY is also a key player in the circular economy. By recovering residual biomass, or biomass from crops that regenerate marginal land, without conflicts of use and sourced as close as possible to the points of energy consumption, the company federates local partnerships between public and private players united in their desire to carry out the transition to a decarbonized energy mix. It also responds to the challenge of the green reindustrialization of territories through the creation of local jobs that cannot be relocated.

More information on www.haffner-energy.com

SUMMARY

- 1. Marolles, a showcase for Haffner Energy's know-how** P.5
 - a. Biomass thermolysis, a process at the heart of Haffner Energy's expertise
 - b. Hypergas®, a synthesis gas that can be transformed into multiple clean fuels
 - c. Biocarbon or biochar, a co-product with many benefits
 - d. Biogenic CO₂, a key co-product for the production of e-fuels
 - e. New-generation, state-of-the-art equipment to produce renewable gas and hydrogen, and related products
- 2. A project to better meet the expectations of Haffner Energy's customers and continuously improve its technology** P.9
- 3. Grand Est Region, a laboratory for green reindustrialization** P.11
- 4. A wealth of public support and funding for the project** P.18

Inaugurated on November 22, 2024, Haffner Energy's hydrogen production, testing and training center is intended to produce renewable hydrogen and gas, to carry out tests on various types of biomass, and to train the company's customers and employees. It is a strategic asset for Haffner Energy's commercial and industrial development.



HAFFNER ENERGY's renewable hydrogen production site and testing & training center in Marolles, France, is operational, after a year of site development and equipment installation (e.g. Nov. 16, 2023 [press release](#) and [press kit](#)). Located just a stone's throw from the company's headquarters in Vitry-le-François, in the heart of the «Pays Vitryat» industrial Territory, the site represents a new critical step in the pursuit of **HAFFNER ENERGY's** commercial and industrial development.

The technology developed by **HAFFNER ENERGY** brings a unique and decisive differentiation: its agnostic character to biomass and sustainable organic waste, which makes it possible to exploit considerable deposits without conflicts of use, including manure, slurry, and sewage plant sludge. Biomass, together with mass electrification, make up the two pillars of the energy transition. Without biomass, producing liquid biofuels is impossible, as the carbon used in the composition of these biofuels is necessarily biogenic and therefore always derived from sustainable biomass.

The development of the Marolles site comes after the 2023 acquisition of the nearby Jacquier factory, a general mechanics and industrial boilermaking company located in Frignicourt, and the announcement of **HAFFNER ENERGY's** gigafactory project in Saint-Dizier, a laureate of the France 2030 "First Plant" call-for-projects program operated by Bpifrance¹ (e.g. [press release](#) and [press kit](#) of 16 November 2023).

Marolles site is equipped with standardized next-generation industrial equipment. It allows **HAFFNER ENERGY** to produce commercial hydrogen, while offering its customers and prospects a fully dedicated technological, industrial, and commercial showcase.

The hydrogen produced at this site will contribute to the decarbonization of mobility and industry.

A large display of **HAFFNER ENERGY's** range of solutions is presented here: renewable gas and hydrogen production, electricity co-production, biocarbon production and/or gasification. At the same time, this site allows for tests to be carried out on different types of biomass supplied by customers, as well as to train customers and **HAFFNER ENERGY** employees in the use of the equipment marketed by the company.

Intended to operate continuously for 8,000 hours per year, this site entered the renewable gas production phase (syngas) in June 2024. Hydrogen production is to be commissioned in the next few weeks.

1. Bpifrance (or Banque publique d'investissement) is a French public sector investment bank. It is a joint venture of two state owned enterprises: the Caisse des dépôts et consignations and EPIC BPI-Groupe (formerly EPIC OSEO).

1. Marolles, a showcase site for Haffner Energy's offering and know-how

| a. Biomass thermolysis, a process at the heart of Haffner Energy's expertise

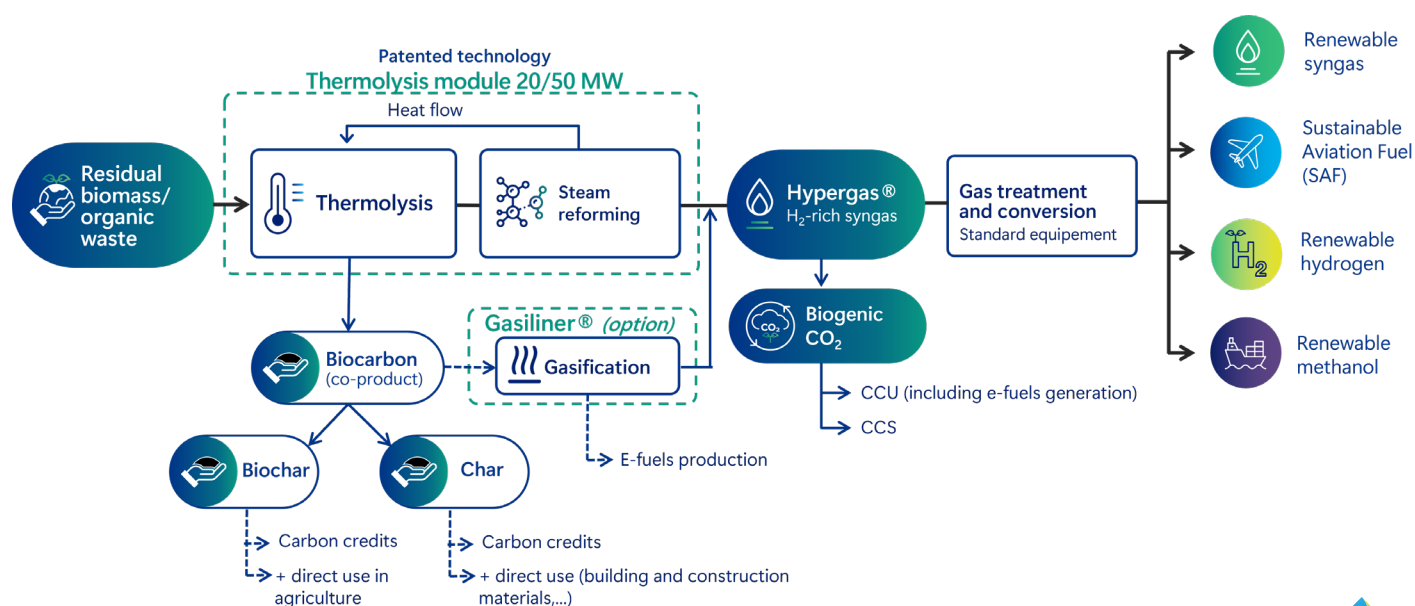
With 31 years of experience generating energy from diverse types of biomass, **HAFFNER ENERGY** has developed one of the world's most advanced technologies for the energy conversion of biomass residues and sustainable organic waste into renewable gases and liquid fuels: biomass thermolysis.

Protected by 15 patent families, or 80 international patents, biomass thermolysis makes it possible to decompose residual biomass (mainly from agricultural and forestry activities) or sustainable organic waste by heating it to very high temperatures (around 500°C). Combined with reforming the gases resulting from thermolysis (or steam reforming, a chemical reaction), this process produces a highly energetic and hydrogen-rich syngas called Hypergas®.

The major differentiating feature of the proprietary technology developed by **HAFFNER ENERGY** is that it is indifferent to the type of biomass or sustainable organic waste used. This feature makes it suitable for many projects worldwide that cannot rely solely on local forestry biomass, in particular Sustainable Aviation Fuel (SAF) projects that require large volumes of inputs. This unique characteristic has led to the company being approached for numerous projects abroad, notably in the United States, which may lead to the SAFNOCA® process becoming one of the world's most widely used processes for SAF production.

| b. Hypergas®, a syngas that can be transformed into multiple clean fuels

With a high concentration of hydrogen (>45% vol) and a low level of impurities compared to other standard syngases, Hypergas® is a high value-add renewable gas derived from the technology developed by **HAFFNER ENERGY**. Processed for use as a substitute for fossil natural gas, it can also be transformed into renewable hydrogen, methanol, and Sustainable Aviation Fuel (SAF).



| c. Biocarbon or biochar, a co-product with many benefits

One of the particularities of **HAFFNER ENERGY**'s proprietary technology is to co-produce biocarbon or biochar. A solid material rich in carbon, biocarbon contains biogenic carbon absorbed from the atmosphere by plants via photosynthesis. This characteristic makes it a major carbon sink, in particular when it is used as a soil amendment (it is known then as biochar): after subtracting all the emissions related to the process (equipment manufacturing, transport, operation, etc.), carbon sequestration is above 2 metric tons (tonnes) of CO₂ equivalent per tonne of biocarbon. As such, biocarbon can be traded on the voluntary carbon market via carbon removal certificates (CORCs).



Biochar has thus been identified by the Intergovernmental Panel on Climate Change (IPCC) as one of the most effective solutions to fight climate change, with a sequestration potential between 0.3 Gt and 6.6 Gt of CO₂ per year (IPCC, AR6, WGIII), thanks to its long-term carbon sequestration properties and multiple co-benefits. The biochar produced by **HAFFNER ENERGY**'s technology is also eligible for the European Biochar Certificate (EBC), which guarantees its quality.

More than 50 possible uses for biocarbon have already been identified, from the amendment of agricultural soils by direct application or incorporation into fertilizers (biochar) to incorporation into building materials (char), improving the thermal properties of materials while neutralizing the carbon footprint of road or building construction projects, for example.

On the other hand, biocarbon is a very dense source of renewable energy (31 MJ/kg) that can be gasified on site to increase the production of biofuels such as SAF or renewable hydrogen. It can also be shipped to another site to be gasified, in particular to provide the biogenic carbon needed to produce e-fuels¹.

| d. Biogenic CO₂, a key co-product for e-fuels production

Carbon is the raw material used by plants to grow. They absorb it from the atmosphere in the form of carbon dioxide (CO₂) and convert it with energy from the sun through photosynthesis. The carbon contained in biomass is referred to as "biogenic carbon".

The production of sustainable fuels (biofuels and e-fuels such as e-methanol and e-SAF) requires a combination of renewable hydrogen and biogenic carbon. The emission of biogenic CO₂ is considered carbon neutral, since the carbon in this case was previously absorbed by plants, unlike anthropogenic CO₂ released by fossil fuels which increases the quantity of CO₂ of in the atmosphere.

¹ E-fuels are synthetic fuels or electrofuels produced from renewable or low-carbon electricity, carbon dioxide or nitrogen in the case of e-ammonia, and hydrogen from water electrolysis.

Hypergas®, the renewable rich syngas produced by **HAFFNER ENERGY**'s patented biomass thermolysis process, is mainly comprised of hydrogen (H₂) and carbon monoxide (CO). These two molecules can be recombined to produce liquid biofuels (SAF or methanol). For hydrogen production, CO energy is recovered to increase hydrogen production, releasing CO₂, which is separated from the gas. This biogenic CO₂ can be used to produce e-fuels (each metric ton of biogenic CO₂ can produce 727 kg of e-methanol). The surplus can also be used in other carbon capture and utilization (CCU) applications requiring biogenic CO₂ as a raw material (food processing, industry). It can also be stored geologically (carbon capture and storage - CCS).

e. New-generation, state-of-the-art equipment to produce renewable gas and hydrogen, and related products

A TEPC (Treatment Epuration Purification Compression) unit has been added to the thermolysis module. This equipment converts the renewable gas produced, a hydrogen-rich syngas (Hypergas®), into mobility-grade hydrogen. The site's operations will produce up to 15 kg of hydrogen per hour, i.e. almost 120 tonnes per year.

In Marolles, a new-generation thermolysis module

The standardized series production module installed in Marolles is the most advanced ever developed by **HAFFNER ENERGY**. Its technological characteristics have made it possible to improve the **biomass thermolysis** process, the volumes of biomass being treated, and the ability to recover part of the energy produced to reinject into the production process.

This module can process about 450 kg of material per hour, compared to 200 to 300 in its previous versions.



Marolles will be home to a Gasiliner®, the latest innovation designed to gasify biocarbon and significantly increase syngas production

Marolles will be home to a Gasiliner®, currently being installed. This proprietary technology enables the gasification of co-produced biocarbon to increase the output of the thermolysis module. The Gasiliner® has the unique ability of being biomass agnostic. It provides a competitive solution to biochar.

The Gasiliner® gasification process converts solid carbon into hydrogen and carbon monoxide. This conversion takes place at high temperatures (> 1,000°C) with the addition of steam. Gasiliner®'s unique property is its indifference to ash-melting temperatures and to very high ash contents, ensuring the technology is strictly biomass agnostic. This is a strong differentiator for SAF and e-SAF projects, as demonstrated by the partnership with Icelandic

green hydrogen and sustainable fuels project developer IðunnH2, for the e-SAF production plant project it is developing near Keflavík International Airport in Iceland (see [press release of September 2, 2024](#)). In Iceland, where limited volumes of local biomass reduce access to biogenic carbon, yet an essential component for SAF production, **HAFFNER ENERGY's** provision of solid biocarbon gasified onsite by Gasiliner® will provide a highly competitive and flexible alternative to the conventional option of biogenic CO₂, a gas that is costly to capture, transport and store.

Gasification with **HAFFNER ENERGY's** Gasiliner® will significantly improve a site's productivity, while providing an economically relevant alternative to char/biochar. It will also significantly increase syngas production per unit of biomass used, a priority for sustainable fuel production projects where access to local, affordable biomass is the most critical issue.

"Independent of the thermolysis module, Gasiliner® can gasify biocarbon from all types of biomass, especially those whose ash is pasty and sticky due to a relatively low ash-melting temperature, which is the case for most agricultural residues", says **Marc Haffner**, co-founder of Haffner Energy, Deputy CEO and CTO at Haffner Energy.



2. A project to better meet Haffner Energy's customers' expectations and continuously improve its technology

| a. Testing all types of biomass residues

As a testing center, the Marolles site has the unique and differentiating vocation of carrying out tests on different types of non-conventional biomass supplied by **HAFFNER ENERGY**'s customers and prospects. These include algae, cereal straw, manure, industrial or sewage plant sludge, municipal waste, or the organic fraction of household refuse.

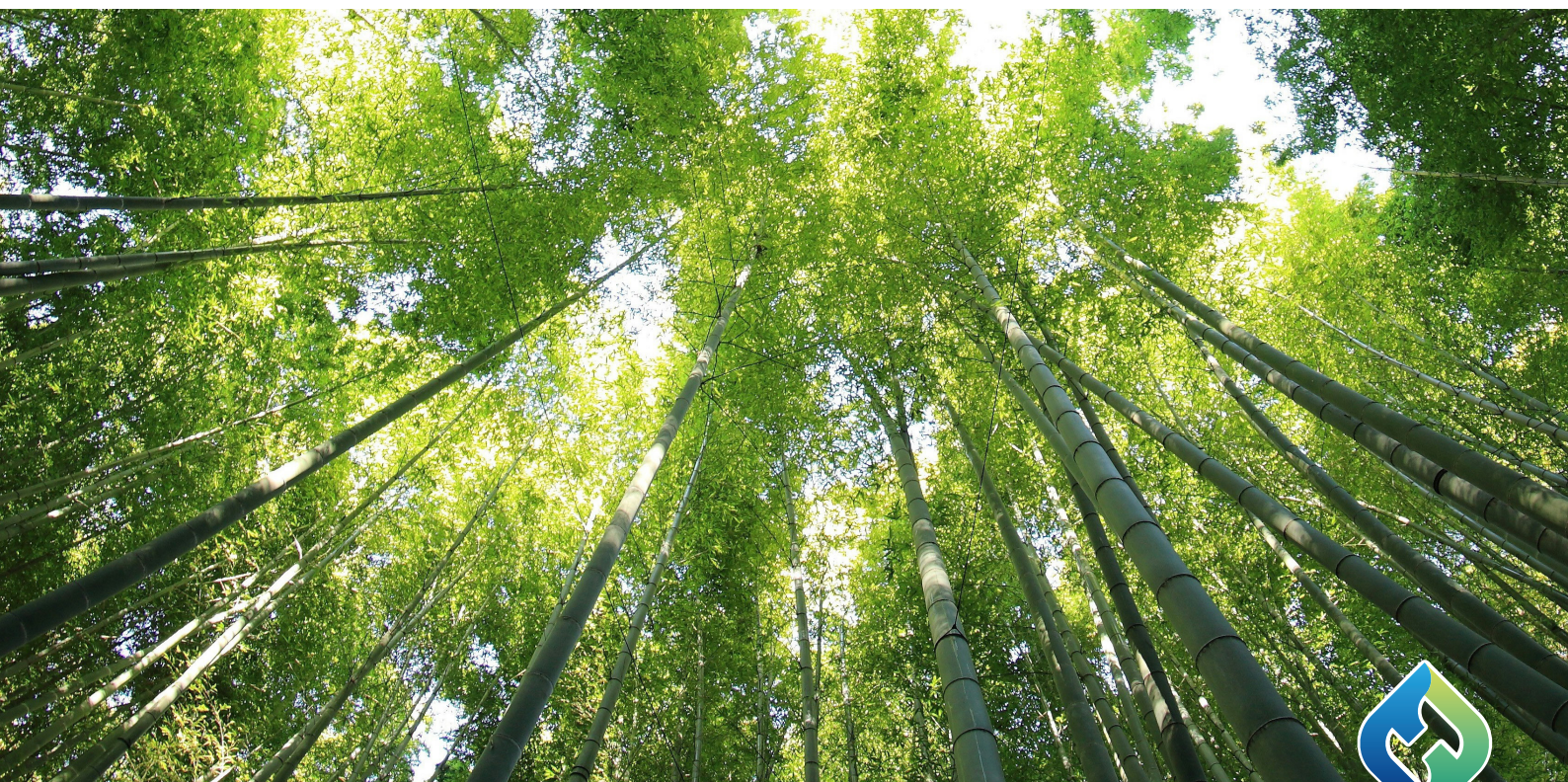
Thanks to its 31-year experience in biomass-to-energy conversion, **HAFFNER ENERGY** has perfect mastery of the pre-treatment process (drying, shredding, blending according to the seasonality of biomass types, etc.) to get the best yield from its thermolysis process.

| b. Monitoring maintenance plans

The continuous operation of the equipment at the Marolles site is also designed to enhance technical reliability over time. Numerous sensors monitor the wear-and-tear and the behavior of certain parts over the long term, providing a more detailed knowledge of the equipment as they generate data for an AI-driven predictive analysis developed by **HAFFNER ENERGY**. The objective is being able to anticipate future maintenance operations by accurately identifying the controls and maintenance operations that need carrying out.

| c. Training Haffner Energy 's customers and employees

As a training center, the Marolles site will train **HAFFNER ENERGY**'s employees and customers with operating and maintaining the company's equipment.





PHILIPPE HAFFNER

Co-founder and Chief Executive
Officer, Haffner energy

Our Marolles site is an essential asset in our commercial and industrial development strategy. Welcoming and training our customers from all over the world on our own site, presenting them with the range of our know-how is a major turning point. Selling the hydrogen produced on this site at a competitive price will contribute significantly to decarbonizing Grand Est Region. Some 2,400 tonnes of CO₂ per year will be avoided or captured, thanks to green hydrogen and biochar combined. This is an important step towards building the renewable hydrogen ecosystem in Europe and worldwide.



MARC HAFFNER

Co-founder, Deputy Chief Executive
Officer & Chief Technical Officer,
Haffner Energy

Marolles presents the most advanced version to date of our renewable gas and hydrogen production modules. Our cutting-edge equipment and the attention paid by our field teams to constantly improving the quality and performance of our processes enable us to demonstrate to the world the performance of a technology that has already been on the market for 3 years.



3. Grand Est Region, a laboratory for green reindustrialization

Vitry-Marolles was a natural choice as a location. It is located in the immediate vicinity of **HAFFNER ENERGY**'s head office in Vitry-le-François (Marne County), at the heart of Grand Est Region, which is particularly committed to the ecological and energy transition, and to the bioeconomy.

Indeed, Grand Est Region committed itself very early on to the France Nation Verte initiative, launching its "Grand Est Région Verte" by, for, and with local communities in July 2023. Mapping out trajectories for decarbonization, biodiversity preservation, and adaptation to climate change, has set up a framework within which everyone is invited to act. **HAFFNER ENERGY** has actively contributed to this approach in recent months. Last September 27 in

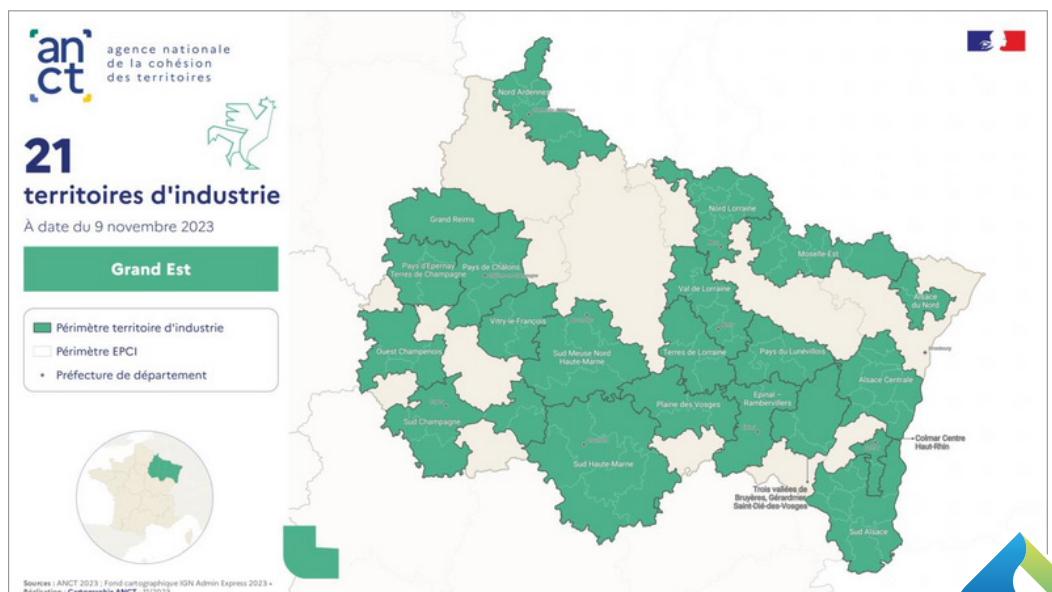
Strasbourg, the first results and the regional roadmap were unveiled by Josiane Chevalier, Prefect of Grand Est Region, and Franck Leroy, President of the Grand Est Regional Council, in the presence of Agnès Pannier-Runacher, Minister for Ecological Transition, Energy, Climate and Risk Prevention. A total of 18 commitments and 30 flagship actions were set out in a regional action plan.

Grand Est Region has developed its Regional Biomass Plan also. This regional planning document defines the main guidelines and actions to be implemented in order to promote the development of biomass production and conversion sectors for energy purposes. It also ensures respect for the multifunctionality of natural areas, particularly agricultural and forestry areas.



September 27, 2024, Conference of the Parties - COP Grand Est: Signature of Grand Est ecological planning roadmap by Franck Leroy, President of the Grand Est Region, Agnès Pannier-Runacher, Minister for Ecological Transition, Energy, Climate and Risk Prevention, Josiane Chevalier, Prefect of Grand Est Region, and Antoine Pellion, Secretary General for Ecological Planning (from right to left).

Photo credits : Bartosch Salmanski / Région Grand Est





FRANCK LEROY
President of Grand East Region

With the inauguration of the center in Marolles, Haffner Energy reaffirms its role as a pioneer in the energy and industrial transition. As the outcome of its leaders' bold vision and its team's talent, this site goes beyond simple production: it is an engine of transformation for our Region, combining innovation, sustainability, and competitiveness. This project embodies the promise of renewable, local energy, creating jobs and a future for Marne County. Grand Est Region is proud to support Haffner Energy in this exemplary adventure, which makes our Region a laboratory for ideas and concrete action to meet the ecological and industrial challenges of our time. Together, we are shaping the foundations of an industrial model for the future, combining economic performance with respect for our planet.

Grand Est Region is also home to the Bioeconomy for Change competitiveness cluster, in which **HAFFNER ENERGY** is particularly active.

Since its creation, Haffner Energy has been embodying to perfection the spirit of innovation and commitment to a sustainable economy that Bioeconomy For Change (B4C) strives to promote. By developing innovative solutions to produce renewable hydrogen and clean fuels from biomass, Haffner Energy is helping to strengthen our energy sovereignty while reducing our carbon footprint.

Bioeconomy For Change (B4C) has been supporting Haffner Energy's projects and developments for over ten years. This support is fully in line with the ecological transition strategy of Grand Est Region, a bioeconomy leader that is actively committed to supporting companies in the sector.

The inauguration of this new site marks a major step forward for the French industry. It exemplifies the concrete impact of our members throughout the Region. We are proud to support Haffner Energy in its projects and to work together to advance the transition towards a more sustainable future.



BORIS DUMANGE
Managing Director of the
Bioeconomy for Change (B4C)
competitiveness cluster

In addition, Marne County, close to Paris, is France's leading agricultural department in terms of Utilized Agricultural Area (UAA). It boasts a remarkably large deposit of agricultural residues.



JEAN-MARC ROZE
President of Marne County

As President of the County, I'm particularly proud to support a Marne-based company that contributes to sustainable development - one of the priorities of my mandate - and to the search for clean energy sources. Haffner Energy, based in Vitry-le-François, is a key player in our Region, contributing to the economic vitality of the Vitry area and Marne County as a whole, for example through the development of Vitry airport's biomass-based aviation fuel production. In a world where energy transition has become essential, hydrogen is an interesting and promising alternative. The Marolles site represents a real feat, with state-of-the-art equipment to produce renewable gas and hydrogen.

We're very proud to see Haffner Energy inaugurate this testing and training center during Industry Week. It's a real demonstration of industrial innovation in support of the energy transition. This place of excellence will not only help to train Haffner Energy employees and their customers, but also to test and perfect sustainable technologies. As a partner of the Region, we welcome this initiative, which is fully in line with national and regional ambitions in terms of renewable energy production. The Terrasolis ecosystem is also ready to collaborate on the resource sustainability and carbon storage fronts to increase the environmental competitiveness of soils.



MAXIMIN CHARPENTIER
President of the Grand Est Chamber
of Agriculture and Chairman
of Terrasolis

Another reason for choosing Vitry-Marolles was its location within the "Territoire d'industrie du Pays Vitryat". This project is directly in line with the objectives of the Territoires d'industrie program, a sound strategy for industrial reconquest, by and for local communities, launched in 2018 and extended in 2023 for four years.

The center meets the 4 priorities of this Act II of the Territoires d'industrie program: accelerating the ecological and energy transition of the Territoires d'industrie, facilitating the territories ambitious innovation ecosystems, removing the obstacles to recruit and develop skills in the Territoires d'industrie, and mobilizing industrial land adapted to the challenges and needs of both industry players and communities.

As a founding project of the Territoire d'industrie du "Pays Vitryat", this site was the subject of an application to "Fonds vert - Territoires d'industrie en transition écologique", a national subsidy program, with the unanimous support of the area's elected representatives and manufacturers.



I salute the commitment and ambition of Haffner Energy, based in Vitry-le-François, in the heart of our Grand Est Region and my constituency.

The inauguration of the testing and training center in Marolles represents a new milestone in the ambitious development of this company. Deeply rooted in the Marne County ecosystem, Haffner Energy is positioning itself as a real driving force in the energy transition, offering innovative hydrogen production solutions at competitive costs, thanks to its biomass thermolysis technology, to players in mobility, industry, and local authorities. It symbolizes the essential link between innovation and value creation in local communities.

This inauguration marks the start of a new phase in the development of innovative, environmentally friendly energy production solutions. For all these reasons, Haffner Energy and its innovative decarbonization solutions fit in perfectly with the Territoires d'industrie program, which promotes industrial revival in rural areas.



CHARLES DE COURSON

Member of Parliament for Marne County, General Budget Rapporteur at the French National Assembly



LISE MAGNIER

Member of Parliament for Marne County

Haffner Energy is exemplary in the solutions it has developed for renewable energy production with a neutral-to-negative carbon footprint, combining this with major support for our agriculture. With over 80 patents registered and a 31-year experience, Haffner Energy is a company that embodies France's capacity for research and innovation.

Today, as a major player in the current and future energy transition, the company's entire team is driven by two connected goals: the production of renewable energies and the reindustrialization of our local communities.

The inauguration of Haffner Energy's testing and training center in our County is an event that marks a major step in the development of this company, a real jewel in our crown. Congratulations on this milestone and long live Haffner Energy!



Focus on the Territoires d'industrie initiative in Grand Est Region

The Territoires d'industrie initiative was launched by the Prime Minister at the National Industry Council on November 22, 2018, for the period 2018-2022. The program is part of a strategy to regenerate industry and promote local economic development. In June 2023, a new phase of the Territoires d'industrie program was announced, with a view to awarding the label for the period 2023-2026. Some 183 territories were selected nationwide, including 5 in Marne County. The 4 priorities are skills development, innovation, ecological transition, and industrial real-estate.

This new phase in the Territoires d'industrie program offers a number of benefits for the local communities awarded the label: the creation of a local Territoires d'industrie project manager position, co-financed by the State, for each territory; the set-up by public authorities of a comprehensive engineering offer co-financed by the ANCT (National Agency for Territorial Cohesion); and the accompaniment of industrial project leaders towards co-financing opportunities included in the "Territoires d'industrie in ecological transition" envelope as part of the Fonds vert (4.763 million euros for Grand Est in 2024).

Among the 5 Territoires d'industrie of Marne County, for the first time the 3 intercommunal entities of the Vitry-le-François district have decided to work together on a project in their area – the Pays Vitryat.

The governing body is composed of elected representatives and companies. It comprises ADEVA Pays Vitryat, the 3 municipality communities of Côtes de Champagne & Val de Saulx, Perthois Bocage & Der, and Vitry Champagne & Der, as well as the companies **HAFFNER ENERGY**, Actemium, Malteurop, and Bio Forêt Solution.

The Pays Vitryat's Territoire d'industrie is based on an action plan comprising 8 concrete measures focusing on training, welcoming new employees, providing mobility to business sites, mobilizing land, protecting water resources, and extending the biomass-based heating network to industrial firms.

The joint work carried out by elected representatives and business leaders has made it possible to draw up a roadmap based on a pragmatic diagnosis of the area's needs.

Recruited in October 2024, Pauline Lanfroy, the project manager for Pays Vitryat's Territoire d'industrie, will coordinate this project at the local level.

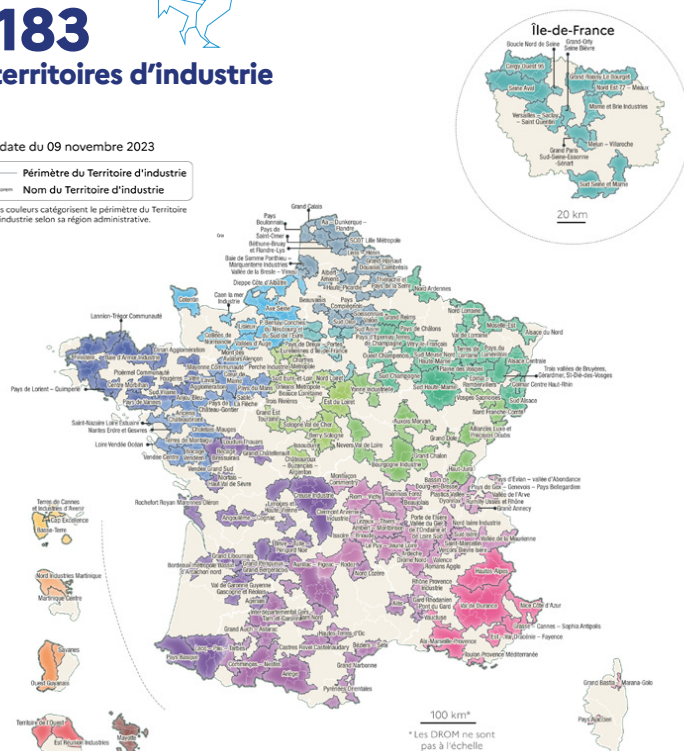
NOUVELLE CARTE DU PROGRAMME TERRITOIRES D'INDUSTRIE à l'issue des candidatures (juin - sept)

183
territoires d'industrie



À date du 09 novembre 2023

— Périmètre du Territoire d'industrie
Nom du Territoire d'industrie
Les couleurs catégorisent le périmètre du Territoire d'industrie selon sa région administrative.



Sources: ANCT, 2023; Fond cartographique IGN Admin Express 2023 • Réalisation: Cartographie ANCT 10/2023

13

<https://www.economie.gouv.fr/le-gouvernement-selectionne-183-nouveaux-territoires-dindustrie#>





HENRI PREVOST
Prefect of the Marne department

After decades of de-industrialization, the French government has decided to massively re-industrialize the Nation by supporting companies whose projects are forward-looking or in transition towards better carbon-free solutions.

The Territoires d'industrie program is part of this strategy and ambition, which is being rolled out in Marne County from Greater Reims, to Epernay, Sézannais, Châlons and Vitryat municipality communities, and is fully in line with this strategy of creating new local industrial wealth.

Haffner Energy is fully integrated into this approach. It is for this reason that the French government is supporting its development and dynamics. The Haffner Energy testing and training center inaugurated today is a further step in the development of this local company. It is a testimony to the dynamism of this innovative enterprise whose activity is a driving force for the Region.

The national ambition of a decarbonized and sovereign industry requires the strengthening of our industrial territories, particularly in terms of innovation and skills development.

Haffner Energy's testing and training center, with its new resources for production, experimentation, and training, will help accelerate decarbonization and the energy transition. Its location at the heart of the Territoire d'industrie du "Pays Vitryat" is a testimony to the strong partnership between industry, elected representatives, and public institutions. The Territoires d'industrie program salutes this proximity in the service of innovation and Haffner Energy's commitment to the green reindustrialization of the Vitryat region.



JEAN-BAPTISTE GUEUSQUIN
Director, Territoires d'industrie Program

TEMPS II

Poursuivre et amplifier la réindustrialisation par et pour les territoires

Le 11 mai 2023, le Président de la République présente l'État de la France la championne de l'industrie verte en Europe et annonce le lancement d'une nouvelle phase du programme Territoires d'industrie.

Condition nationale d'une industrie souveraine et décarbonée se traduit par la mise en œuvre de la stratégie nationale de l'industrie verte en France, au cœur de la transition écologique, de la souveraineté industrielle et de la compétitivité.

La mise en œuvre de la stratégie nationale de l'industrie verte en France, au cœur de la transition écologique, de la souveraineté industrielle et de la compétitivité, est assurée par le plan à l'échelle locale en accompagnant la structuration des projets et en favorisant les synergies entre acteurs industriels, publics et privés.

Le programme Territoires d'industrie conserve son caractère fédérateur des projets et sa gouvernance tripartite :

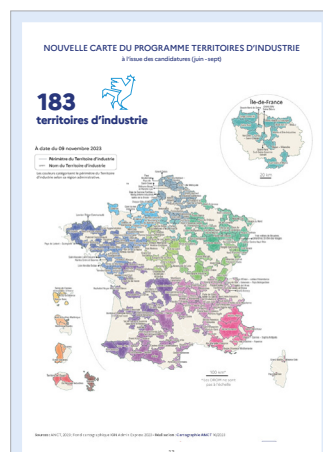
- LOCALE** : Initiative ancrée par un dialogue d'industrialisation appuyé par un chef de projet.
- RÉGIONALE** : Initiatives structurées pour coordonner la démarche, définir les orientations stratégiques.
- NATIONALE** : Mise en cohérence de l'offre de services et de l'accompagnement des territoires par l'État et les collectivités territoriales.

Comité de pilotage : Instance de concertation et de suivi de la mise en œuvre de la stratégie nationale de l'industrie verte en France.

Comité de suivi : Instance de suivi de la mise en œuvre de la stratégie nationale de l'industrie verte en France.

4 AXES

- ACCELERER LA TRANSITION ÉCOLOGIQUE ET ÉNERGÉTIQUE
- ACCROÎTRE LA PRODUCTIVITÉ INDUSTRIELLE
- ACCROÎTRE LA DURABILITÉ INDUSTRIELLE
- ACCROÎTRE LA SÉCURITÉ INDUSTRIELLE



100 millions d'euros d'investissement

DÉVELOPPER EN TERRITOIRES D'INDUSTRIE DES CHAINES DE VALEUR INDUSTRIELLES CLÉS POUR LA TRANSITION ÉCOLOGIQUE

En lien avec la stratégie d'industrialisation de la transition écologique et de réindustrialisation des territoires, l'État soutient les projets d'investissement industriel et innovant au sein des territoires d'industrie.

QUELS PROJETS PEUVENT ÊTRE FINANCÉS ?

Les projets soutenus sont principalement des projets d'investissement industriel structurant et ambulant sur le long terme, tels que :

- Des projets innovants en matière de production, de distribution, de gestion des déchets, etc. et qui contribuent à l'écologie, à la transition énergétique et à la réindustrialisation des territoires.
- Des projets innovants en matière de production, de distribution, de gestion des déchets, etc. et qui contribuent à l'écologie, à la transition énergétique et à la réindustrialisation des territoires.

EXEMPLES DE CHAINES DE VALEUR CLÉES

- Hydrogène vert pour la production d'électricité et de chaleur.
- Énergie renouvelable pour la production d'électricité et de chaleur.
- Énergie renouvelable pour la production d'électricité et de chaleur.

COMMENT DÉPOSER UN DOSSIER ?

Le dossier doit être déposé par le DREAL, le DDT ou la Délégation aux Territoires d'Industrie vers le Comité de pilotage des Territoires d'Industrie.



Combining innovation, industrial research, and energy savings to anchor businesses and develop employment, is a priority for the area. Since 2010, the municipality community of Vitry, Champagne & Der has been resolutely committed to the energy transition, notably by defining 33 concrete projects in line with our priorities: decarbonizing the region, developing energy production capacity, contributing to the reindustrialization of the local fabric, and developing local employment.

It is in this context that we have been supporting Haffner Energy, from its incubation at La Fabrique to the launch of its hydrogen production, testing and training center in Marolles, a true turning point for the company and the Region. The municipality communities of Vitry, Champagne & Der, Perthois Bocage & Der, and Côtes de Champagne & Val de Saulx have also joined forces to achieve these objectives through the creation of the Territoire d'industrie du "Pays Vitryat". Haffner Energy, like all Pays Vitryat companies, knows that it can keep counting on the support of this area's local authorities to achieve success.



JEAN-PIERRE BOUQUET
President of the municipality
community of Vitry,
Champagne & Der



PASCALE CHEVALLOT
President of the municipality
community of Perthois,
Bocage & Der



PASCAL TRAMONTANA
President of the municipality
community of Côtes de
Champagne & Val de Saulx

Pays Vitryat has been labelled Territoire d'industrie since November 2023. This program aims to strengthen the attractiveness and competitiveness of local communities by supporting their industrial development. At Pays-Vitryat level, elected representatives and industry members have defined 8 actions based on 4 main axes: jobs and skills, ecological transition, innovation, and industrial real-estate. The first achievements should emerge in early 2025, with the opening of a welding training course at Vitry-le-François GRETA (federation of local public training institutions), in partnership with the Welding Institute.

As Project Manager, my role is to mobilize local players to create an ecosystem that is fertile for industrial growth. Today, I position myself as a facilitator, encouraging dialogue and collaboration between the various stakeholders.

The Territoires d'industrie program is a real opportunity to make our local know-how known and recognized. Above all, it's a question of drawing on our history and skills to revive a genuine industrial dynamic.



PAULINE LANFROY
Territoires d'industrie project
manager for Pays-Vitryat



4. A wealth of public support and funding for the project

This project was made possible thanks to the support of local elected representatives and a number of grants:

- 88,655 euros from the **municipality federation of Vitry, Champagne & Der**, in the form of real-estate investment aid for the acquisition of the Marolles site (1.5 hectares).
- 45,351 euros via the **Fonds National pour l'Archéologie Préventive (FNAP)** for archaeological excavations by INRAP.
- 500,000 euros via the **France 2030 Regionalized** program, co-financed by the French government and Grand Est Region and operated by Bpifrance.
- 400,000 euros via the **"Fonds vert - Territoires d'industrie en transition écologique"**.

December 2023: The site during the archeological excavations.



Focus on the preventive archaeology excavation process

Following Haffner Energy's request to INRAP in the autumn of 2023, the archaeologists moved in very quickly, in order to comply with a very tight schedule despite very difficult weather conditions.

Unearthed remains include pits, post-holes, grain silos, wells, and walls. The study is still in progress, so the results are not yet definitive. We can already confirm that the walls date from the 19th or early 20th century. The other remains date from the Final Neolithic (3500-3200 B.C.), First Iron Age and Second Iron Age (800-50 B.C.) periods. These remains belong to dwellings built of earth and wood (load-bearing posts, half-timbering, and cob). One of the shafts has revealed wooden casing elements, which are currently being studied by dendrochronologists for more precise dating.



STÉPHANE SINDONINO

Deputy Scientific and Technical
Director, INRAP (Institut National de
Recherches Archéologiques Préventives)

Created in 2002, the Institut National de Recherches Archéologiques Préventives (INRAP, French National Institute for Preventive Archaeological Research) is a public research agency under the supervision of the Ministries of Culture and Higher Education and Research. It is responsible for the detection and study of archaeological heritage affected by land development projects. In particular, INRAP carries out archaeological diagnostics and preventive archaeology excavations. It exploits and disseminates the results of its research to the scientific community and contributes to the teaching, cultural dissemination, and promotion of archaeology to the general public.

The Regional Archaeology Service (SRA) of the Direction Régionale des Affaires Culturelles (DRAC, Regional Authority of Cultural Affairs) examines each land development project and an archaeological diagnosis is prescribed by the Region's prefect (regional representative of the State). The latter may be carried out by INRAP or the approved local archaeological services. If the remains uncovered during the diagnosis warrant it, a preventive archaeological excavation is ordered by the prefect after the case has been examined by the SRA. The excavation is then carried out by INRAP or approved public or private operators.



Bpifrance is proud to be supporting Haffner Energy's development since 2016 and to see the projects that we helped finance come to fruition with today's inauguration of its testing and training center in Marolles, Marne County.

As the "Climate Bank", we are convinced that the solution developed by Haffner Energy can play an important role in the decarbonization of our economy. It is with this in mind that we have been actively supporting the company and its executive team from the outset. We now look forward to the large-scale success of the project in France and internationally



JEAN-CHARLES PERRETTE

Regional Director, Grand Est network, Bpifrance



SYLVAIN WASERMAN

Chairman and CEO, ADEME

Haffner Energy is at the forefront of decarbonization solutions for industry and mobility. With the launch of its hydrogen production, testing and training center in Marolles, the company is taking an entire ecosystem along with them into the energy transition.

Through its innovative technologies, which have been recognized by the France 2030 program, Haffner Energy is playing an active role in achieving carbon neutrality by 2050 and transitioning our industry towards more sober and sustainable practices and processes.

As an operator for the French government, ADEME, through its Green Fund - Territoires d'industrie en transition écologique, is proud to support the Haffner Energy project with 400,000 euros. The project is fully in line with the French government's strategy of carbon-free reindustrialization.

The challenges surrounding the Marolles project were many. We were able to overcome, thanks to the unfailing commitment of our employees and the responsiveness and professionalism of our local subcontractors.

In recent months, Haffner Energy has been able to count on the support of the French government and elected representatives. One year after launching the archeological dig and breaking ground, it is with great pride that the entire Haffner Energy team is inaugurating this site. The center is crucial to the company's commercial and industrial development, as well as to the area's economic development. It is one of the flagship projects of the "Territoire d'industrie du Pays Vitryat", in which I have the honor of representing Haffner Energy alongside elected representatives and committed local manufacturers.



LAURE BOURDON

Chief of Staff, Communication and Public Affairs Director, Haffner Energy



HAFFNER ENERGY, TRUSTED REINDUSTRIALIZATION PARTNER IN THE REGION

Our vision: To regenerate our planet for future generations by avoiding 200 million annual tonnes of CO₂ by 2034.

Haffner Energy was born of a simple observation: faced with the urgency of climate change, it is up to all of us to develop and implement concrete solutions that can reverse the curve of our CO₂ emissions. Through its technology, Haffner Energy aims to make a direct contribution to decarbonization by **reducing CO₂ emissions by 200 million tonnes per year by 2034.**

We aspire to a world in which various types of decarbonized and sustainably renewable energies power our living and working spaces, our industrial and agricultural production, our mobility and our freight transport, with a neutral or even regenerative impact on our environment and our lifestyles.

We know that it is possible to meet these challenges through a new industrial model that is both ecologically and economically sustainable.

We are convinced, in this context, that our carbon-negative energy solutions have a strong role to play in helping to define the decarbonized, sustainably renewable, and competitive energy supply that is essential to present and future generations.

Our vision is based on functional, implemented, and proven approaches. By proactively reversing the curve of greenhouse gas emissions, we are demonstrating that the changes needed to tackle climate change are both feasible and robust over the long term.

Our mission: To develop competitive, sustainable, and carbon-to-negative renewable energy solutions that contribute to the regeneration of the planet.

We operate locally: Our modules enable our customers to use local residual biomass to produce competitive renewable energy at the point of consumption. In this way, we contribute to the creation of local virtuous ecosystems.

Our customers, shareholders, and employees, as well as political decision-makers and the general public, recognize that the solutions developed by Haffner Energy are part of an energy transition that is :

€ **Profitable**, because the main obstacle to replacing fossil fuels is economic and the solutions we implement are already competitive with fossil fuels.

☙ **Sustainable**, because the production of renewable energies from sustainable biomass and the co-production of biogenic CO₂ and/or biochar, a true carbon sink, sustainably removes CO₂ from the atmosphere;

🤝 **Virtuous**, because our process fuels the circular economy and generates shared value for our customers and their stakeholders, for local communities, and for society as a whole;

🧑 **Responsible**, because our solutions help reduce tensions over energy and agricultural resources, as well as conflicts between environmental, economic, and societal imperatives.

OUR GOAL IS TO HELP OUR CUSTOMERS ACCELERATE THEIR TRANSITION TO “NET ZERO EMISSIONS” AND ACTIVELY PARTICIPATE IN THE EMERGENCE OF A LOW-CARBON GLOBAL ECONOMY.





Haffner Energy

Decarbonize · Innovate · Regenerate

MEDIA RELATIONS

HAFFNER ENERGY

Laure Bourdon +33 (0)7 87 96 35 15

laure.bourdon@haffner-energy.com

Laetitia Mailhes +33 (0)6 07 12 96 76

laetitia.mailhes@haffner-energy.com

