



Light Rail (UK)*

*(The trading name of Light Rail Solutions UK 2024 Ltd CIC)

**Auchenshuggle Junction, 8 Beechmore,
Moore, Warrington, Cheshire, England, U K.**

Tel (+44) (0)1925 740675 (0) 07721378223



Tritonex ®

The game changing solution to Hydrogen Storage, Transportation, Corrosion and Permeation.
and the only coating in the world certified ISO 17081 for 0% permeation to 900 bar.
Now we can have hydrogen gas at affordable prices for many industries and applications



Very Light Rail

Hydrogen over Fuel cell application and Very Light Rail technology reduces tram installation to less than £10M per kilometre and gives clean air in the town and city streets with no overhead wires and no pollution at the point of use. Ideal for restoring disused former railway lines.

Aerospace Industry:

Tritonex can be used to enable the application of lightweight materials like fibre-reinforced polymers in constructing fuel tanks for the aerospace industry. These materials, while light, do not provide sufficient barriers to hydrogen permeation on their own. Tritonex can significantly reduce the weight of these constructions by enabling new materials while maintaining safety standards.



Railways



Tritonex

Is a state-of-the-art nano-coating with a non-toxic, water-based composition that provides a complete isolation barrier between hydrogen gas and other surfaces. This innovative solution is engineered to be universally applicable across diverse substrates, including but not limited to geological materials, metals, and polymers.

Road Haulage

Vehicle Fuel Systems:

The Tritonex coating can play a crucial role in



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ensuring the safety and efficiency of vehicles' hydrogen fuel tanks and systems. This application becomes increasingly important as the automotive industry shifts towards more sustainable fuel options.

Fuel Cells:

Tritonex can be critical in producing and maintaining fuel cells, especially high-temperature solid oxide fuel cells (SOFCs). These cells, which operate at around 600 degrees Celsius, benefit from the coating's ability to protect metallic components from heat and to facilitate the dissipation of electric current generated within the cell. This application is particularly relevant as fuel cells are increasingly being used to supply electricity and heat in an environmentally friendly manner



Transported by Light Rail



BOOSTING GREEN HYDROGEN PRODUCTION WITH TRITONEX



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"The past we inherit, the future we build."





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Tritonex could significantly elevate the proportion of green hydrogen in the energy sector. Tritonex facilitates buffer storage and long line pipe systems, which is essential for harmonising the supply and demand dynamics within renewable energy frameworks. Thus, implementing Tritonex represents a substantial advancement in pursuing sustainable energy solutions. B

OPTIMISING GRID CAPACITY AND SUSTAINABLE ENERGY DISTRIBUTION

The current energy grid, operating at maximum capacity, faces challenges in meeting the rising energy demands. Tritonex enables the efficient transportation of hydrogen to areas in need, effectively offloading the grid. This strategic solution, coupled with Tritonex’s contribution to the increased production of green hydrogen, ensures a more sustainable and efficient energy distribution system. In addition, Tritonex enables wind and solar farms to convert excess energy production into hydrogen and store it in lossless buffer storage to balance energy production fluctuations.

Gas Pipelines and Storage Tanks:

Tritonex can be retrofitted to existing gas infrastructure to meet the unique requirements for mixed hydrogen and gas pipelines and storage tanks in the energy sector



Gas Turbines:

With the growing trend of mixing renewable hydrogen with natural gas, the use of Tritonex can be extended to gas turbines. As this mixture leads to higher combustion temperatures, it increases the risk of hydrogen embrittlement. Tritonex can be advantageous in protecting turbine parts against this risk, ensuring more efficient and safe operation of turbines in power generation.



Enables the Decarbonisation Process

Iron and steel industries can now play their part by using Tritonex to eliminate the “Angel’s Share” permeating through the pipes, joints and pressure vessels
Tritonex offers a viable way to assist this industry to decarbonise and reduce Hydrogen costs

***Hydrogen Trams as a Service ©**





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***Hydrogen Trams as a Service**

Triton Hydrogen and Light Rail UK offer a range of solutions to develop land fill as a feed stock source of Hydrogen for Very Light Rail Trams, either as OHLE, On board and beyond the wire with usable Carbon Dioxide, Bio-Char, Hydrogen pump facilities for road vehicles and a rebate to off set Tram infrastructure costs as well as reducing the need for long distance pylons marching across our country-side and turns most cities and towns into power generating centres safe guarding electric supplies from world fluctuations

Land Fill, A source of revenue



Sea Plastic, A lucrative source of Revenue



***Hydrogen Trams as a Service**

Triton Hydrogen and Light Rail UK offer a range of solutions to develop and reverse the Flow of Sea Plastics as a feed stock source of Hydrogen for Very Light Rail Trams, either as OHLE, On board and beyond the wire with usable Carbon Dioxide, Bio-Char, Hydrogen pump facilities for road vehicles and a rebate to offset Tram infrastructure costs as well as reducing the need for long distance pylons marching across our country-side and turns most cities and towns into power generating centres safe guarding electric supplies from world fluctuations

By giving this waste a commercial value, a significant step will be taken to alleviate some of our planetary plastic pollution problems

In Summary

Tritonex coating technology is a versatile solution, adaptable to diverse contexts and applications. It significantly reduces cost by eliminating cost drivers across the entire hydrogen value chain



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while enhancing safety, efficiency, and asset longevity in hydrogen storage and transportation.

Tritonex helps asset owners reduce the Holistic Life Cycle Cost (HLCC). Additionally, it is suitable for a wide range of industrial applications.

This underscores Tritonex's value in today's rapidly evolving hydrogen technology landscape.

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But why Hydrogen Trams as a Service?

A summary of some significant benefits:

- The benefits of Light Rail & VLR when combined with the emerging low cost benefits of the Hydrogen Industry point to a significant game changing outcome.
- Within our consortium we can supply funding loan for infrastructure, vehicles, and legislation to be repaid over an agreed term, 25 years+. A H2 volume rebate is envisaged to cover the funding loan.
- A design and build team will work with the client as in house or as DBOM type partnership.
- **A possible matched Hydrogen plant investment dowry circa £11M.**
- Establish a Tram vehicle assembly factory for domestic and European export.
- We have a range of game changing Hydrogen Products such as Tritonex Hydrogen Barrier System, the only coating in the world that creates a 100% isolation barrier between hydrogen gas and the substrate easing transportation, storage, traction, and distribution. Tritonor.
- A "cold process" of tip site plastic recovery and anaerobic food waste conversion and blending to high quality green Hydrogen.
- A low cost supply of green hydrogen for either on board the tram or supplied by traditional overhead line.
- A secure, local energy source in each city, isolated from foreign pressures and conflicts.
- A standard vehicle pump fuelling facility for use with domestic rubber wheeled municipal vehicles including bus fleets.

There will be two major biproducts producing a significant source of revenue and climate change materials.

Let's talk about this either at

Light Rail Solutions UK 2024 Ltd
Mr. James Harkins FCILT MTPS
jimh@jimmyharkins.com
07721 378223

Triton Hydrogen Ltd
Mr. Stephen Collicott
stephen@triton-hydrogen.com
07949 349987

