

# Is there a Future for Refrigeration In Transport?



  
**Highnam assist**

Is it time to put the Dirty diesel Donkeys out to pasture?



# Net Zero defined

**A net zero cold chain can be defined as a safe, monitored, and integrated refrigerated network designed with cooling technologies that uses environmentally-friendly refrigerants and maximises the efficient use of low carbon energy.<sup>e</sup>**

# Headline News

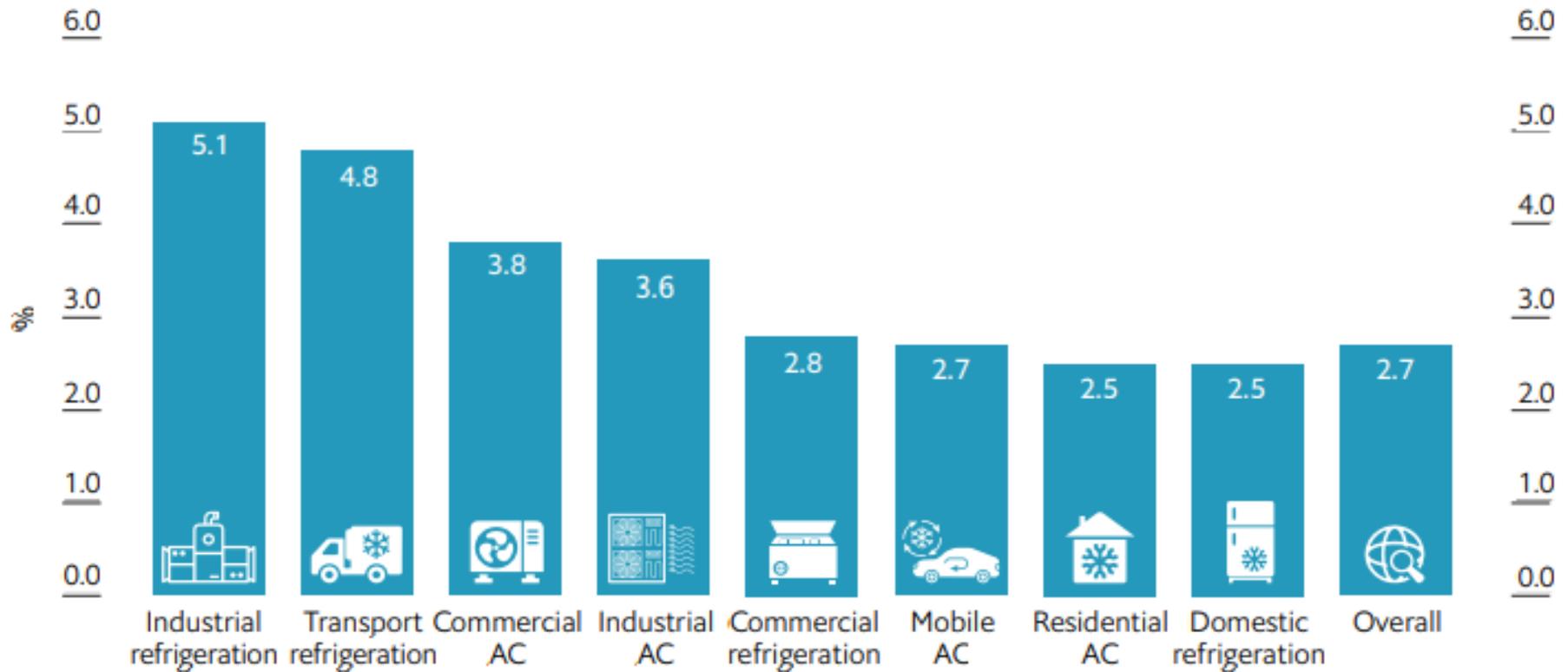
- There are estimated to be c 70,000 to 100,000 diesel transport refrigeration units in the **UK**.
- There are estimated to be c 1,000,000 diesel transport refrigeration units in the **EU**.
- There are estimated to be c 1,000,000 diesel transport refrigeration units in the **USA**.

In comparison -

There are large portions of the World with **no** adequate or secure Cold Chain today.

# Global Headline News

**Cooling sales: Average annual growth rate by sub-sector (2018-2030) (a)**

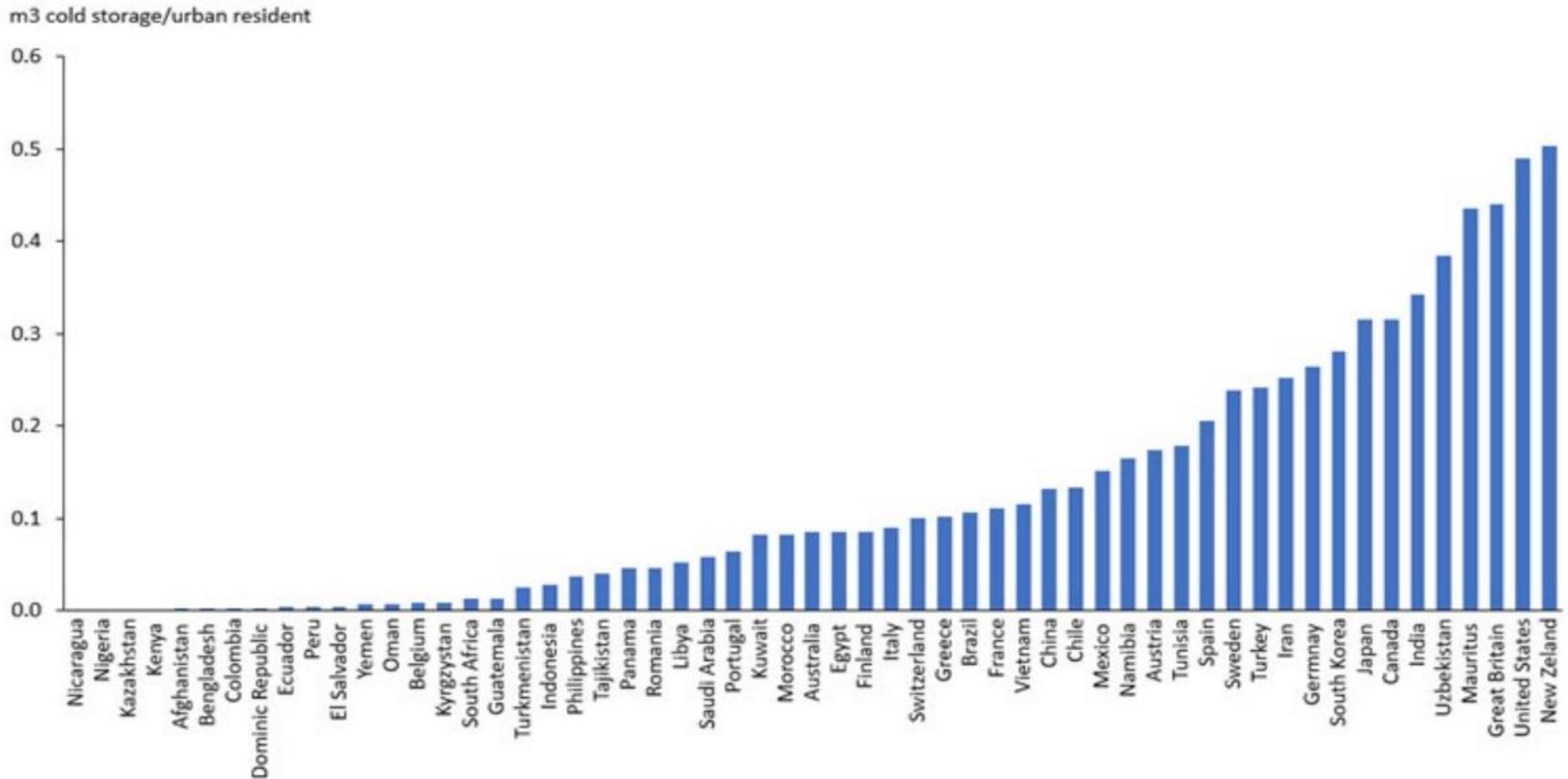


(a) As measured by compound annual growth rates

Source: EIU analysis.

# Global Headline News

Figure 5: Cold storage market development index graph. Data source GCCA, 2018



# Global Headline News

- California is banning the use of diesel driven truck transport refrigeration units from the state from 2030 – including all companies that enter the state and with trailers to follow at the latest by 2035.
- FREEZER Trucks Act of 2021 or the Fostering and Realizing Electrification by Encouraging Zero Emission Refrigeration Trucks Act of 2021 is in Congress now.
- EU F-GAS regulations and PFAS investigations.
- EURO 7 is coming

# Fresh Food Market New York Urban Emission Clusters

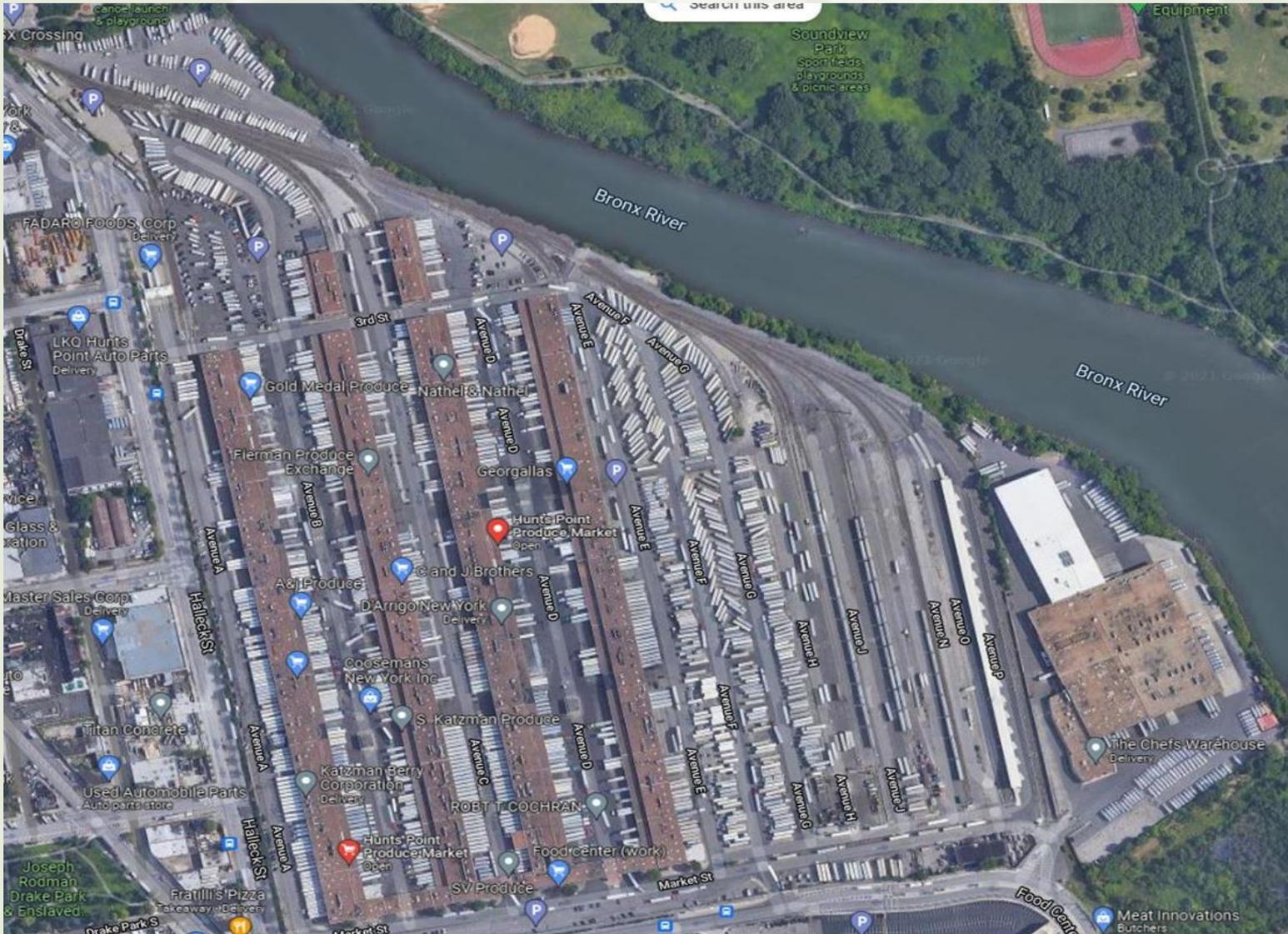
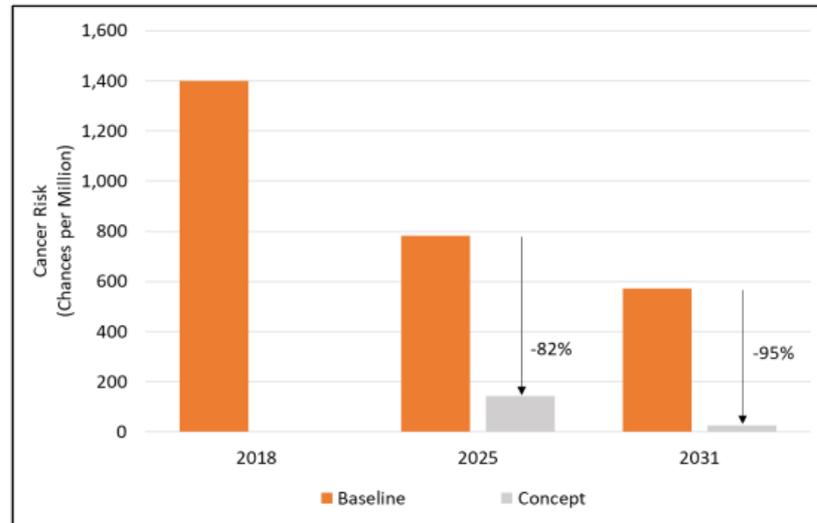


Image Google Earth

# Clusters USA.

**Figure II.H.3. Potential Individual Resident Cancer Risk and Risk Reduction for Cold Storage Warehouse Clusters**



## b) Cancer Risk Inside the Cluster Boundary

CARB staff also evaluated the potential cancer risks for individual residents within the area encompassed by the boundary connecting the facilities (shown in Figure II.H.2). Table II.H.6 shows the range of potential cancer risks for the existing TRU ATCM and the Concept with an activity of 16,000 hours of TRU engine operation per week (4,000 hours/week x 4 facilities). The table presents the highest and lowest cancer risk values for receptors within the cluster boundary. The scenarios show significant cancer risk reductions, estimated at about 81 to 83 percent in 2025 and about 95 to 96 percent in 2031.

# Cluster issues UK.

## **Government Contract Release 26/10/21**

HMRC requires a single site services operator ("Supplier") to provide core service 'pillars' of Site Operations; Security Services; Traffic Marshalling Services; Vehicle Inspection Services (including MHE operators); and Hard & Soft FM Services.

The IBF sites are expected to be operational 24 hours a day, 7 days a week, 365(6) days a year.

The three confirmed IBF sites of Sevington, Holyhead and Dover White Cliffs are expected to have approximately 500-600 HGV parking bays collectively and at their maximum capacity will be able to serve a throughput of approximately **10,000 vehicles per day.**



# UK Headline News

- Red Diesel ban April 2022
- UK Government departments are being challenged by MP's on emissions from transport refrigeration equipment.
- Reports on Transport Refrigeration emissions will drive continual focus and lead to **Just Transition**.
- Transport Refrigeration Innovation is now bridging the **anxiety** gaps of will it be fit for purpose.



Alan Brown Shadow SNP Spokesperson (Energy and Climate Change)

To ask the [Secretary of State](#) for Environment, Food and Rural Affairs, pursuant to the Answer of 4 November 2020 to Question 109136 on Transport: **Refrigeration**, who his Department has commissioned to conduct research on improving the evidence base on emissions from non-road mobile machinery emissions, including transport **refrigeration** units; what the (a) timeframe and (b) terms of reference is for that research; and if he will make a statement.



Rebecca Pow

The Parliamentary Under-Secretary of State for Environment, Food and Rural Affairs

In the Clean Air Strategy 2019, we committed to exploring further action to tackle non-road mobile machinery (NRMM) emissions in England. In September 2019, Defra commissioned Ricardo Energy & Environment to conduct research to improve the evidence base on emissions from NRMM, including transport **refrigeration** units, and inform policy development.

Over the next few months, we will be engaging with stakeholders to discuss initial findings of the research. This exercise will help to ensure that we have a robust and accurate evidence base from which to consider policy options.

Defra has also been gathering evidence to further understand the impact of NRMM emissions. The results from this monitoring and the evidence gathered will be used to establish whether a more wide-ranging in-service conformity requirement is ultimately necessary.

Yours ever,

Rt Hon Grant Shapps MP

SECRETARY OF STATE FOR TRANSPORT

[Reform of red diesel and other rebated fuels entitlement - GOV.UK \(www.gov.uk\)](#)

[The just transition | Greenpeace UK](#)

# Just Transition Options

There are ways **now** to reduce the emissions from Transport Refrigeration Units (TRU)–

- Check your operation – use electric standby plugs where you can to run the TRU without running the engine and train staff in best practices for Cold Chain efficiency.
- Ask all suppliers to stop running there NRMM TRU when entering your sites and provide them with an electrical supply to use and install power supplies to all RDC's and stores.
- Check the TRU software set up and work with your local providers to reduce the actual run time.
- Turn off the TRU when not needed and check the truck or trailer body for gaps that will affect the operation of the TRU.
- Monitor the air quality in your yard area for Health and Safety purposes.
- Look to invest in non-diesel equipment with low GWP gases. Hydraulic, battery or electric driven equipment and make the power needed for the refrigeration unit the last part of ordering a truck or trailer.
- Make Transport Refrigeration = Net Zero as part of your sustainability plans.
- Enjoy the benefits of clean air and reduced fuel and maintenance costs – less running reduces costs and could lead to a run hour reduction claim on your provider.

# Added Benefits

- You will have less downtime as most failure issues are fuel and battery related.
- You will potentially see less loss due to less on route distress calls.
- Your equipment could last longer potentially allowing it to retrofit to new bodies.
- Your drivers will thank you for taking the noise away.
- Celebrate emission wins with your staff.



**LowCVP** | Innovate UK  
Low Carbon Vehicle Partnership

### Report

Development of Emissions Testing Procedures for Transport Refrigeration Units (TRUs)

The results of an Innovate UK funded project to develop a robust, representative and cost-effective methodology for measuring the energy consumption and emissions performance of refrigerated commercial vehicles.

**June 2019**  
Prepared by: Stuart Clegg, CEV, MIRA/ECUFL Commercial Vehicle Emissions Consultant  
Reviewed by: Andy Eastlake, CEV, MIRA/ECUFL Managing Director

Turning The Sun's Energy Into Refrigeration

The Future Of Transport Refrigeration... So Green You Can Return Energy To The Grid

"Currently saving millions of pounds of pollution"  
American Engineered - American Made

**SOLAR TECH**  
ADVANCED ENERGY ARCHITECTS

# Always Remember Sensible advice

*"Climate-friendly also needs to imply minimising the loss of food - could be that it's better environmentally to power a cold chain with diesel which has zero percent food loss than one that runs on solar but where 50% of food is lost."*

# What will drive change?

## PRESIDENCY PROGRAMME COP26

UN CLIMATE CHANGE CONFERENCE UK2021 - PRESIDENCY PROGRAMME

### TRANSPORT 10TH NOVEMBER

This is the COP that will kick start the mass market for zero emission vehicles – a transition that needs to be significantly accelerated to keep 1.5°C within reach. The global transition to zero emission road transport has reached a tipping point. Transport Day will bring together leaders from across the sector to accelerate the transition to 100% zero emissions vehicles. Transport Day events will also galvanise action to decarbonise the harder to abate forms of transport: aviation and shipping.

## **THANK YOU FOR HELPING TO MAKE A DIFFERENCE TO THE COLD CHAIN.**



About Norman Highnam MinstR with over 35yrs experience within the logistics and supply chain sector with a focus on transport refrigeration in the United Kingdom and globally.

Norman Highnam MinstR has over 15 years at senior management level within a market-leading supplier of transport refrigeration equipment and fleet support .

Four years as a Director of the Food Storage and Distribution Federation and is currently an active member of the Institute Of Refrigeration. Driving change in the transport refrigeration industry.

Norman Highnam MinstR now provides insight for companies around the world into the Transport Refrigeration sector, mobile engineering and actively campaigns to remove the need for diesel powered equipment and to help and advise growing Cold Chains on best practice in terms of engineers, training and safety and customers fleet perceptions.

[Norman@Highnamassist.co.uk](mailto:Norman@Highnamassist.co.uk)

[About \(highnamassist.co.uk\)](http://highnamassist.co.uk)