Data Science
Informing Safety

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INFORM ▸ EDUCATE ▸ ENFORCE

A MODERN REGULATOR

In The Beginning...

5 Key Risk Profiles

01
Operators

02
Vehicles

03
Drivers

04
Supply Chain

05
Infrastructure

Our Journey in the past 12 months

Delivery of Risk Engines

- Fatigue

- Mechanical

- Permitted

Mobile Cameras commissioning

- Data collection

- Compliance Gaps Identification

Realtime Alerting

- Proactive Intercepts of high risk vehicles
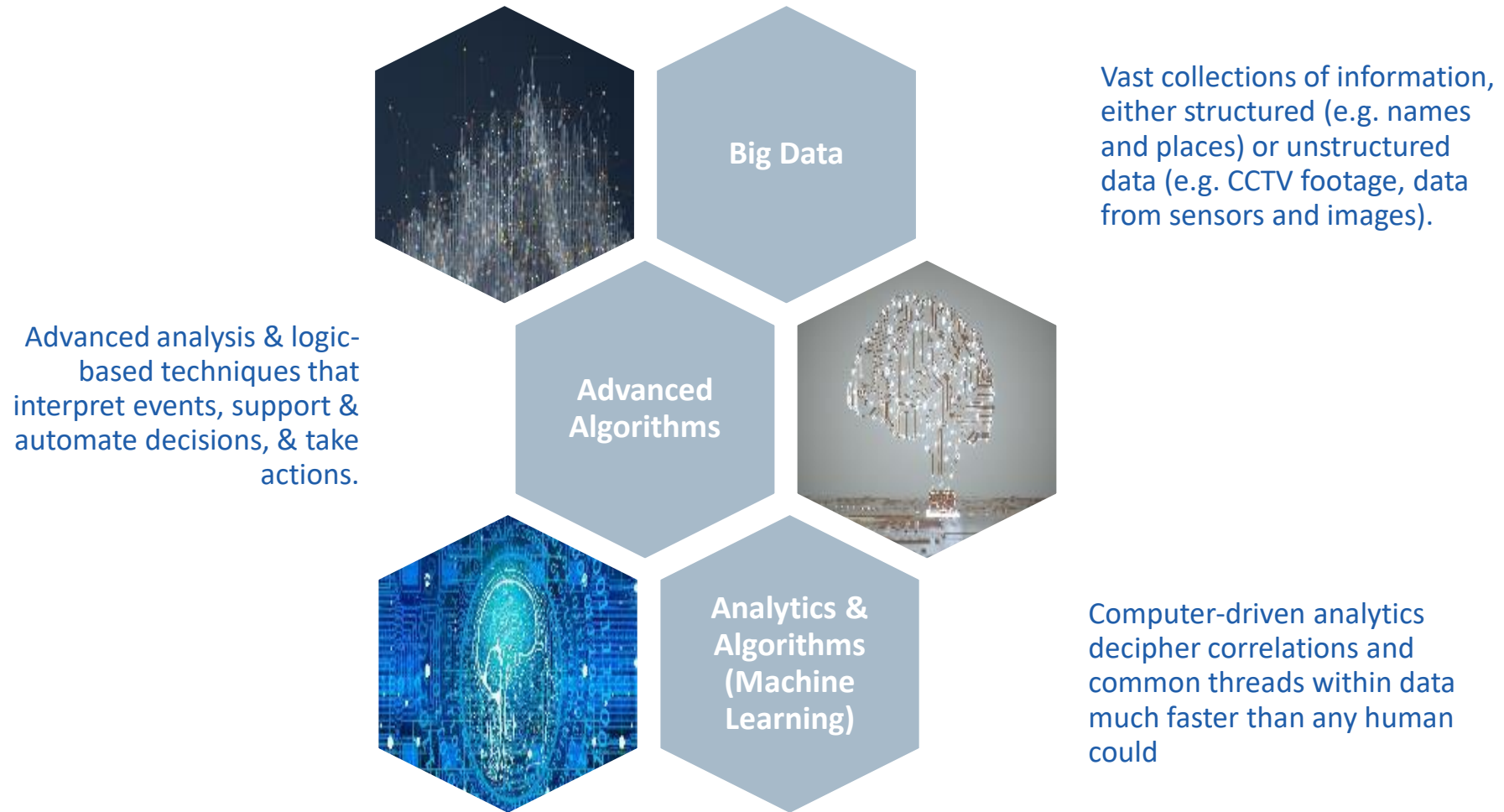
NHVR

NHVR – Journey Continues

Data access and "smart" utilization of existing data is allows for insights well beyond compliance.

As a modern regulator the NHVR is about understanding how the industry performs and what are the emerging issues affecting the industry

Using data science we can focus the data towards building insights into:

Safety
&
Compliance

Productivity
&
Sustainability

Data Science | Combining tactics and technology is necessary for improved decision-making, turning data into insights and intelligence.

Big Data

Vast collections of information, either structured (e.g. names and places) or unstructured data (e.g. CCTV footage, data from sensors and images).

Advanced analysis & logic-based techniques that interpret events, support & automate decisions, & take actions.

Advanced Algorithms

Analytics & Algorithms (Machine Learning)

Computer-driven analytics decipher correlations and common threads within data much faster than any human could
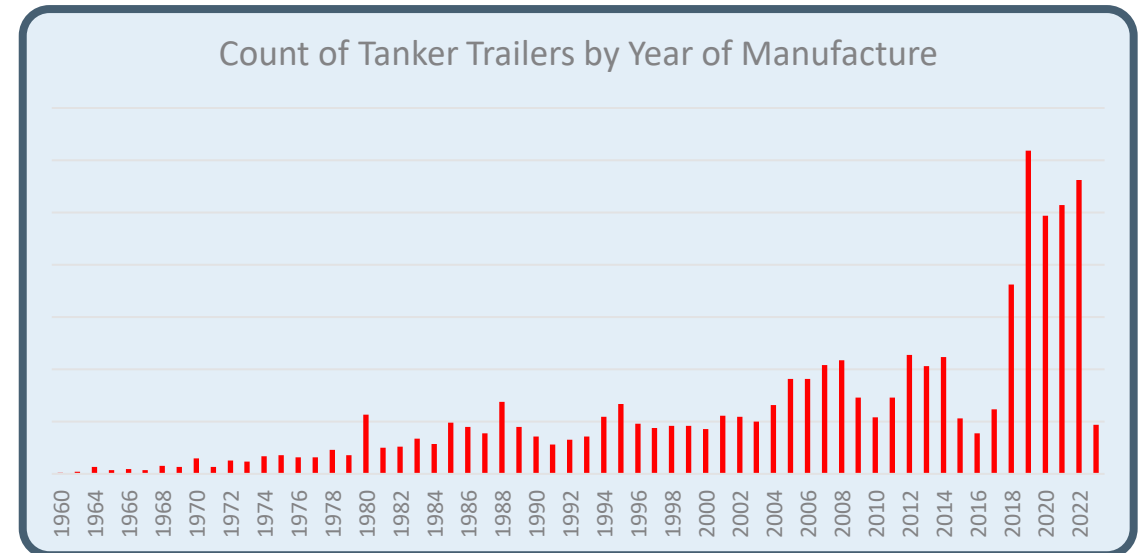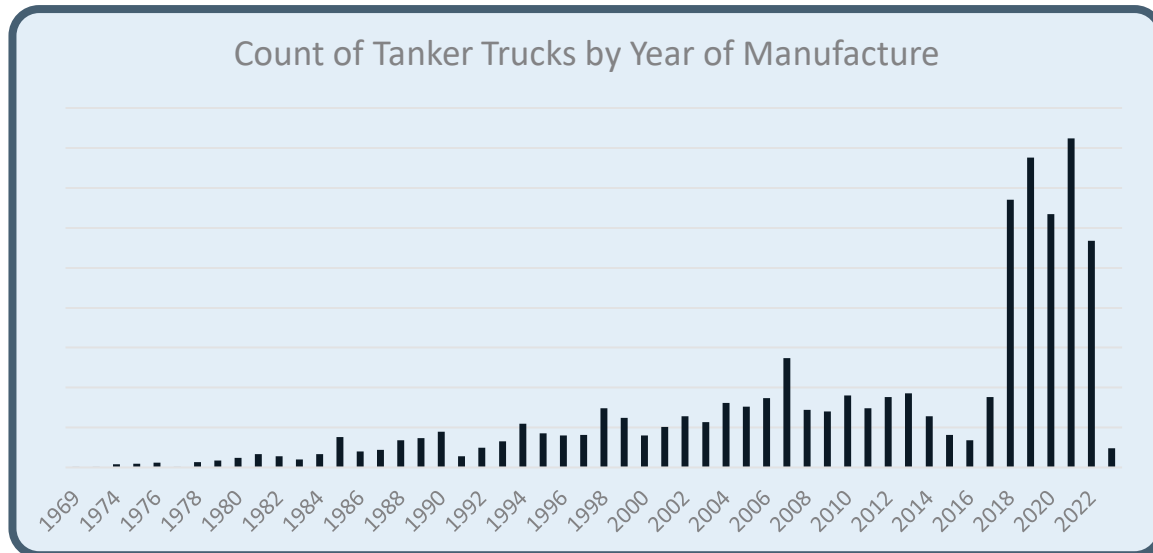
NHVR

Predictive Analytics – Registration Trends

Tanker Trucks:

- 8856 registered nationally

- 53% less than 10 years old

Tanker Trailers:

- 8318 registered nationally

- 45% are less than 10 years old

Count of Tanker Trucks by Year of Manufacture

Count of Tanker Trailers by Year of Manufacture

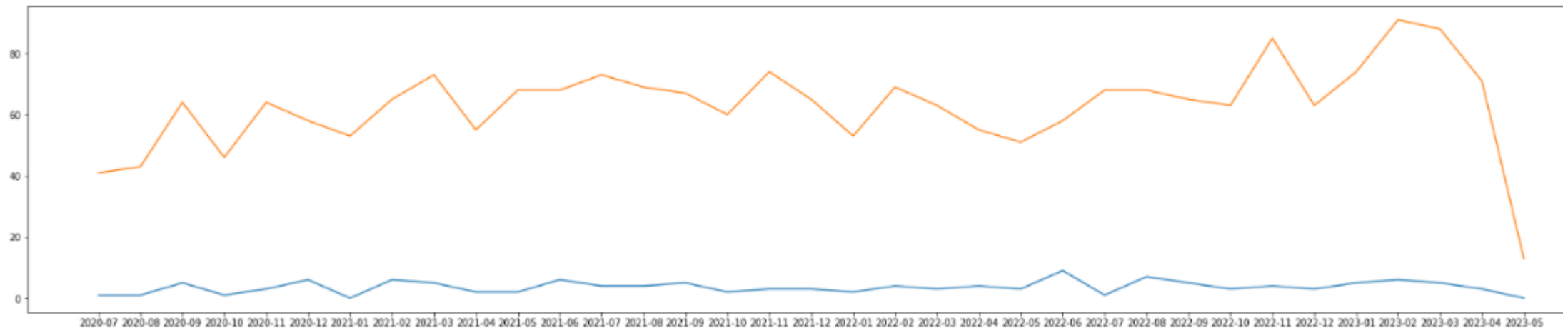# Predictive Analytics – Compliance Trends

Tanker Trucks:

- 3073 vehicles had a compliance checks since 2018
- Average non-compliance rate of 2.5%
- Offence Actions Breakdown

  - Offence Reports (29.6%)
  - Infringements (25%)
  - Defect (19.1%),
  - Education (18.6%)
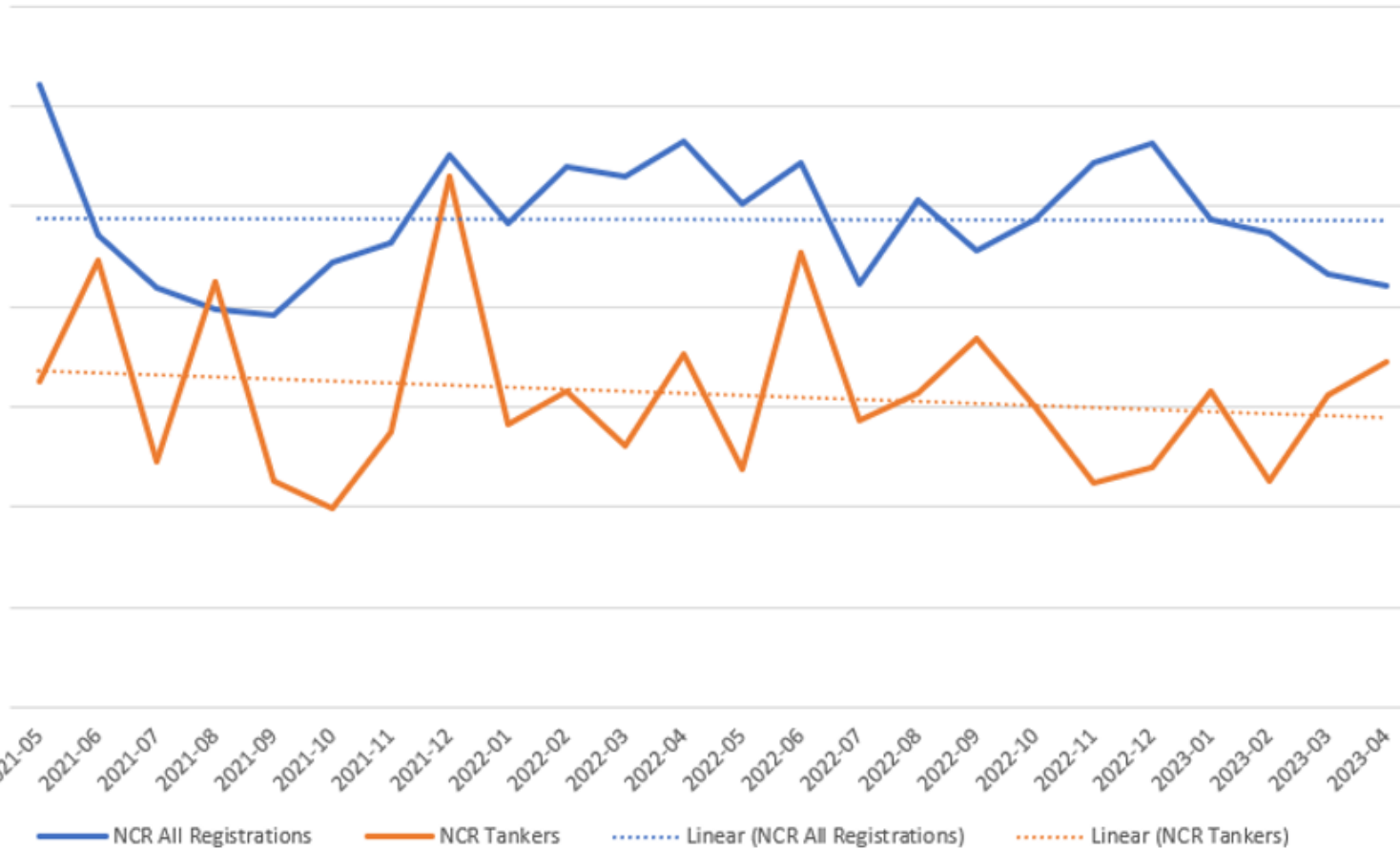 - Warning (2.9%)

Tanker Trailers:

- 8095 vehicles had a compliance checks since 2018
- Average non-compliance rate of 3.5%
- Offence Actions Breakdown

  - Offence Reports (29.7%)
  - Infringements (26%)
  - Defect (18%),
  - Education (15.1%)
  - Warning (6.3%)

Monthly Compliance Checks vs identified compliance issues

Non-Compliance Rate

Intercept Non-Compliance
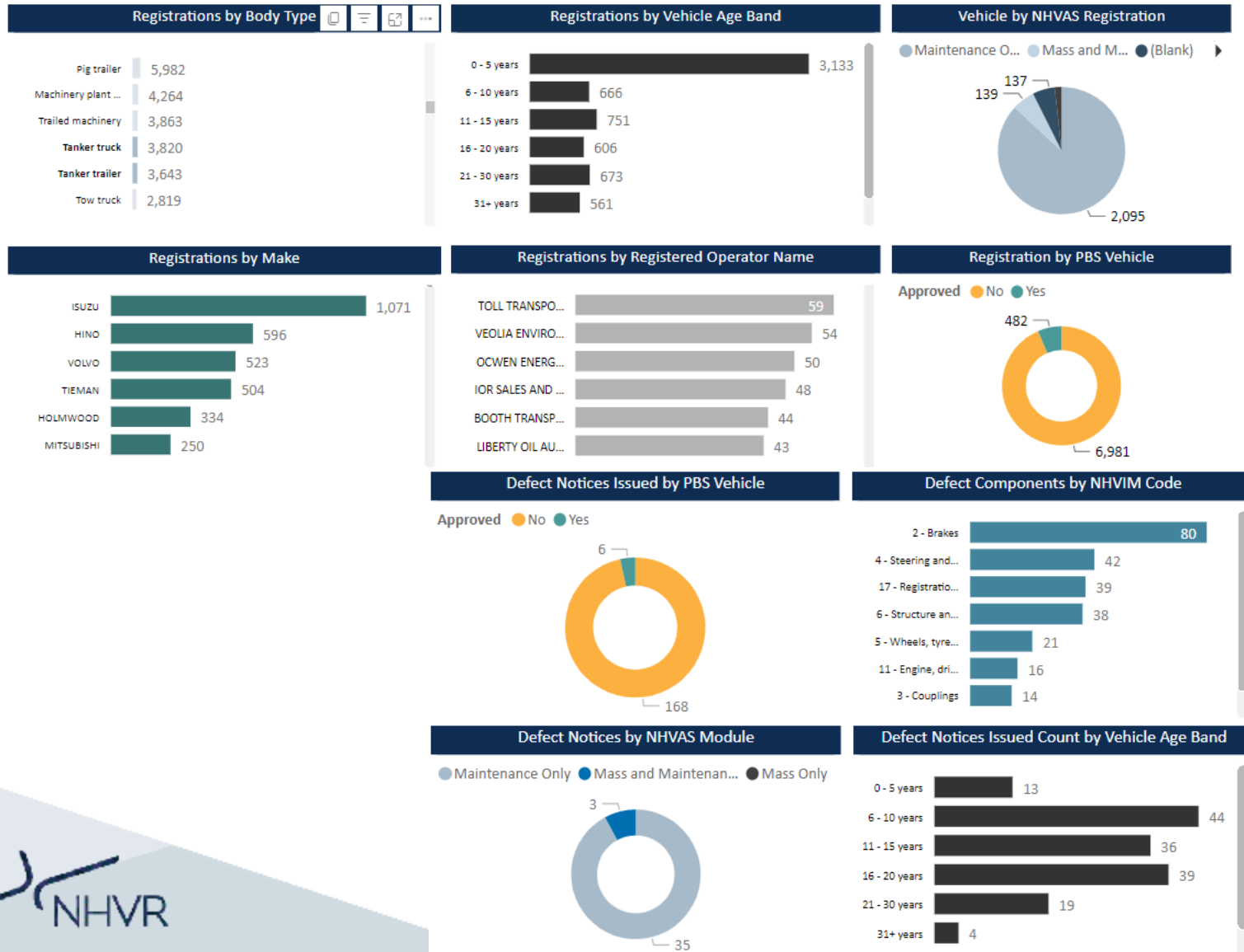All Registrations v Tanker Truck & Trailer Registrations

Non-Compliance Rate for the general Heavy Vehicle fleet has remained fairly static over the past 2 years

Non-Compliance Rate for Tanker Trucks and Tanker Trailers has steadily decline over the same period.

NCR All Registrations   NCR Tankers   .... Linear (NCR All Registrations)   .... Linear (NCR Tankers)

NHVR Monitoring

A comprehensive suite of Dashboards are deployed throughout NHVR to support and inform

- Vehicle Age
- Registration Demographics
- NHVAS Schemes
- PBS
- Locations
- Defects
- Offences