

TERRA 

CAT 

Caterpillar Next Generation Wheel Loaders

NZ Launch Quarry NZ Conference 2022

Dick Mars – Product Application Specialist – Wheel Loaders
Chris Barrett – Technology Application Specialist

Next Generation CAT Wheel Loaders – Loader Evolution



H Series (2010)	
K Series (2011)	↓ 25% More Efficient 18% Less Co2
M Series (2014)	↓ 17% More Efficient 32% Less Co2
Nex Gen & XE	↓ 35% More Efficient 45% Less Co2

Next Generation CAT Wheel Loaders – Model Line Up

Loaders suited to your Application

GC Simple & Capable	950^{GC}		966^{GC}			
Performance Smart & Productive	950	962	966	972	980	982
XE Highest Lifecycle Return			966^{XE}	972^{XE}	980^{XE}	982^{XE}

Next Generation CAT Wheel Loaders – Field Follow Program

30 x Loaders 75,000hrs of Global Field Testing



Next Generation CAT Wheel Loaders – Field Follow Program

1 of 8 x 966 Loaders Globally

966 Serial Number EL900152 – Has been in Operation in New Zealand since October 2020



- 5.1m³ Aggregate Bucket – (8t Payload)
- Aggregate Handler Specification
- L5 Tyres
- Left Hand Joystick Steering
- 2 x Single Access Lever Implement Controls
- Next Gen Operator Station
- Full Next Gen Technology Suite

Next Generation CAT Wheel Loaders – Field Follow Program

NZ Unit 966 Serial Number EL900152

ROAD METALS
CO LTD



- 3,158 Hours Achieved
 - 18,059 Kms travelled (14,355 Kms FWD, 3,706 in Rev)
 - 1,506,832 Gears Shifted
 - 756,766 Total Tonnes of material moved
 - 239.6 Tonnes Per Hour (299.5 tonnes per hour working)
 - 13.1 Litres Per hour of fuel consumed
 - 4.98kgs of Co2 per Tonne of material moved
- 19 x Product enhancements to achieve to Production Ready Status**

“Thanks to Murray, Don, Steve and the team at Road Metals for their Participation”

Next Generation CAT Wheel Loaders – @ Terra Stand

Find out more @ Terra CAT's Stand & @ 980 Next Gen Loader on Display



- Operator ID
- New CAT Payload
- CAT Advanced Payload
- Assist Features
 - Tip Off
 - Auto Set Tyres
 - Auto Dig
- Application Profiles
- Job Aids
- Dispatch for Loading
- XE Range Coming to NZ



Renewable Fuels

Enable increased use of reduced-carbon options and hydrogen blends.



Fuel Cells

Use renewable hydrogen fuel as a scalable source of electric power.



Electric & Hybrid Powertrains

Employ an electric drive transmission with power components.



Batteries

Power the work with stored electrical energy.



Microgrids

Integrate renewable energy sources into electric power systems.



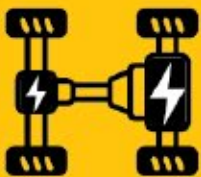
ADVANCED POWER

Multiple Solutions Made to Match the Work

- Making **established power** sources even more efficient and fuel-flexible
- Pairing established power sources with new technologies in a **hybrid format**
- Replacing established power sources with **stand-alone new technologies**
- Delivering **reman, repair, rebuild, retrofit and repower** services

OVERVIEW

Electric & Hybrid Powertrains



Employ an electric drive transmission with power components.

OUR APPROACH

- Leverage proven powertrain development
- Differentiate system performance
- Tailor to customer applications
- Expand product offerings

Solutions in production and in development

- Electric drive mobile equipment
- Hybrid systems for equipment that can run in electric-only mode
- Electric drive mining trucks with a hybrid power system that combines electric power via a trolley and diesel engine
- Electric drive with energy storage for marine applications

OVERVIEW

Batteries



Power the work with stored electrical energy.

OUR APPROACH

- Leverage automotive cell technology
- Use a Battery Management System specifically developed for our customers' applications
- Deliver a modular, scalable product line
- Offer chargers to complement

Solutions in production and in development

- Battery-powered excavators, wheel loaders, mining machines, etc.
- Land drilling solutions that combine battery systems with natural gas generators
- Next generation batteries and power inverters that improve energy density
- Mobile equipment chargers for expanded applications

PRODUCT INNOVATIONS

Over the last decade we have reduced CO₂ emissions by 30-45% on some of our high-volume core construction products. Over a year, this means these machines now emit about 20 to 30 ton less CO₂*

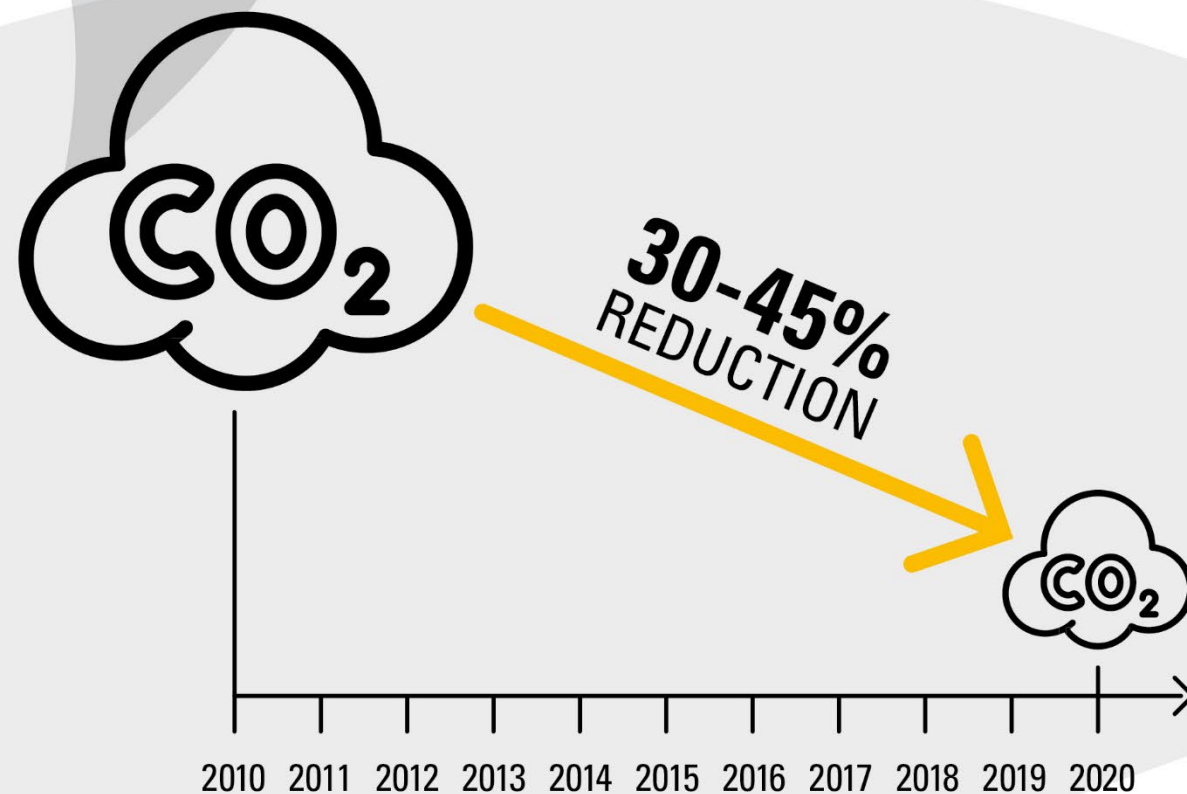
CO₂ emissions is a direct relationship with fuel burn

1L of diesel emits 2.64 kg of CO₂

Diesel Exhaust Emissions target:

- *Particulate mater (PM)*

- *Nitrous Oxide (NOx)*



PRODUCT INNOVATIONS

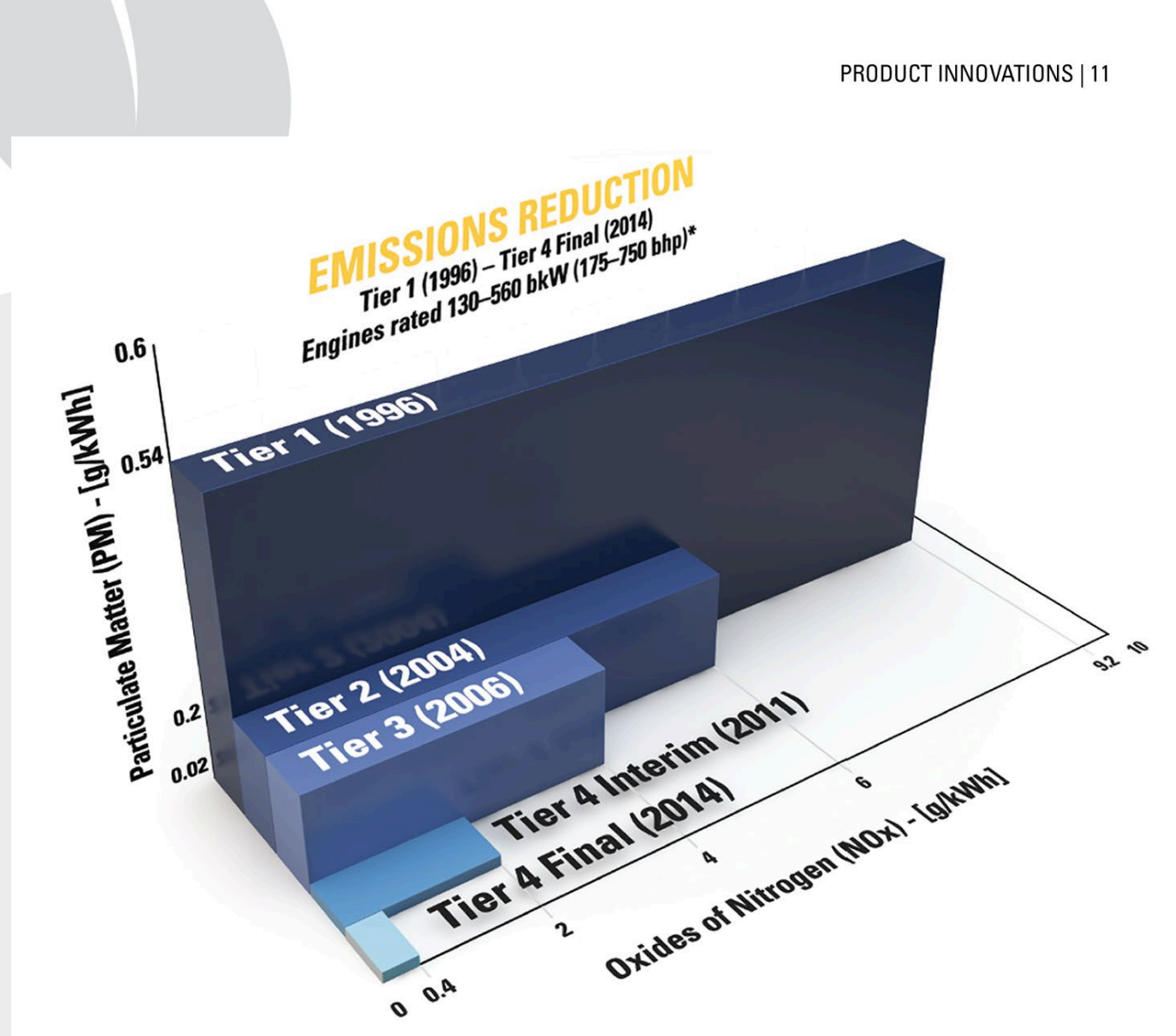
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Diesel Exhaust Emissions target:

- Particulate mater (PM)
- Nitrous Oxide (NOx)



NEXT GEN HEX

ADVANCE HYDRAULICS, SYSTEMS INTEGRATION
AND CAT ASSIST TECHNOLOGY

UP TO
45%

INCREASED OPERATOR
EFFICIENCY

UP TO
25%

LOWER FUEL
CONSUMPTION

UP TO
30%

LESS CO₂ PER TON



336E (2010)

336F XE (2015)

336 (2019)

▼ 21% LESS CO₂ PER TON

▼ 30% LESS CO₂ PER TON

EVOLUTIONARY
REDUCTION
IN CO₂



320D (2010)

320E (2013)

320F (2016)

320 (2018)

▼ 15% LESS CO₂ PER TON

▼ 16% LESS CO₂ PER TON

▼ 30% LESS CO₂ PER TON

EVOLUTIONARY
REDUCTION
IN CO₂



*Productivity, fuel consumption and CO₂ emissions vary by application. Estimated average fuel consumption improvements are based on tests or Product Link® data where available. Productivity improvements are based on test data.

980 XE

ADVANCED SYSTEMS WITH INNOVATIVE INTEGRATION



LOWER FUEL
CONSUMPTION



MORE
PRODUCTIVE

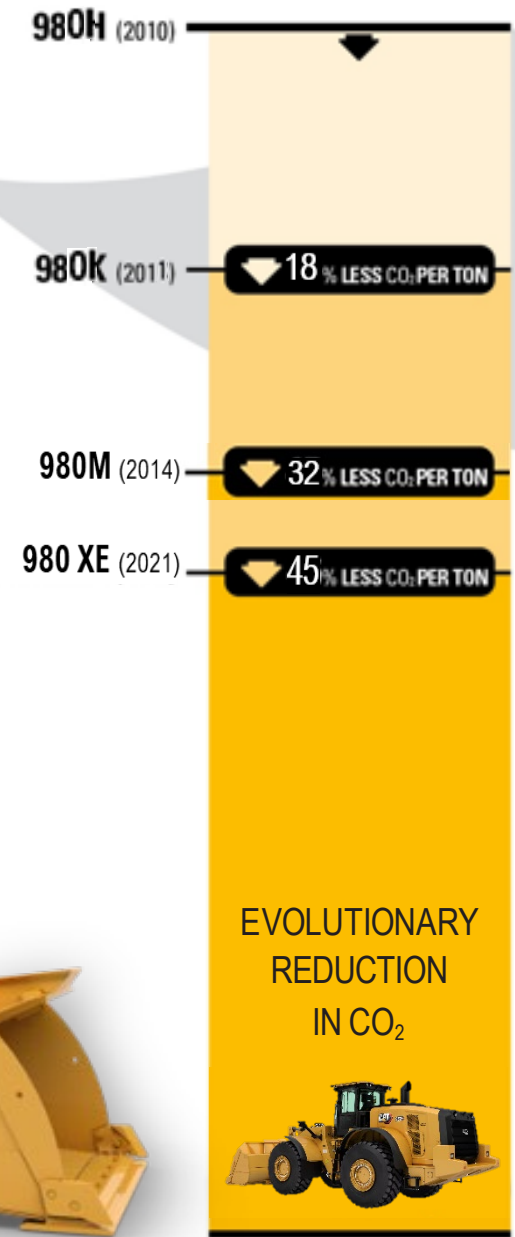


LESS
CO₂ PER
TON

Deep system integration

Deep Integration of the engine and emissions system, power train, hydraulic system, and cooling system, lowers engine speeds and heat loads, resulting in reduced emissions, improved performance and increased fuel economy.

*Productivity, fuel consumption and CO₂ emissions vary by application. Estimated average fuel consumption improvements are based on tests or Product Link® data where available. Productivity improvements are based on test data.



NEXT GEN D6 XE

DIESEL ELECTRIC – ADVANCED ELECTRIC DRIVE TECHNOLOGY

UP TO
45%

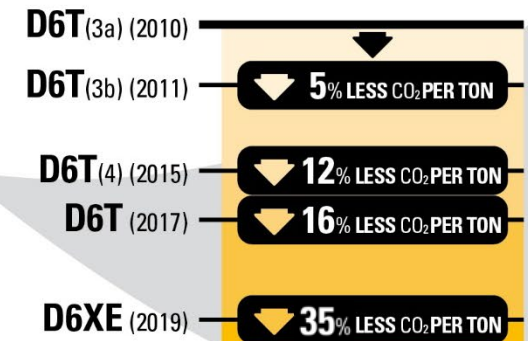
INCREASED OPERATOR
EFFICIENCY*

UP TO
25%

LOWER FUEL
CONSUMPTION

UP TO
35%

LESS CO₂ PER TON



EVOLUTIONARY
REDUCTION
IN CO₂



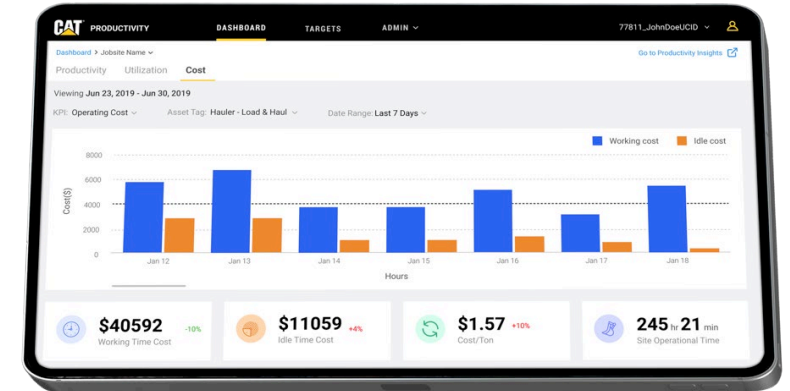
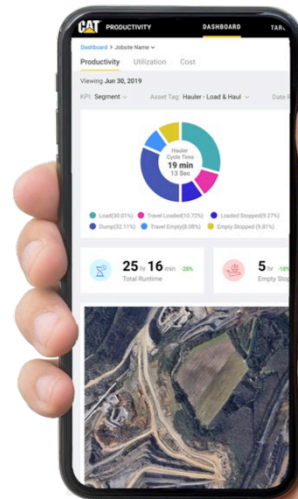
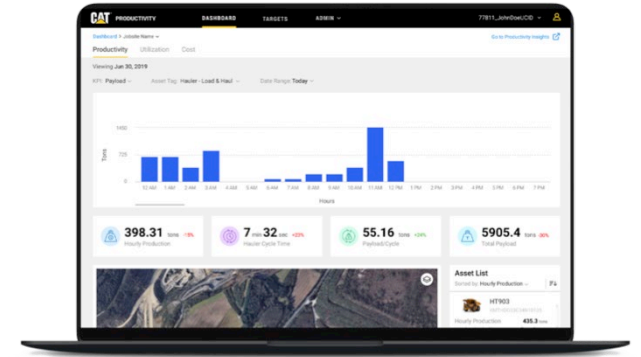
*With the use of standard assist features.

Productivity, fuel consumption and CO₂ emissions vary by application. Estimated average fuel consumption improvements are based on tests or Product Link® data where available. Productivity improvements are based on test data.

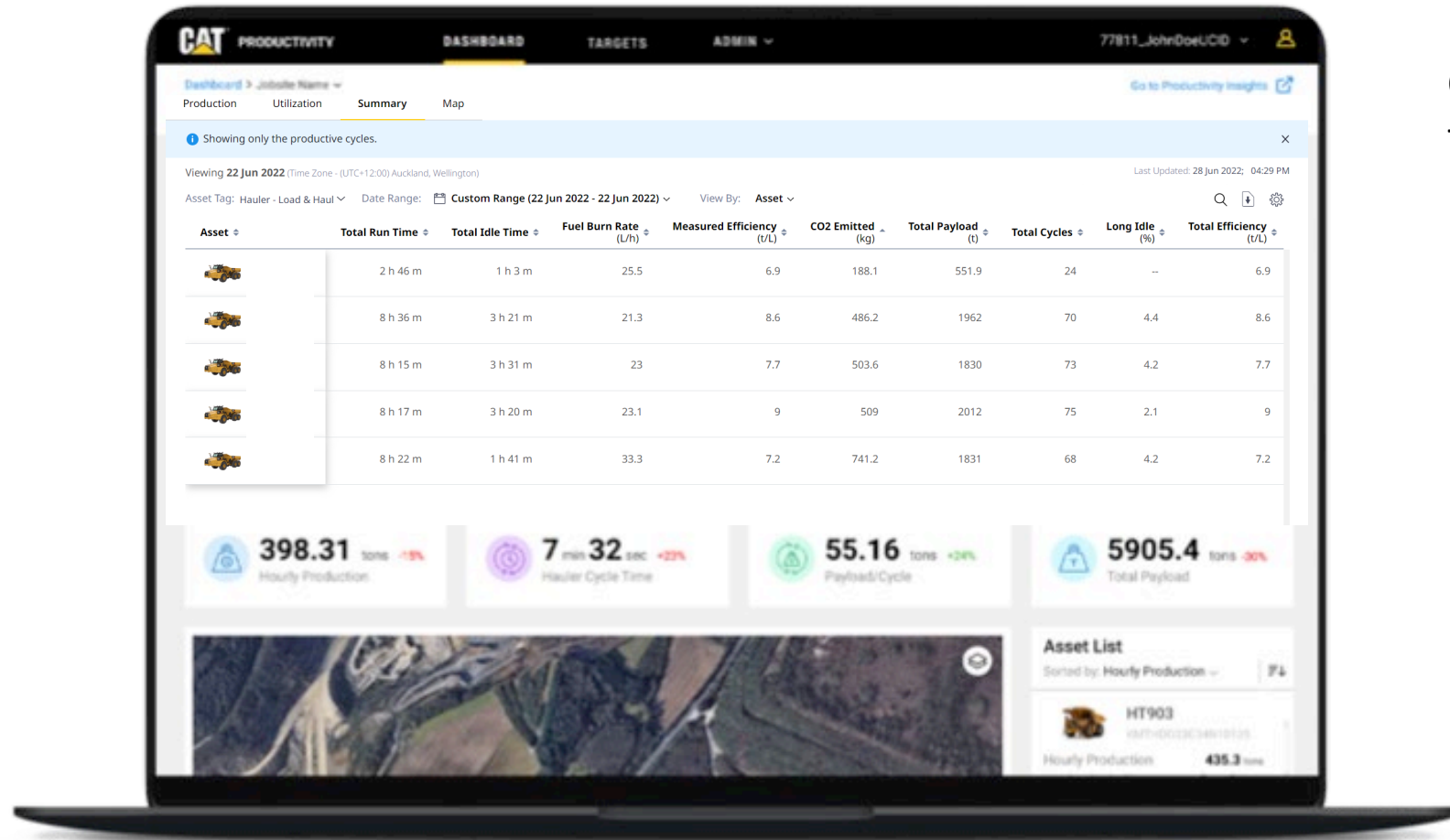
CAT[®] PRODUCTIVITY

A digital productivity overview allowing you connect a mixed fleet of equipment using GPS through an onboard cellular Product Link device. Cat Productivity allows customers to efficiently manage their site throughout the day using the machine data effectively:

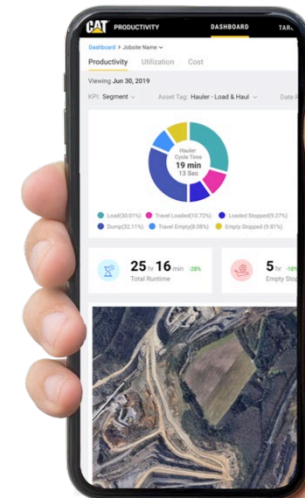
- + Productivity Dashboard
 - Load Counts
 - Payload
 - Segments/Cycle Segmentation
 - Volume
- + Utilization Dashboard
 - Working & Idling hours
 - Working & Idling fuel
 - **CO₂ and Efficiency**
- + Productivity Insights
- + Shift Reports
- + API feeds



CAT[®] PRODUCTIVITY

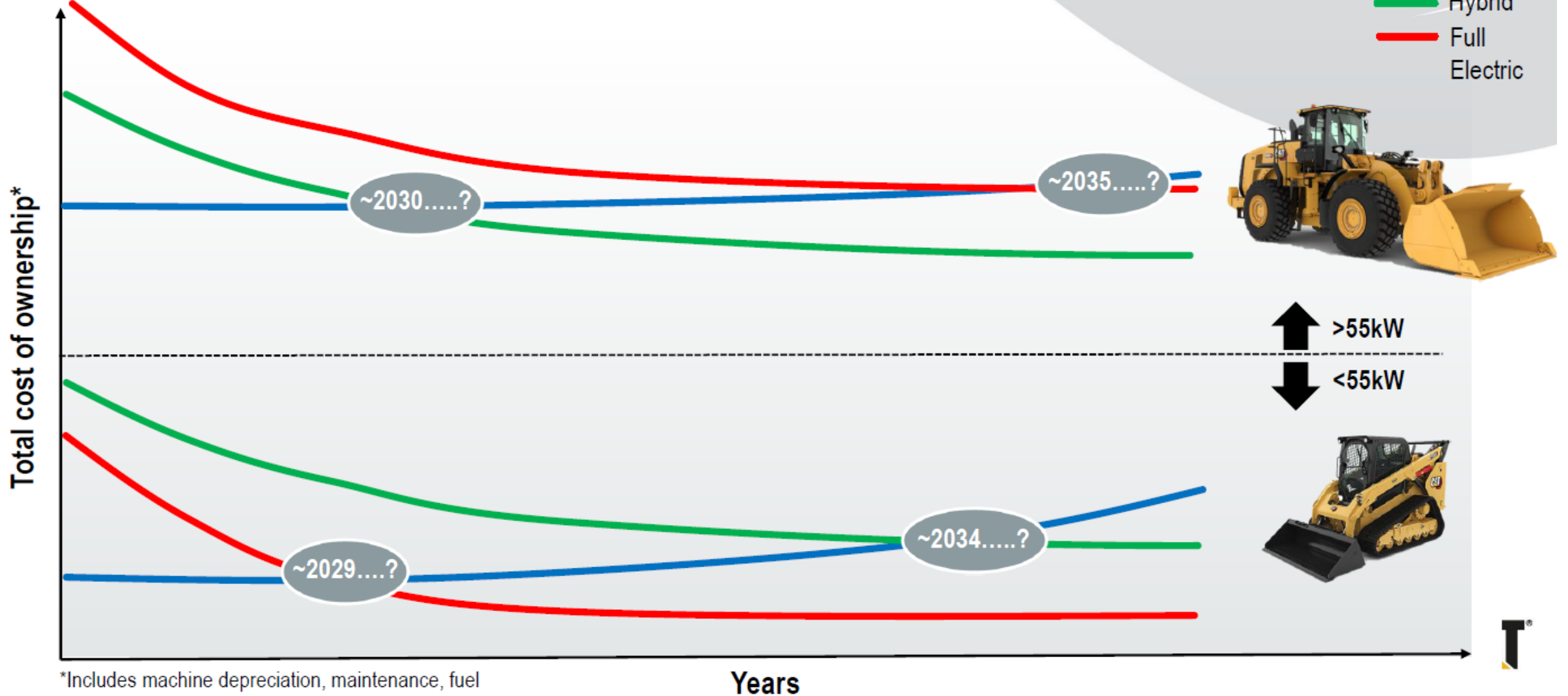


Cat Productivity is the ideal tool to monitor site efficiency, fuel burn and CO₂



TRANSITION TO ELECTRIFICATION

TOTAL COST OF OWNERSHIP





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