

SUPPORTING  
YOU ON YOUR  
**SUSTAINABILITY  
JOURNEY**







## SUSTAINABILITY IS A SMART BUSINESS CHOICE

Saving fuel, reducing waste and boosting efficiency — all can help you better manage costs and achieve your sustainability goals. At Caterpillar, we're committed to offering more choices to help you improve results on the job, in the shop and at the office. Wherever you are on your sustainability journey, we can support you with solutions for organizations and budgets of any size.

# PRODUCTS, TECHNOLOGIES AND SERVICES THAT SUPPORT A LOWER-CARBON FUTURE

Now more than ever, you rely on us to provide diverse solutions that help lower greenhouse gas (GHG) emissions, improve efficiency and productivity and deliver energy flexibility. Here are a few examples of how we're helping you achieve these goals.



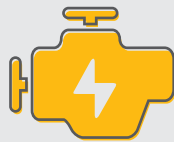
## FUEL CHOICE

Many Cat products operate on lower-carbon intensity fuels, including biodiesel, renewable diesel and biogas. All Cat diesel engines can operate on 100% HVO (hydrotreated vegetable oil). And Caterpillar engines operating on natural gas blended with up to 100% hydrogen are being demonstrated in power generation projects.

**HVO CAN BE USED AS A DROP-IN REPLACEMENT FOR DIESEL FUEL IN CAT® ENGINES.**



**Lower lifecycle greenhouse gases with similar tailpipe emissions<sup>1</sup>**



**No engine conversion needed**



**No impact on maintenance intervals, fluids or filters**



**No impact on standard warranty**



**Maintains U.S. EPA or EU Stage V emissions compliance<sup>2</sup>**

<sup>1</sup> Greenhouse gas emissions at the tailpipe are essentially the same as traditional fuels.

<sup>2</sup> Refer to guidelines for successful application. Please consult your Cat dealer or "Caterpillar Machine Fluids Recommendations" (SEBU6250) for details.



## FUEL EFFICIENCY

We continue to improve the fuel efficiency of our equipment, so it can consume less fuel, lower your fuel costs and reduce associated emissions.<sup>3</sup> Here are just a few examples.



**325 EXCAVATOR**

**UP TO 20%**

lower fuel consumption<sup>4</sup>  
and less estimated  
CO<sub>2</sub> emitted<sup>5</sup>



**980 XE WHEEL LOADER**

**UP TO 19%**

lower fuel consumption  
and less estimated  
CO<sub>2</sub> emitted<sup>6</sup>



**120 MOTOR GRADER**

**UP TO 16%**

lower fuel consumption  
and less estimated  
CO<sub>2</sub> emitted<sup>7</sup>



**374 EXCAVATOR**

**UP TO 13%**

lower fuel consumption  
and less estimated  
CO<sub>2</sub> emitted<sup>8</sup>



**988K XE WHEEL LOADER**

**UP TO 12%**

lower fuel consumption<sup>4</sup>  
and less estimated  
CO<sub>2</sub> emitted<sup>9</sup>



**420 XE BACKHOE**

**UP TO 10%**

lower fuel consumption<sup>4</sup>  
and less estimated  
CO<sub>2</sub> emitted<sup>10</sup>

<sup>3</sup> Equipment comparison scenarios for the 325 excavator, 980 XE wheel loader, 120 motor grader, 374 excavator, 988K XE wheel loader and 420 XE backhoe were developed using the Cat VST Simulator tool, which gives Cat dealers the ability to compare machine models with other models and technology options. Estimated average fuel consumption improvements are based on tests or Product Link<sup>®</sup> data where available. Productivity improvements are based on test data. Scenarios were validated on 01/23/2023.

<sup>4</sup> With use of smart mode and standard assist features.

<sup>5</sup> Comparison of 325 to 325F L. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

<sup>6</sup> Comparison of 980 XE to 980M. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

<sup>7</sup> Comparison of 120 to 120M2 AWD. CO<sub>2</sub> emissions estimation assumes 1000 hours annual usage in North America. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

<sup>8</sup> Comparison of 374 to 374F assumes 1562 ton/hour production over 1000 hours annual usage in North America. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

<sup>9</sup> Comparison of 988K XE to 988K. CO<sub>2</sub> emissions estimation assumes 810 ton/hour production over 2004 hours annual usage in North America. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

<sup>10</sup> Comparison of 420 XE to 420F2IT. CO<sub>2</sub> emissions estimation assumes 500 hours annual usage in North America. CO<sub>2</sub> emissions estimation assumes 1 liter diesel fuel produces 2.70 kg CO<sub>2</sub>. Emissions estimation does not account for DEF. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application.

### 3 WAYS CAT TECHNOLOGY HELPS REDUCE FUEL CONSUMPTION



**LESS FUEL CONSUMPTION<sup>11</sup>**  
using Eco Mode on D1, D2  
and D3 next gen dozers



**REDUCED FUEL BURN<sup>12</sup>**  
using Smart Mode on  
320 next gen excavators



**INCREASED FUEL EFFICIENCY<sup>13</sup>**  
with electric drivetrain on  
D6 XE next gen dozers

## ELECTRIFICATION

We're committed to delivering robust electrified products and solutions, including battery-powered machines and chargers, electric drivetrains and hybrid powertrains.

### D6 XE DOZER

The world's first high drive electric drive dozer, the D6 XE features an electric drive system that provides constant power to the ground with continuous pushing and greater maneuverability. That leads to faster cycle times and improved fuel efficiency compared to previous models.

### 301.9 MINI EXCAVATOR, 320 MEDIUM EXCAVATOR, 950 GC MEDIUM WHEEL LOADER AND 906 COMPACT WHEEL LOADER

These four battery electric machine prototypes will produce zero exhaust emissions, come with flexible charging options and offer performance similar to diesel. They're powered by Cat battery prototypes engineered to be scalable to industry and performance needs and maximize sustainability throughout their lifecycle, including recycle and reuse at the end of life.

## CONNECTIVITY

For more than 20 years, we've been connecting machines and using telematics to create insights. The data from 1.4 million connected assets helps you operate more efficiently to optimize productivity and conserve resources such as fuel. With our VisionLink® and VisionLink Productivity fleet management technology, for example, you can:

- **Monitor and manage fuel burn**
- **Identify excessive idle time**
- **Generate estimated exhaust CO<sub>2</sub> emissions reports**

<sup>11</sup> Comparison to not using Eco Mode. Productivity, fuel consumption and CO<sub>2</sub> emissions vary by application. Estimated average fuel consumption improvements are based on tests or Product Link® data where available.

<sup>12</sup> Comparison to 320F. Productivity, fuel consumption and CO<sub>2</sub> 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.

<sup>13</sup> Comparison to the 2014-2016 3-speed D6T dozer. Productivity, fuel consumption and CO<sub>2</sub> 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.

# SMART MAINTENANCE AND REPAIR SOLUTIONS THAT REDUCE WASTE AND SAVE MONEY

Caterpillar products are built to be rebuilt, reducing the need for raw materials and associated GHG emissions. When you choose our remanufactured and rebuilt products, you don't just save money. You also support a circular economy — one in which products can be used throughout multiple service lifecycles.

## CAT REMAN®

The Cat Reman® process uses an existing resource and builds it back to like-new condition. Less energy and material are needed because we don't have to harvest and assemble all the raw material required for new.

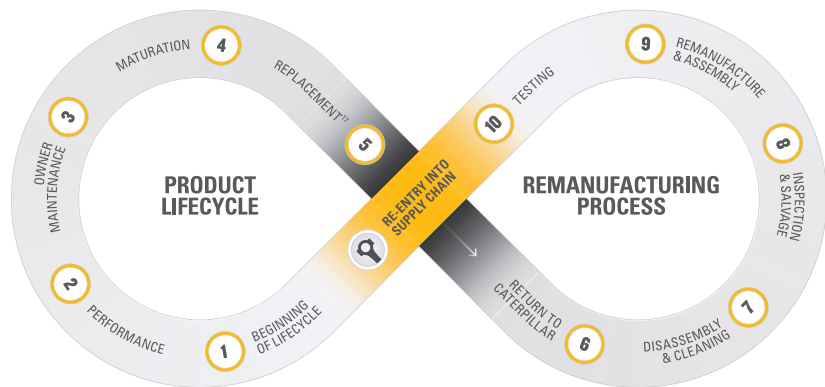
- **When a component reaches the end of its lifecycle, you can return it to your Cat dealer in exchange for core credit.<sup>14</sup>**
- **Your dealer returns that core to Caterpillar, where it's cleaned, inspected, salvaged and remanufactured to original factory quality and performance specifications, including any relevant engineering updates.**
- **The remanufactured core re-enters the supply chain as a Cat Reman product that performs like new and comes with a same-as-new warranty.**

**SUSTAINABILITY BENEFITS OF REMANUFACTURING**  
*compared to the manufacture of new<sup>15</sup>*

**65-87% LESS**  
GHG PROCESS EMISSIONS

**80-90% LESS**  
NEW MATERIALS USED<sup>16</sup>

**65-87% LESS**  
PROCESS ENERGY USE



## CAT REBUILD

Cat Certified Rebuild programs increase the lifespan of equipment by providing product updates at a fraction of the cost of buying a new machine. That enables us to extend the life of materials. A complete Cat Certified Rebuild includes more than 350 tests and inspections, automatic replacement or reconditioning of approximately 7,000 parts and a like-new machine warranty.

**43,000+**  
Machines, powertrains  
and components rebuilt  
by Caterpillar and Cat  
dealers since 1985

<sup>14</sup>Terms and core acceptance criteria apply.

<sup>15</sup>Represents U.S. environmental impacts comparing "gate-to-gate" remanufacturing and manufacturing processes for engines and components. Based on 2018 external study of Cat engines, alternators and turbochargers. Does not include impacts elsewhere in our value chain.

<sup>16</sup>By weight.

<sup>17</sup>It is recommended to replace before failure. Replacements after failure may result in partial credit.

# OUR COMMITMENT TO HELPING YOU BUILD A BETTER, MORE SUSTAINABLE WORLD

With nearly a century of sustainable innovation, Caterpillar has a legacy of providing products and services that continually improve the quality of life and the environment by helping our customers fulfill society's need for infrastructure in a sustainable way. Sustainability is one of Our Values in Action and a strategic area of focus. It's part of who we are and what we do every single day.

## 2030 SUSTAINABILITY GOALS

We're committed to achieving these seven goals by 2030. (Where applicable, progress is measured from a 2018 base year.)

- **Operations Energy & Emissions**  
Reduce absolute GHG emissions by 30%
- **Operations Water**  
Implement water management strategies in 100% of high-risk areas
- **Operations Waste**  
Reduce landfill intensity by 50%
- **Product Emissions & Energy Efficiency**  
100% of new products more sustainable than previous generation
- **Remanufacturing**  
Increase sales and revenues by 25%
- **Employee Health & Safety**  
Reduce recordable injury frequency by 50%
- **Customer Safety**  
Provide leadership in the safety of people who work in, on and around our products

## SUSTAINABILITY AWARDS AND RECOGNITION

For a complete listing, please see our latest Sustainability Report.

- **Newsweek**  
America's Most Responsible Companies 2023 (#294)  
Most Trusted Companies (#7)
- **Wall Street Journal**  
Best Managed Companies of 2022 (#29)
- **Barron's**  
2023 100 Most Sustainable U.S. Companies (#74)

## ENVIRONMENTAL DECLARATIONS

We're adding Environmental Declarations to our product specification documents where you can find model-specific information about:

- Emissions standards
- Lower-carbon intensity fuels compatibility
- Air conditioning refrigerant
- Paint composition
- Oils and fluids
- Sound
- Fuel-saving features/technology
- Recyclability (if available)



## WANT TO LEARN MORE ABOUT HOW WE'RE SUPPORTING YOUR SUSTAINABILITY JOURNEY?

Visit [caterpillar.com/sustainability](https://caterpillar.com/sustainability) to access our:

- Current sustainability report and executive summary
- 2030 sustainability goals and progress
- Climate and energy statement
- Examples of sustainability in action

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