Ecodesign and Ecoconcepts
Contractors Face Increasing Pressures

- **Economic**
  - Fuel and material costs
  - Waste disposal costs
  - Cost of regulatory compliance

- **Environmental**
  - Air quality and greenhouse gas emissions
  - Waste
  - Land use/job site impacts

- **Social**
  - Job site safety
  - Shortage of skilled labor
  - Reputational impact (e.g. ability to hire)

**Voice of Contractors:**
“How will you help me respond to the pressures?”
Sustainability in New Product Development

- Economic
  - Life Cycle Cost
- Environmental
  - Fuel/Energy Efficiency
  - Air Quality Emissions
  - Greenhouse Gas Emissions
  - Materials Efficiency
  - Manufacturing Impacts
  - Supply Chain Impacts
- Social
  - Safety
  - Sound

When a Product/Practice/Initiative satisfies all 3 criteria, it is considered sustainable

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Sustainability In New Product Development: More than “Environmentally Friendly”

- Helping customers get more done with less
- More productivity and efficiency
- Lower owning and operating costs
- Less waste
- A safer jobsite
New releases are RESOURCEFUL.
In more ways than one.

- **2X** oil and filter change intervals
- **10% to 30%** less fuel consumed per hour
- **0** fan belts to replace or adjust
- **10%** more material moved per hour
- **25%** more material moved per gallon of fuel
- **10% to 30%** reduction in GHG (CO₂) emissions
- **50%** quieter cab
- **35%** more visibility
- **50%** longer life for the electric drive train
- **1+1** built to be re-built for a second life
- **60%** fewer moving parts in the electric drive train
- **70%** lower undercarriage owning & operating costs with optional SystemOne™ undercarriage

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60% Fewer Moving Parts

Power Train Comparison

D7R
- 3176 Engine
- Torque Divider
- Powershift Transmission
- Spur Gears, Bevel Gears & Differential Steering
- Hydraulic Steering Motor

D7E
- C9.3 Engine
- Generator (Gen)
- Power Electronics
- Spur Gears, Differential Steering
- Hydraulic Steering Motor

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Less Fuel Used per Hour

- 10% to 30% less fuel per hour
- Lower lifetime greenhouse gas (CO₂) emissions
- A 25% reduction in fuel use would mean 25% less CO₂
- Bio-diesel compatible
Life Cycle Management - Facts

- >95% of mobile construction equipments are **recyclable** due to the nature of the components used (mostly iron and steel)

- In average **80-85%** of mobile construction equipments **weight is made of steel** or iron

- Currently between **30-40% of the steel used** on new produced equipment **is recycled**

- Availability of recycled steel requires use of virgin material
Cat 2020 Sustainability Goals
For Products, Services and Solutions

- Provide leadership in the safety of people in, on and around our products
- Reduce customer greenhouse gas emissions by 20%
- Increase customer energy efficiency by 20%
- Increase customer material efficiency by 20%
Thank You
Which method are you using to Find % of Steel/iron Recycled Content?

- 2 Methods of Finding % Steel Recycled Content
  - **Method 1** – Caterpillar Experts
    - Mini Mill = 100% recycled content
    - Integrated Mill = 15% recycled content
  - **Method 2** – Steel Recycling Institute
    - Mini Mill = 82.8% Recycled Content
    - Integrated Mill = 28.9% Recycled Content
How do you currently supply machines worldwide?

- Multiple Sourcing/production for each selling region
- Supply chain developed to limit transportation. Both Components and raw material + finished goods
- Using Total cost logic rather than material cost only.
- Containerization (where possible) to reduce shipment cost and improve transportability