Sustainability, Cloud and the Circular Economy

Oracle's Journey to a More Sustainable Future

5th Annual
Global Supply Chain Excellence Summit

USCMarshall
Center for Global Supply Chain Management

Our Sustainability Path

- Climate Change / Globalization
- Regulatory Pressures
- Stakeholder Expectations
- ICT as a Opportunity & Target

Business and Societal Need

- Annual Survey
- CDP rating now "A-Gold"
- Other awards and recognitions
- Moving from Relative to Absolute goals
- Strengthening alignment to core business strategy

Results & Feedback

Executive Commitment

- CEO Support
- Published environmental policy
- Creation of CSO Role and team

Priorities, Programs & Goals

- Materiality Assessment
- CDP Engagement
- CSR Expansion
- Regular Goal Setting
- Internal awareness workshops

Cross-Functional Organization

- Embedding in every LOB
- Coordination via Environmental Steering Committee
- Focused Workgroups

Sustainable Supply Chain

- Oracle manages its supply chain to comply with all applicable regulations

- Sustainability is a consideration throughout every phase of product lifecycles

- Oracle employs socially and environmentally responsible business and sourcing practices, including:

  - Supplier code of ethics and business conduct

  - Human rights and conflict minerals

  - Recycling and recovery program for workplace assets

  - Sustainable procurement statement and leveraging technology for

  - Supplier diversity program

  - Travel reduction

- Oracle is also engaged with industry, trade, and government organizations and associations

Sustainability through Efficiency
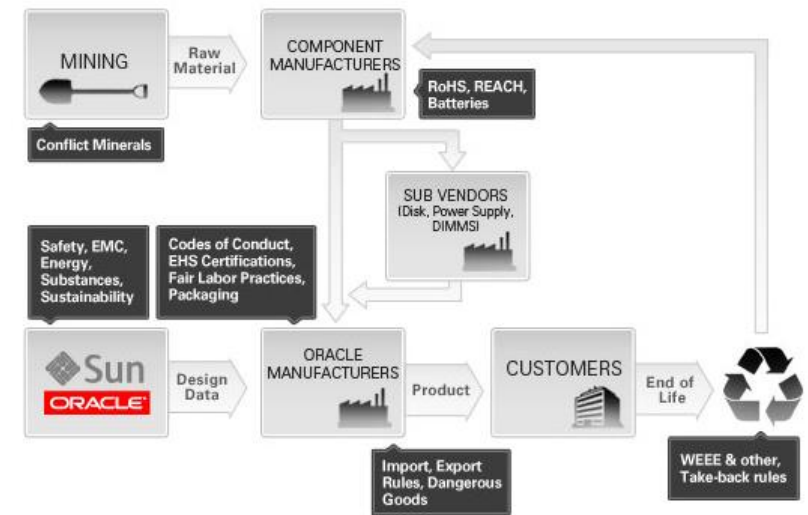
- Radical transformation of our hardware supply chain:

  - Build to Stock to Build to Order

  - Fragmented Sourcing to selected Single Sourcing

  - Revenue based forecasting to Unit Based Forecasting

  - 3+ Tier Distribution to Direct Ship

  - Lowest Deliver Time to Most Predictable Delivery Time

  - Single Supply Chain Model to Dual Model

  - Fragmented IT systems to Integrated System

  - From a failing business at Sun to a profitable one in Oracle

- Results in first year - $100m reduction in Excess and Obsolete
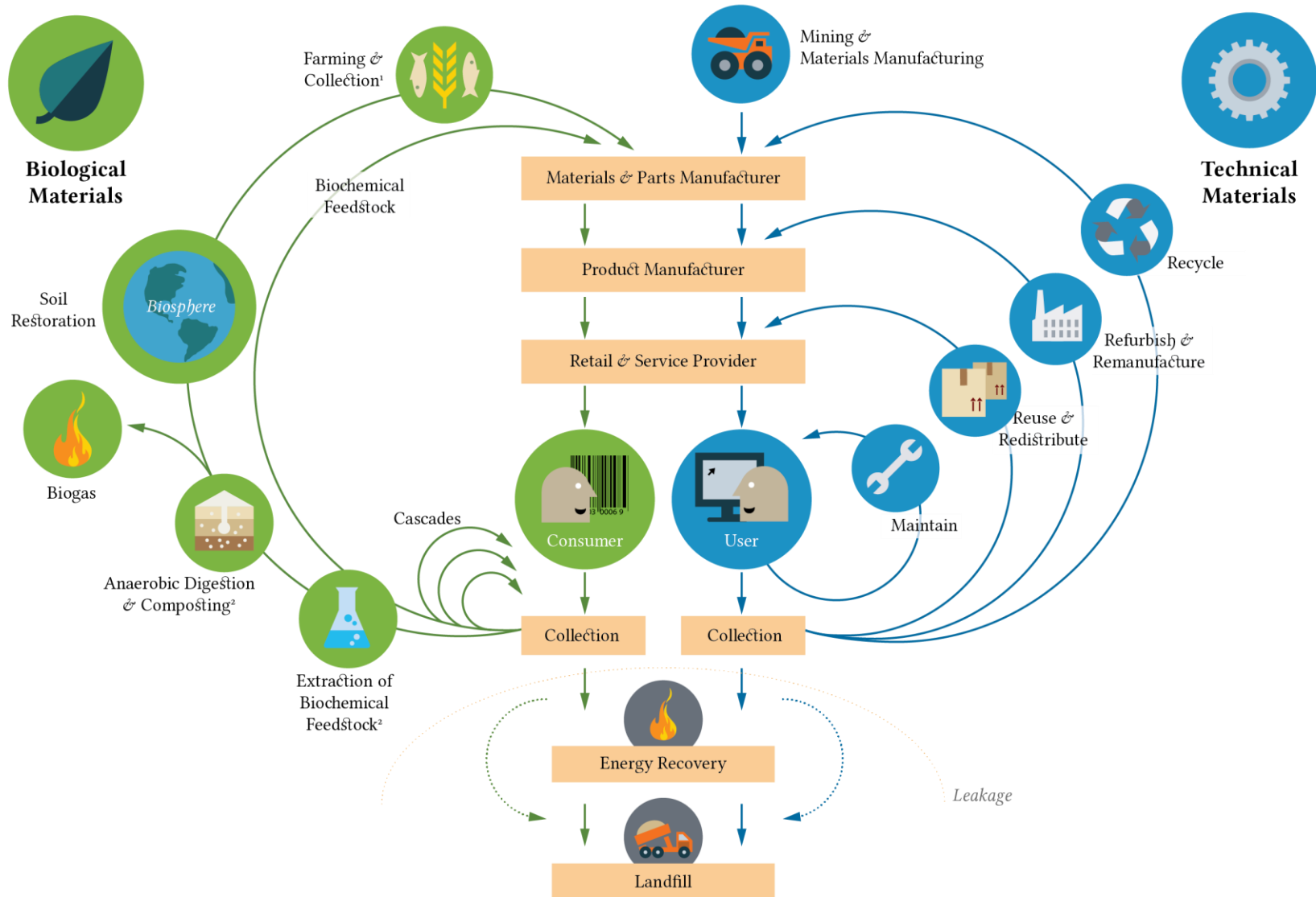
A great example of a Triple Bottom Line Benefit

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So What's Next?

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The Circular Economy

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Biological Materials

Technical Materials

Farming & Collection[1]

Mining & Materials Manufacturing

Biochemical Feedstock

Biosphere

Soil Restoration

Recycle

Biogas

Refurbish & Remanufacture

Anaerobic Digestion & Composting[2]

Reuse & Redistribute

Cascades

Maintain

Consumer

User

Extraction of Biochemical Feedstock[2]

Materials & Parts Manufacturer

Product Manufacturer

Retail & Service Provider

Collection

Collection

Energy Recovery

Leakage

Landfill

Traditional On-Premise IT Solutions

- Multiple, Inefficient Data Centers
- General Purpose Hardware
- Low Server Utilization
- Low Functional Utilization
- Linear <u>Product</u> Supply Chain

Modern Cloud Solutions

- Fewer, Highly Efficient Data Centers
- Hardware Tuned to Use-Case
- Higher Server Utilization
- Higher Functional Adoption
- Circular <u>Service</u> Supply Chain

Cloud is an ideal paradigm for a more Circular approach to IT

- Beyond its inherent business benefits, the cloud offers a more sustainable alternative for companies looking to minimize their environmental impact

- Cloud enables customers to take advantage of highly efficient cloud infrastructure optimized for processing, energy, and cooling efficiency:
  - **E.g. Oracle Utah and Oracle Austin are 70% more efficient than legacy enterprise data centers**
  - **Both data centers are EPA Entergy Star certified**

- Reduced environmental waste by maximizing the reuse and recycling of hardware, aligning with the [circular economy](#)

- Increased leverage through [The Corporate Colocation and Cloud Buyers' Principles](#)

Product Stewardship
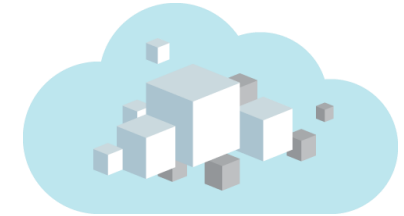
- Over **3 million pounds** of product was taken back in FY16, of which **99.6%** was either recycled or reused

- Product take back program provides a valuable service to Oracle customers as they migrate to new technology

- Spares harvesting for reuse enables the extension of product support to other Oracle customers

- The [program](#) is compliant with recycling, environmental, export and data security regulations

- Financial recovery supports Oracle's long term [circular economy](#) objectives

Oracle recycling partner in Roseville, California

Recovery & Reuse greatly simplified through maintaining control of IT assets in the Cloud

Product Design

- Oracle recognizes that the environmental impact of a product is largely determined at the design stage

- Among the environmental criteria we consider are:
  - energy efficiency
  - product serviceability
  - recyclability
  - upgradability
  - material conservation
  - hazardous material requirements

Design for Environment workshop held in Santa Clara, California

Server design now being optimized for specific Cloud data centers configurations, Cloud application use cases, and our own Cloud recovery and reuse.

Enabling Technology

- Embedding environmental considerations into all supply chain business processes

- Measure, manage, and optimize

Ideation

Design

Product Take Back

Planning

Maintenance

Sourcing/ Procurement

Logistics

Manufacturing

Internet of Things

Big Data

Business Analytics

Key Take Aways

- Sustainability is everyone's business.

- Global Supply Chains provide great opportunities for organizations to become more sustainable.

- Technology is a sustainability enabler.

For more information:

www.oracle.com/citizenship

www.oracle.com/green

www.youtube.com/OracleSustainability

The World has Changed

POPULATION GROWTH

7.3 Billion
World population estimated in 2015

9.7 Billion
Projected by 2050

CONSUMER GROWTH

2X
Middle class nearly doubling in size by 2030

By 2030 middle class grows to nearly
5 Billion

EMISSIONS GROWTH

1.2 Billion
Cars globally in 2014

By 2035 projected to grow to
2 Billion

RESOURCE ISSUES

Energy **Volatility**

Resource **Scarcity**

Electronic **Waste**

Conflict minerals

CLIMATE DISRUPTION

$53 Billion

Climate-related economic damages in 2016 across the United States

FINANCIAL BURDEN

Growth
in environmental fines

Increasing
producer responsibilities

Rising
commodity prices

The Role of ICT

- The ICT sector consumes approximately **7 percent** of global electricity

- Data centers energy demand is estimated to increase by **81 percent** by 2020

- ICT-enabled solutions offer the potential to reduce global 2020 GHG emissions by **16.5 percent**

- A threefold increase in global internet traffic by 2020 will bring over **4 billion** people online globally

Source: Greenpeace

Our Customers Care …
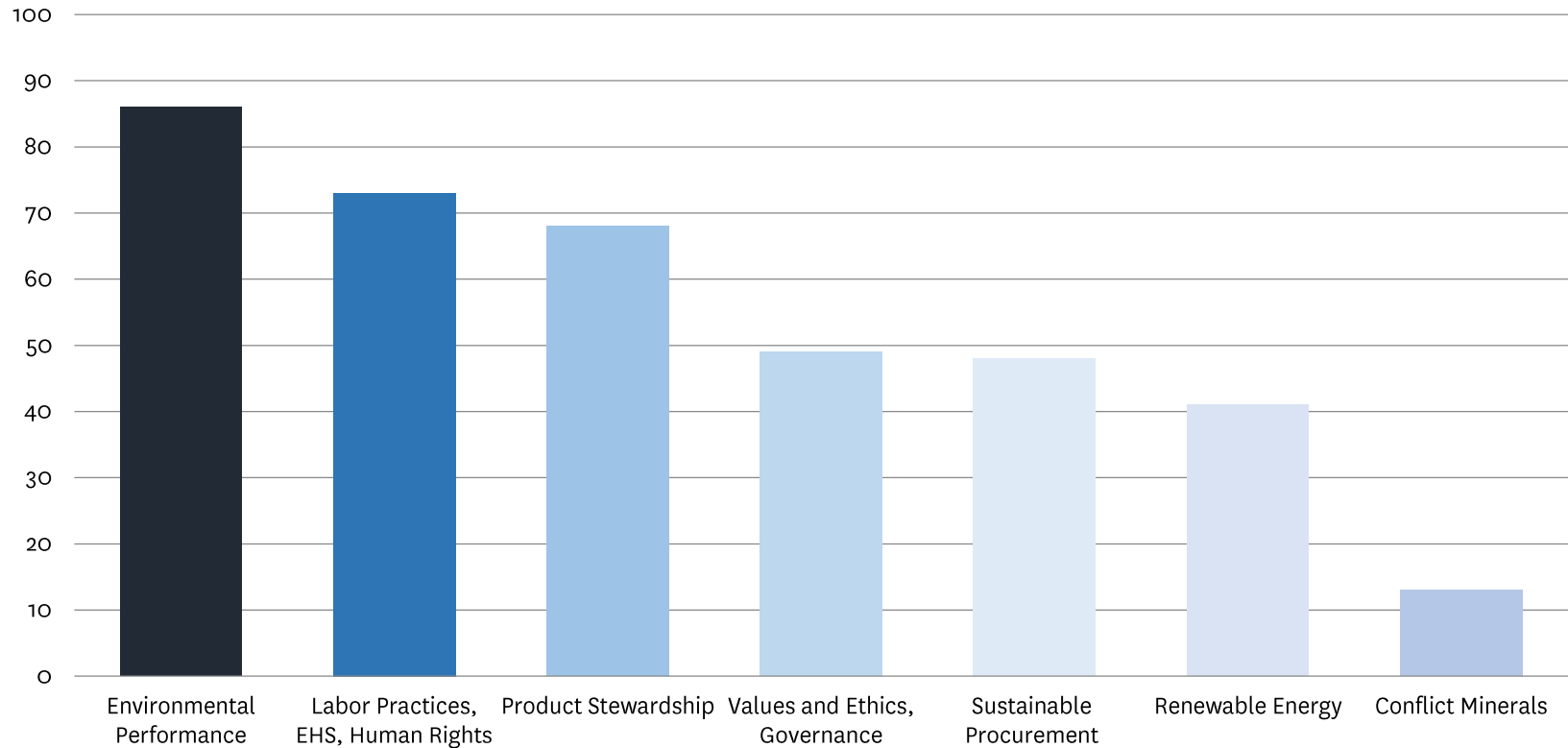
- 165 inquiries related to $1.12B in revenue

- Millennials are **66 percent** more likely to choose employers when issues of social and environmental responsibility are brought to the forefront

- **84 percent** of Americans believe businesses have a responsibility to bring social change on important issues to the forefront

Source: Global Strategy Group

"For Oracle, corporate citizenship means being responsible not only to our shareholders, but also to our stakeholders—those affected by and with an interest in our activities—including employees, customers, partners, society, and the environment."

Safra Catz, Chief Executive Officer
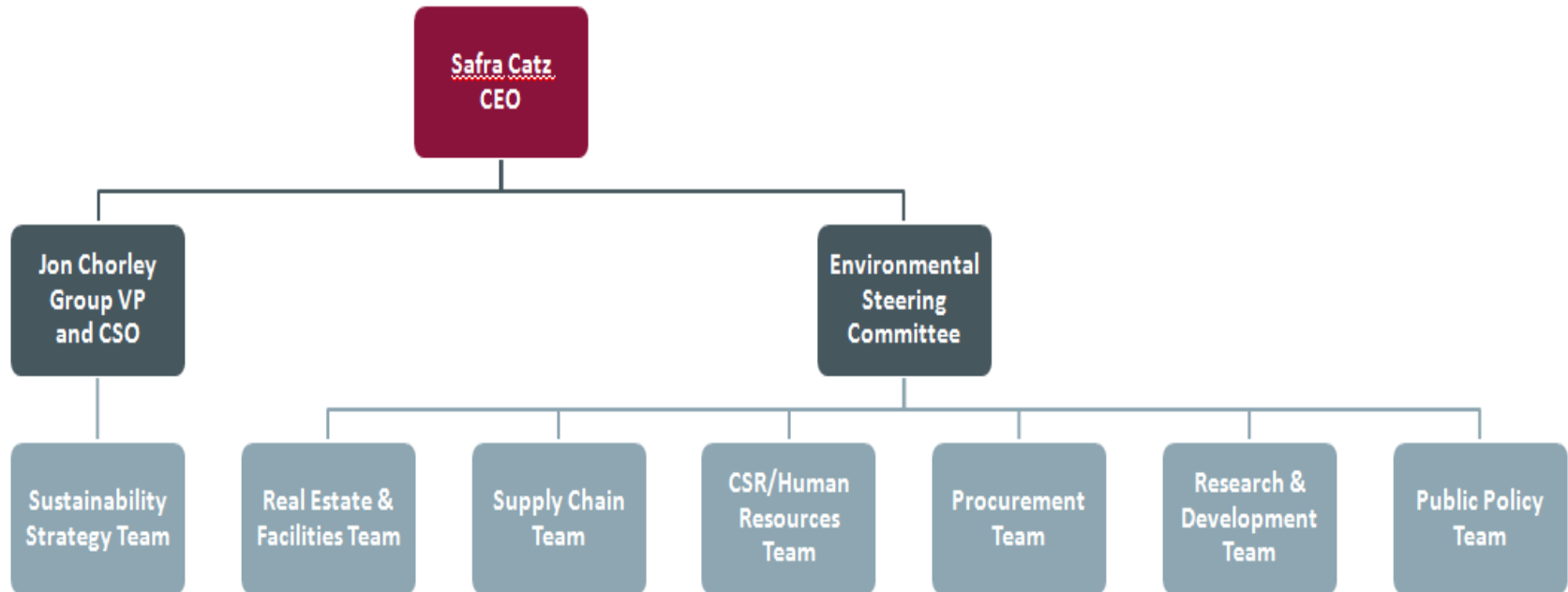
- Annual Meeting (All)

- Quarterly Meetings (ESC)

- Monthly Meetings (Leads)

Tier 1

- ✅ Education and digital inclusion
- ✅ Emissions in the cloud
- ✅ Financial performance
- ✅ Product stewardship
- ✅ Responsible supply chain and sustainable procurement
- ✅ Sustainable product design

Tier 2

- ✅ Corporate giving
- ✅ Data privacy and security
- ✅ Diversity and inclusion
- ✅ Employee engagement and development
- ✅ Governance
- ✅ Health, safety, and wellness
- ✅ Non-data center emissions
- ✅ Use of water in operations
- ✅ Values and ethics
- ✅ Waste from operations

Tier 3

- ✅ Employee travel
- ✅ Events management
- ✅ Product packaging
- ✅ Public policy
- ✅ Transportation and logistics

The topics are listed alphabetically within each tier. Tier 1 represents topics that are most material to Oracle. Only material topics are shown.

Well-structured sustainable practices deliver triple bottom line benefits to people, planet and profits

- Sustainable Facilities
- Sustainable Data Centers
- Sustainability Solutions
- Sustainability in the Cloud

- Sustainable Supply Chain
- Product Stewardship
- Product Design
- Employee Engagement

"At Oracle, sustainability is everyone's business. We maintain our facilities and run our business in a responsible manner, minimizing environmental impact. We also develop products and services that support sustainable operations and initiatives—ours and others'."

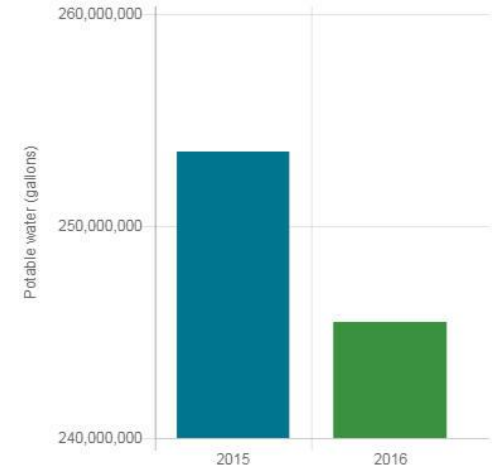—Jon Chorley, Chief Sustainability Officer

Waste to Landfill

- Last year, reduced total waste to landfill by more than 21%
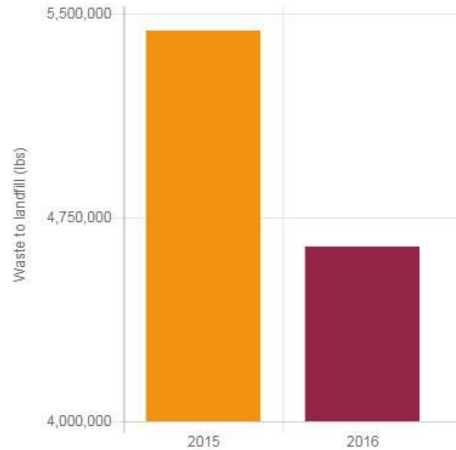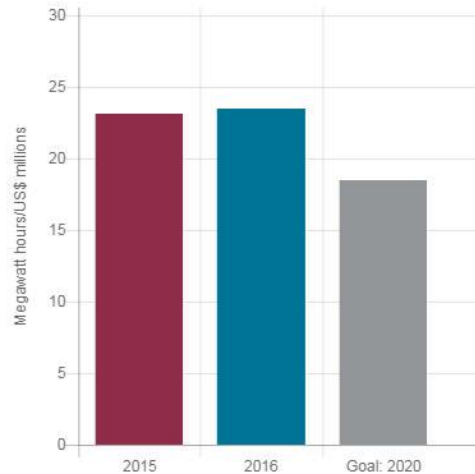

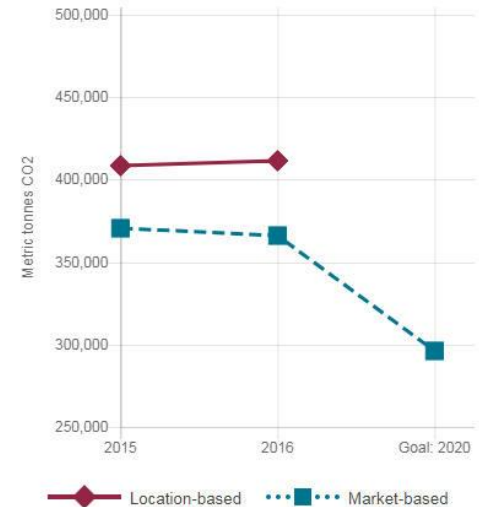## Potable Water Use

- Exceeded 2016 goal by 15%

Energy Use Per Revenue

- 29% of that electricity usage now sourced renewably

Total Scope 1 & 2 Emissions

- Moved from "D" to "A" rating in CDP

Sustainability goals

by 2020 to reduce energy use and absolute emissions by 20%, potable water use and waste by 25% per sq. ft. and use 33% renewable energy

2020 goals measured against 2015 baseline. Energy / emission / renewable goals are scope 1 and 2. Energy and emissions goals measured for leased and owned facilities, including data centers. Water and waste goals measured for owned facilities, only, including data centers.

Learn more at
oracle.com/citizenship