Neutral Supply Chain

Sustainable Supply Chains

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Energy Innovation Summit

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The Neutral Journey

2006

John Allan CBE
President CBI
Chairman Tesco Plc

"We are only talking about this"

2009

The Neutral Group

"A Group of ideas"

- DHL Innovation Start up
- "No silver bullets"
- Engineering led Technology Integrator
- Catalyst for "Go Green"

2012

The Neutral Group

"A Wider World"

- Management buyout
- IBDAA Dubai City Program
- McDonald's Asia Program
- Lockheed Martin Masdar City

Now

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"Sustainability 2.0"

- UN Somalia Turnaround
- NGO Remote Services
- Maritime Emissions
- Dynamic Supply Chain Alignment

DHL GOGREEN

GOVERNMENT OF DUBAI

McDonald's

LOCKHEED MARTIN

United Nations

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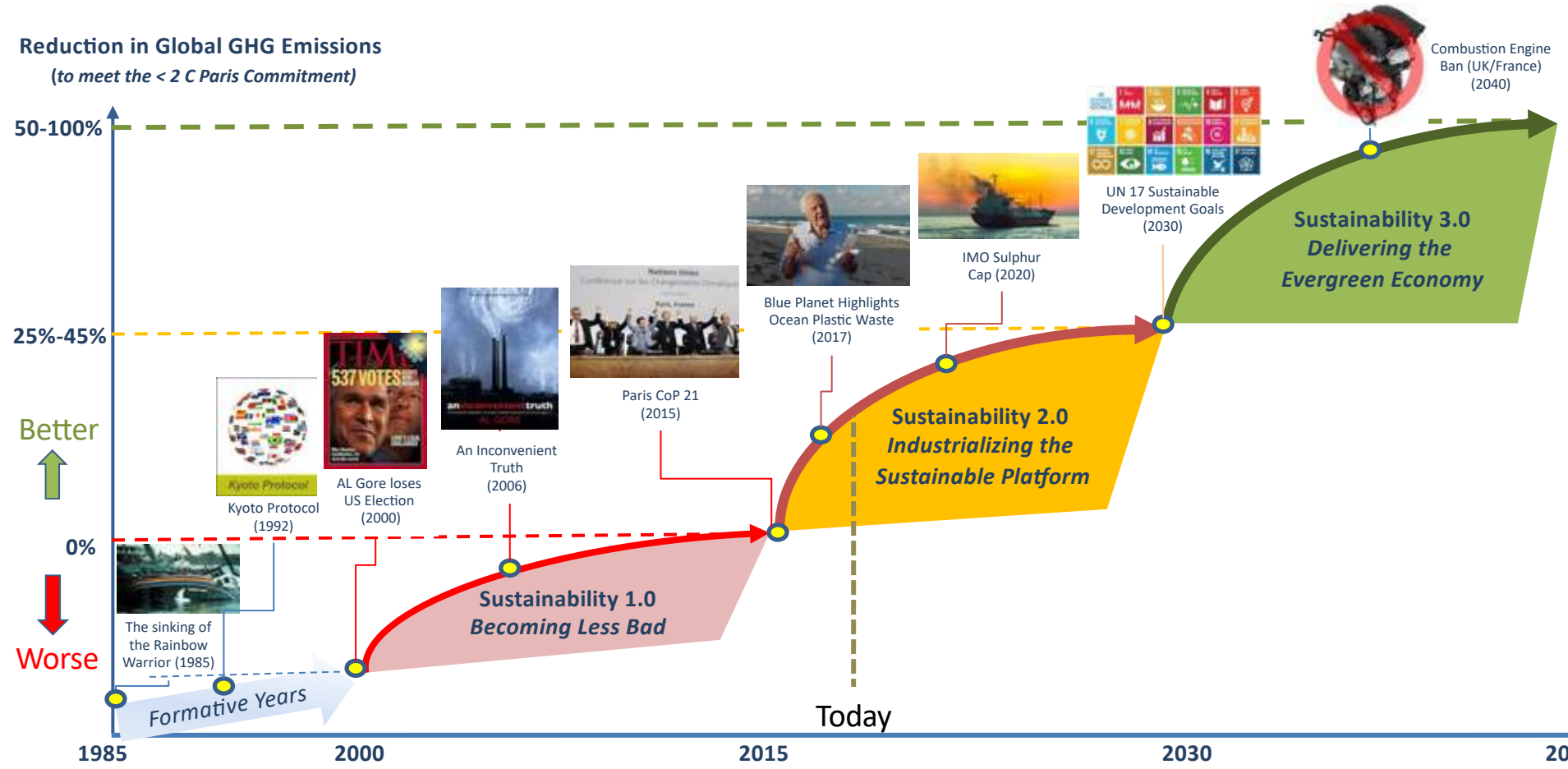
Our World's De-Carbonization Journey

Despite the progress, *we are starting to get behind !*



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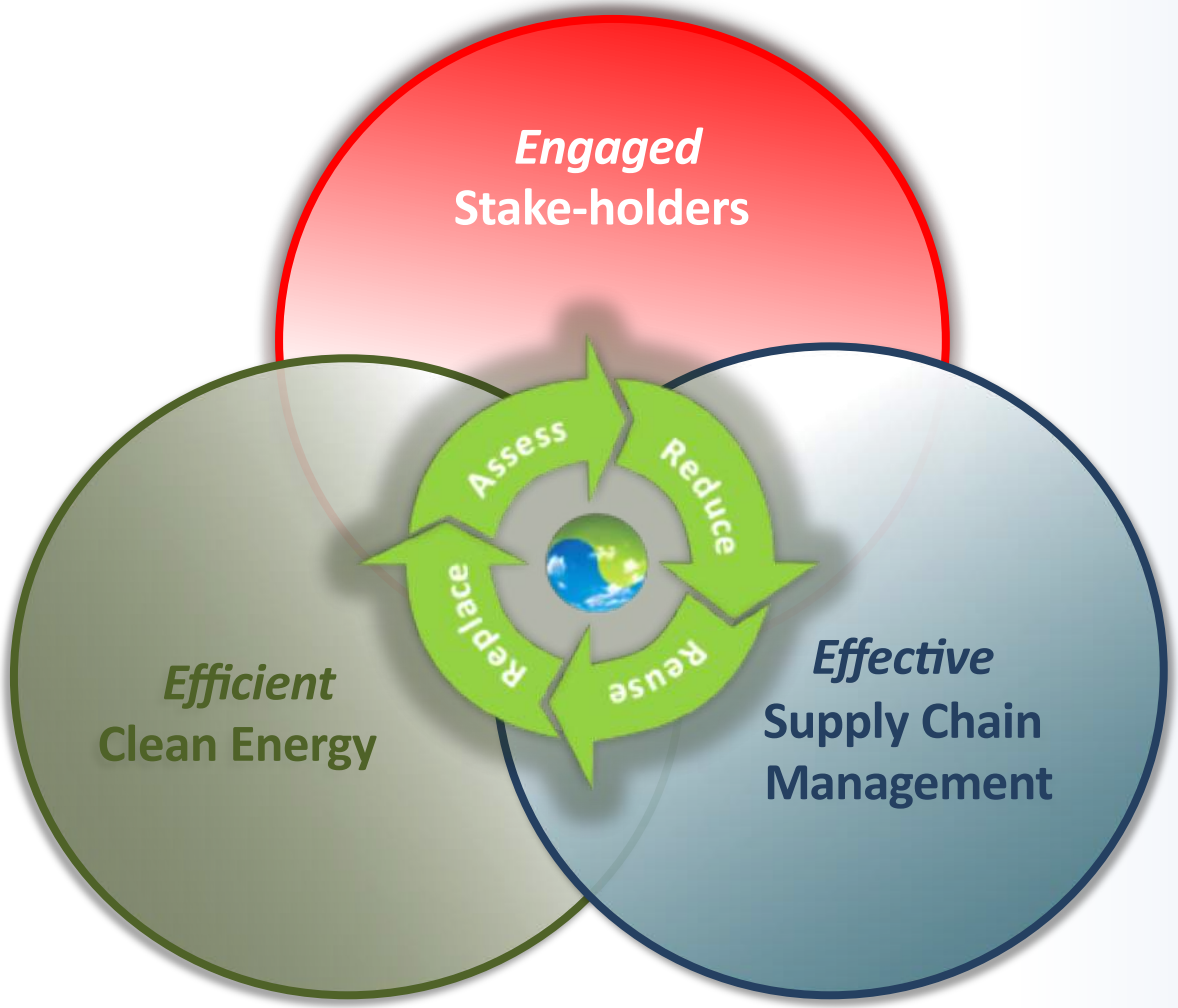
Our Approach



Seven Key Lessons Learnt

1. **A Leader's Moment of Revelation.**
2. Passion gives Way to Pragmatism.
3. **Cannot Manage What You Don't Measure.**
4. Find Building Blocks not a Thousand Points of Light.
5. **The Hidden Business Case.**
6. New Relationships and Networks Emerge.
7. **Not an "And" its "The" Approach.**

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The Supply Chain Building Blocks: Buildings and Vehicles

We have demonstrated 25-35% of energy reduction in the "building blocks", but can we add them altogether in "Sustainability 2.0" ?

Raw Materials

Factories

Port

Long-Distance Freight

Distribution Centres

Retail Outlets

Consumers

Recycling/ Waste Management

Existing Building Assets:-

- Energy: 30-35% Reduction
- CO_2 Emissions: 60-80% Reduction

Existing Transport Assets:-

- Energy: 25-35% Reduction
- CO_2 Emissions: 70-80% Reduction

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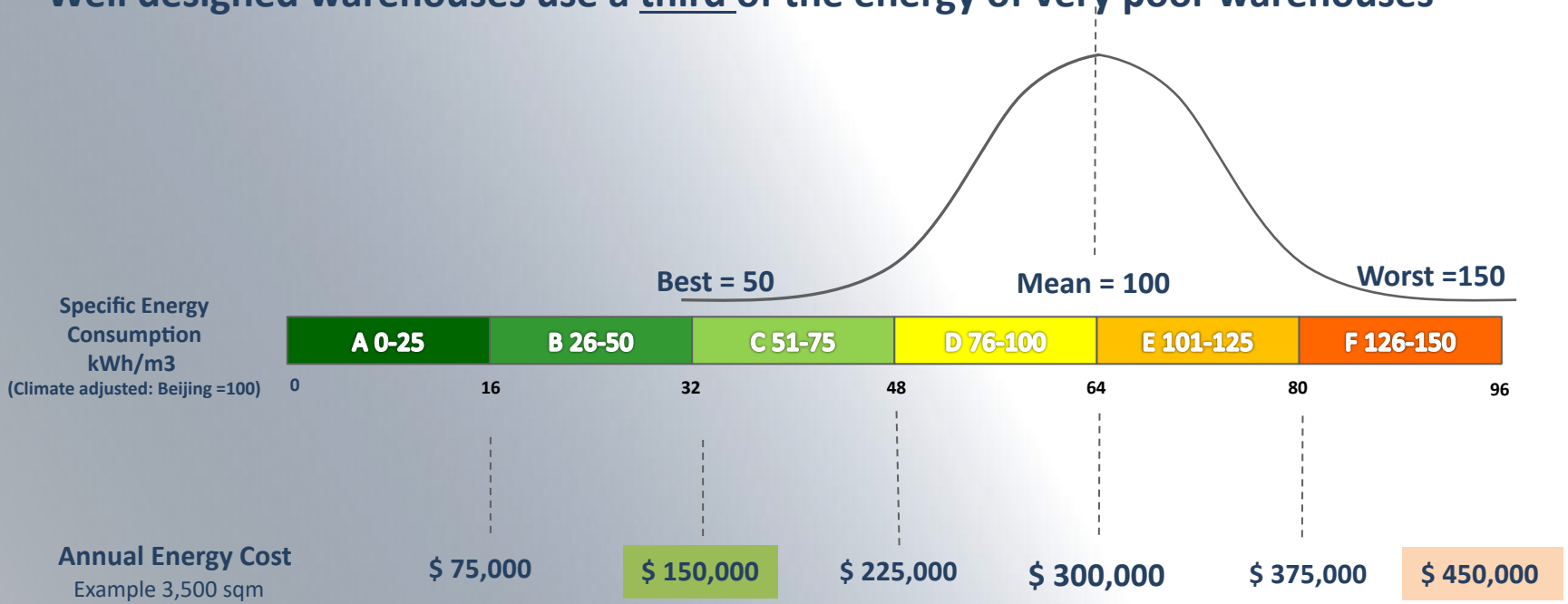
Why Energy Efficient Buildings Makes Economic Sense

Well designed warehouses use a third of the energy of very poor warehouses



Incremental Build Cost
$ 2,150 per sqm

Annual Energy Saving
up to $ 300,000 p.a.

25 Year Energy Savings = $ 7.5m

- Based on 3,500 sqm facility
- 60% Freezer/ 40% Chill storage mix
- Consumption of 750 kWh/sqm
- Adjusted to 960 kWh/sqm for Surabaya's climate
- Local electricity cost of $0.09/kWh

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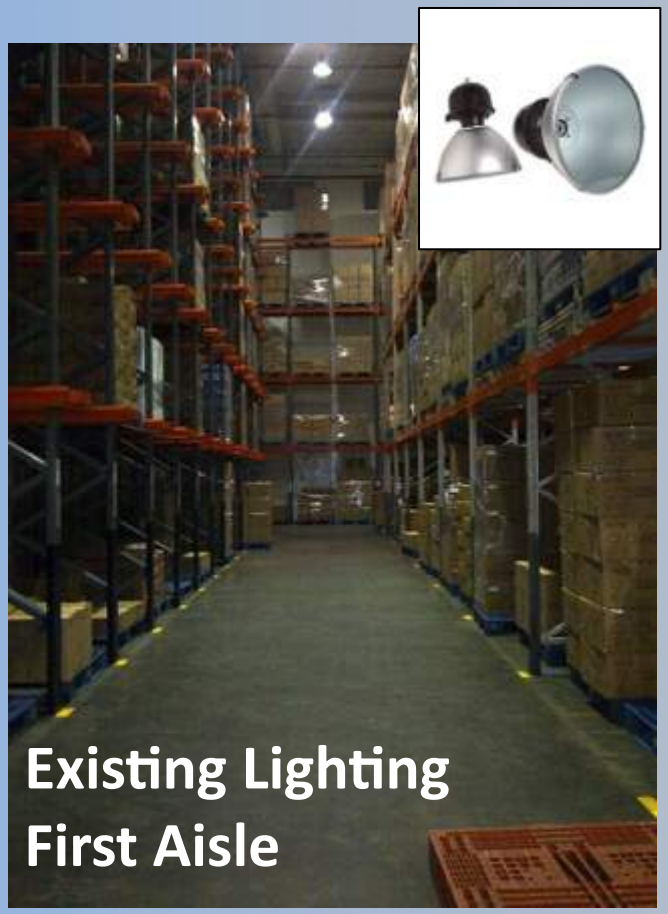
How Possible ?...Have You Seen the Light !

A new lighting system can increase the light level and reduce energy consumption by 85% .....with further savings in chilled and frozen areas (heat reduction).



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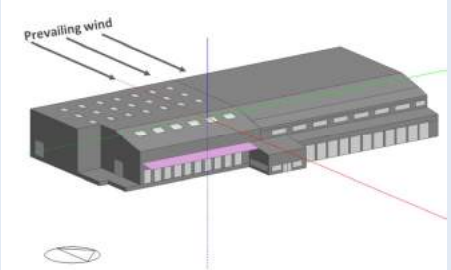
Reducing Building Energy Consumption by over 50%

Building Layout & Orientation



Guideline	**Orient truck doors away from the prevailing wind**
Typical energy saving	**10% of external door infiltration**

Insulation Materials & Methods

PIR composite insulated panels in a refrigerated warehouse
Source: Polyurethane Europe

Advanced Cooling Technologies

Adiabatic condenser cooling system
Source: Excalibur

Remote Metering

Air Flow Management & Door Systems

Air curtain installed above door

Reflective Exterior Coatings

Temperature under similar conditions after the application of a cool roof coating: 34° C

Advanced Lighting Systems

LED high bay lighting in a cold store
Source: Oxford Cold Storage Company, Melbourne, Australia

Power Quality Correction

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Reducing Vehicle Emissions between 30-70%

Fewer Kilometres Driven..

Active Vehicle Routing

Optimal Network Design

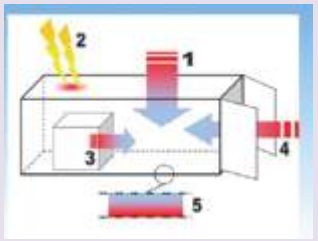
+

...consuming fewer litres still

Driver & Vehicle Telematics

Superior Aerodynamics

Delivery Energy Efficiency



Vehicle Specification

+

...using cleaner fuels

Renewable Fuels & Hybrid

Electric Vehicles

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Moving to Renewable Energy Networks

We take an holistic approach to match the energy needs of you and your neighbourhood with the optimal renewable energy generation available

Energy Microgrid Network Framework

Demand Profile *Demand Profile* *Demand Profile*

User 1 User 2 User n

Synergistic Demand Collective Networks

Energy Storage | Micro Generation | Peak Power Optimization

On Site(s) Generation

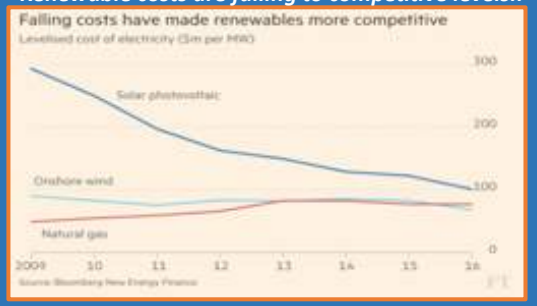
Network Sourcing Management

Aggregated Supply and (Net) Demand Management

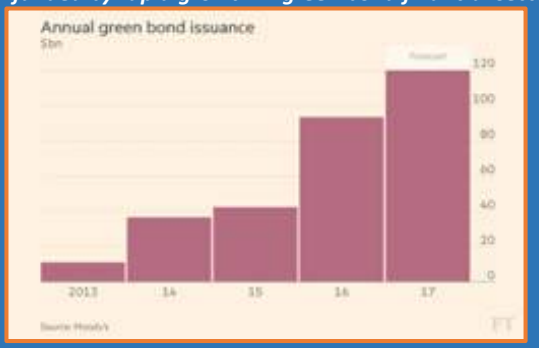
Top up from "on demand" Grid | Unbundled Energy Certificates | Green Energy Tariffs | Off site Project PPAs

Sources of supply

Renewable costs are falling to competitive levels..



..funded by rapid growth in green bond financial sector



Off Grid Storage

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The Return to Value Funnel

Material Resource Streams

Lifecycle Design for Circular Economy

Share Resources for Optimal Use

Extend Life Repair/Reuse

Recycle to Same Form

Recycle to Lower Form

Turn Waste to Energy

% Waste Escape to Environment

Increasing Recovered Value ($)

Increasing Harm & Cost

Return to Value Levers	Reuse Level[1]	
Reduce unnecessary packaging	?	
Only pay for what you use	?	
Reduce item consumption levels		18%
Reduced replacement item cost		
Eliminate Landfill cost[2]/gain income		35-55%
Eliminate Landfill cost[2]/ reduce energy cost		

1: 2016 Accenture survey of 503 > $1bn "Products" organisations
2: Cost = Transport Cost + Landfill Cost+ Taxes

DHL's *Go Green* Program

- 2008 in coming DP-DHL CEO Frank Appel launched DHL's "Go-Green" program with a 2020 goal to ***reduce CO2 intensity by 30% by 2020***.

- March 2017- Appel announced DHL had reached this target **four years early**:–
  - Created a rigorous "**carbon accounting**" framework
  - Created World's first **carbon neutral warehouse** (retrofit) and as the template for a extensive global building retrofit program.
  - Educated DHL Express drivers to **drive more efficiently**.
  - Increased **vehicle fill** in more aerodynamic **teardrop trailers**.
  - Sourced **two thirds** of electrical supply from renewable sources.

- In 2011 frustrated by Volkswagen's lethargy to develop electric post vans:-
  - Committed to its own electric vehicle acquiring **StreetScooter GmbH**
  - Delivered **2,500 in operation by end 2016** with a commitment to double
  - **VW CEO Matthias Mueller** "*I am annoyed beyond measure, why Post did not talk to our Commercial Vehicles Division about doing something* ?"

- In 2017 Appel launched **Mission 2050** a far reaching commitment:-
  - 2025 will increase the **carbon efficiency by 50%** (vrs 2007 baseline).
  - Goal of **zero emissions logistics by 2050** (own & subcontractors).

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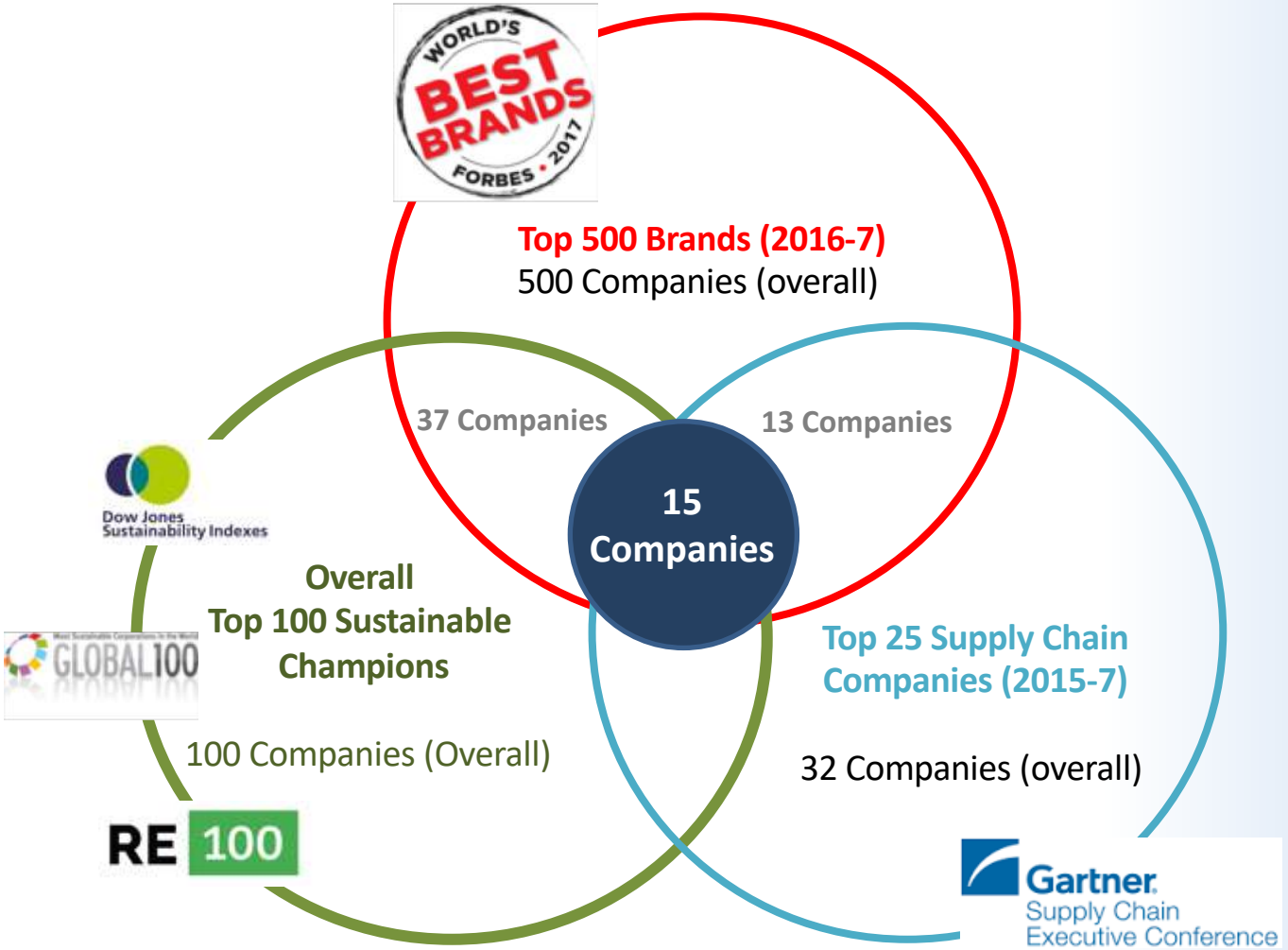
The Hidden Business Case - Inspired Productive Employees

- June 2008: DHL wanted to know what it would take to make a Warehouse Carbon Neutral.
- Normanton Distribution Centre volunteered (Contract to distribute the new iPhone for O2).
- The building was in poor condition, cold, poorly lit and very energy inefficient.
- Investment was made in:-
  - LED Modern Lighting
  - Ground Source Heat Pump to heat the building
- The facility achieved a 98% carbon neutrality, offsets were purchased to achieve 100% !
- Two years later, this site recorded a 50% higher employee satisfaction rate than average.
- The employees had become inspired by the transformation, they:
  - Instituted their own car share and bicycle to work scheme
  - Created a wet land area at the North of the site (from the GSHP excavation)
  - Were keeping Bees on site
  - Were recycling food waste in their own designed Anaerobic Digestor.
  - Were considering an on-site wind turbine.
- Every Operational KPI had significantly improved.
- Their Customer O2 was delighted !

The Emerging Sustainable Supply Chain Champions



Three Measures of Success

1: Brand value is being enhanced
78% of the "leaders" group had higher brand positions (valuation) in the Forbes 500 index of most valuable brands over their peers.

2: Shareholder value is growing 25% faster
The 'leaders" group have grown their share price on average **25% faster times** versus their peers since World Financial Crisis.

3: Employment brand is strengthening
85% of the "leaders" were in the Forbes 500 Global Great Places to Work with two- thirds ranked above their peers.

Source: 2018 Neutral Supply Chain Independent Research & Analysis

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What Sustainable Leaders Do Differently

1. **They are building upon already stand out achievements.**
2. Courage to take the longer term path in a World of short term pressures.
3. **Respond to the radical transparency demanded by increased customer expectation.**
4. Their goals are visionary and radical and not incremental.
5. **They focus right across their supply chains and back again.**
6. Communications are authentic in nature, validated by data and are humble in tone.
7. **Not an *"AND"* approach, its *"THE"* approach.**

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And Finally….

Never let something important become urgent
Eliyahu Goldratt