The Carbon Footprint of Freight:
Tools & Methods

Different Perspectives on Measuring the Carbon Footprint of Transportation

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Con-way's Operating Companies

Menlo Worldwide Logistics

Supply Chain Management

Founded:	1991
2010 revenue:	$1.5 billion
	€1.1 billion
Employees:	6,500
Geographic scope:	5 continents
Non-asset based	

Con-way Freight

LTL Transportation

Founded:	1983
2010 revenue:	$3.1billion
	€2.2 billion
Employees:	> 16,000
Geographic scope:	North America
Trucks: 8,600	Trailers: 25,600

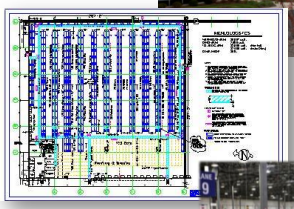
Con-way Truckload

Truckload Transportation

Founded:	1951
2010 revenue:	$570 million
€413million	
Employees:	4,000
Geographic scope:	North America
Trucks: 2,900	Trailers: 8,200

Warehousing, Manufacturing Support and Distribution Services

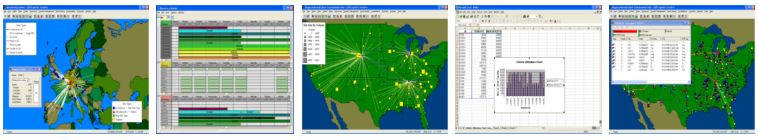
- Site location analysis
- Facility sizing and design
- Dynamic slotting
- Inventory management
- Full service distribution
  - Pick and pack
  - Kitting
  - Value added services
- Vendor managed inventory
- RFID technology
- WMS with radio frequency
- Export consolidation
- Reverse logistics
- Reporting / Metrics



Transportation Management

- **Planning, Operation, Execution**
  - Transportation management IT platforms
  - Procurement
  - Rates
  - Shipment optimization
  - Tracking
  - Financials
  - Reporting / metrics
  - Contracts
  - Freight audit and pay

- **Strategic Planning**
  - Shipment aggregation and pooling
  - Total Landed Cost + Carbon
  - Modal optimization
  - Zone skipping
  - Continuous moves
  - Multi-stop truckload
  - Merge-in-transit
  - Cross docking / transloading
  - Sea-air vs. pure air or sea



Voice of Customer, Voice of Menlo

As a 3PL, we manages the nodes and flows in our customers supply chain which also account for our own Scope 1 and 2 GHG inventory. Both our customer and internal leadership are seeking:

- Support / enable sustainability initiatives
- Strategic and tactical carbon management across the supply chain
  - Network modeling to minimize cost and carbon within business requirements
  - Routing logic to ID most carbon efficient mode / carrier (SmartWay)
- Current state, benchmarking and ongoing reporting/analytics of supply chain emissions
- Goal and abatement management (NPV)
- Risk mitigation
- PR / marketing opportunities
- Product level GHG accounting

Technology Analysis: Make vs. Buy

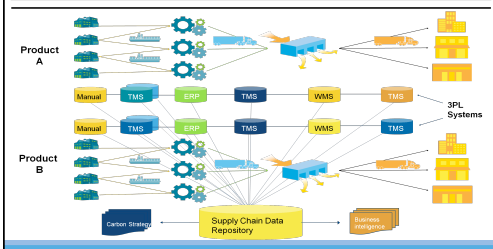
PRO

Buy

- 'Sustainability' expertise
- Brand awareness / new client exposure
- 3rd party credibility

Make

- Lean approach
- Supply chain expertise
- Access to customers and data
- Increased flexibility
- Leverage / integrate with existing tools



CON

Buy

- Limited partnership interest / $$$
- Technology focused on organizational scope 1 and 2 reporting
- No technology available connecting nodes and flows across value chain (scope 3)

Make

- Longer time to market
- No 'Sustainability' expertise
- Capital investment

CarbonNet Highlights

Menlo WORLDWIDE LOGISTICS

INPUTS

VOICE OF THE CUSTOMER

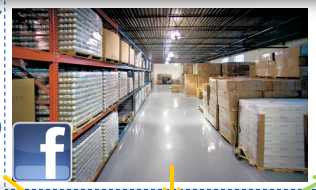
"Active management of suppliers emissions"

"Zero waste in European operations by 2020"

20% reduction in kWh/Sq Ft by 2015

100% SmartWay carriers

CREATE NODE PROFILE
CAPTURE EMISSIONS DATA



LAWS, REGULATIONS, STANDARDS, PROTOCOLS, TAX INCENTIVES, GOVERNMENT DATABASES

CARBON DISCLOSURE PROJECT

BSR

DSIRE

WORLD RESOURCES INSTITUTE

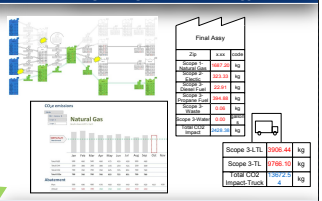
World Business Council for Sustainable Development

ENERGY STAR Portfolio Manager

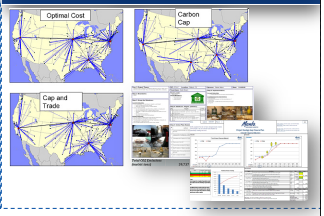
CarbonNet

OUTPUTS

CARBON VSM
NODE / FLOW ANALYSIS & COMPARISON
REPORTING AND ANALYTICS



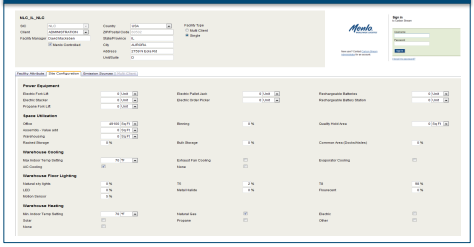
NETWORK OPTIMIZATION
CARBON ABATEMENTS
GOAL TRACKING



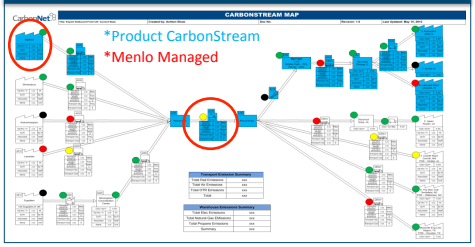
CarbonNet Highlights

Menlo WORLDWIDE LOGISTICS

Cloud Based

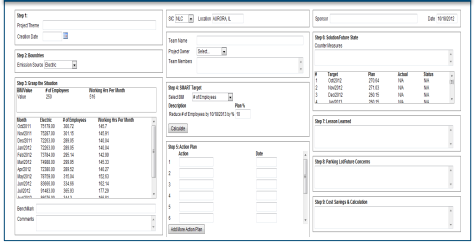


CarbonStream Map



Analytics

Abatement



CarobonStream Example