

09.30-10.15

Benefitting from the convergence of efficiency, procurement & flexibility

What does this mean for businesses, how can they benefit, and any implications for energy management structure/process going forward.



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Benefitting from the convergence of efficiency, procurement & flexibility

Wilbert Dijkhuizen on how Lineage's is benefitting from bringing together procurement, management and flex



Agenda

Sections

I	Introduction to Lineage	3
II	Introduction to Lineage Europe	9
III	Energy focus Lineage Europe	15



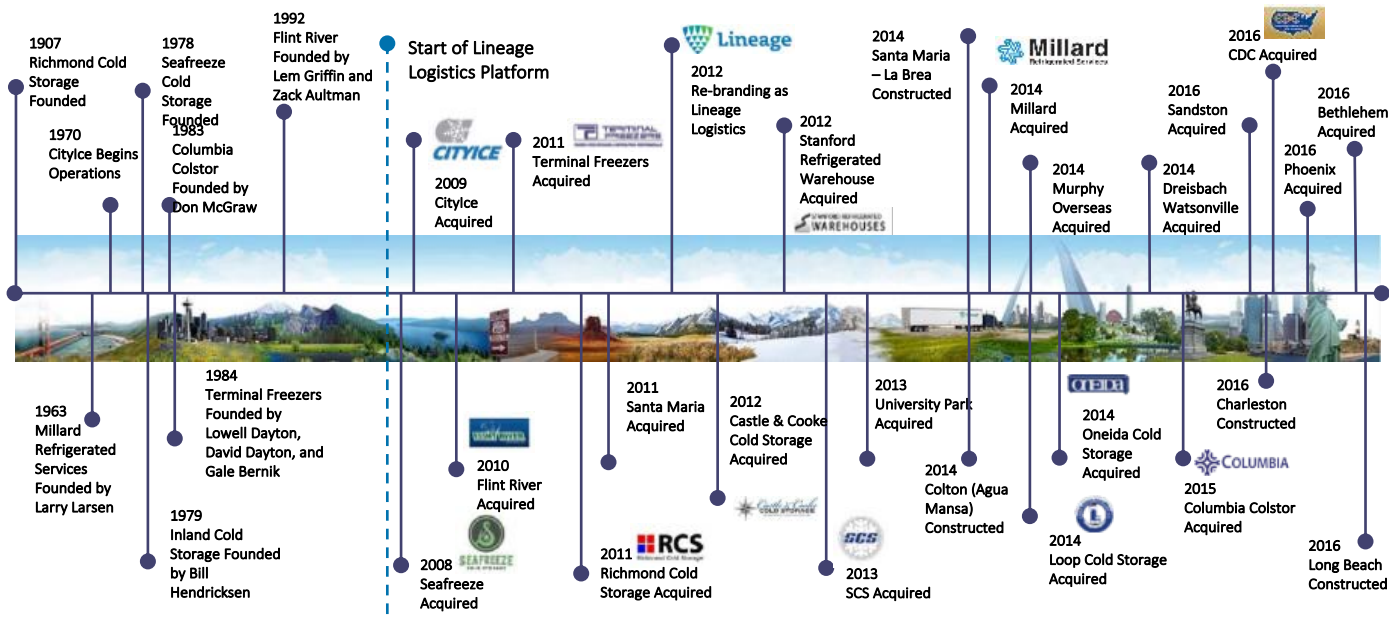
Section



Introducing Lineage

Building Lineage Logistics

- Successfully executed on 20 acquisitions since the end of 2008
- Deployed over \$2.4 billion of capital into the platform
- The companies that form Lineage were built by entrepreneurs and families over decades and generations
 - While the Lineage brand was introduced in 2012, the company's roots begin in 1907



ABOUT LINEAGE LOGISTICS

Company Overview

Lineage Logistics is a warehousing and logistics partner committed to delivering sophisticated, customized, and dependable cold chain solutions to leading food, retail, agriculture and distribution companies. We serve customers who put a premium on excellence and reliability to ensure our nation's food supply is handled, stored and delivered safely and securely through the entire supply chain



Lineage Snapshot

- 2nd largest cold storage warehousing and logistics company in North America by cubic feet
- 90 locations across 21 states with 685MM cubic feet or 24MM square feet of capacity
- Strategic locations for distribution, food harvest / production and import / export
 - Access to 5 of the busiest ports in the U.S. with customs brokerage capabilities
- Over \$880mm in TTM revenue through January 2017
- Named in Food Logistics' 2015 Top 100 3PL & Cold Storage Providers
- Ranked #21 of the Top 50 Logistics Companies by Transport Topics, alongside UPS and C.H. Robinson



Public warehousing & cold storage



Port-centric warehousing



Dedicated distribution facilities



Dry warehousing



On-site food processing



Third-party logistics transportation



Supply chain logistics consulting



Manufacturing



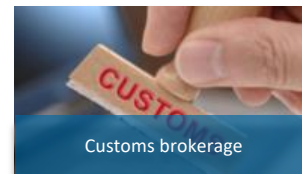
High pressure processing



Re-distribution



Packaging



Customs brokerage

Strategic Locations in Major Markets



Seattle, WA



Kansas City, KS



Chicago, IL



Allentown, PA



Manteca, CA



Santa Maria, CA



Colton, CA



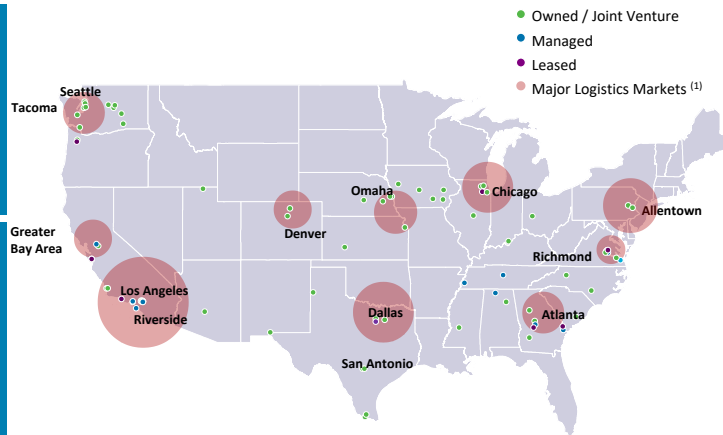
Fort Worth, TX



Atlanta, GA



Charleston, SC



Norfolk, VA



Louisville, KY

Our Customers: Trusted by Leading Companies





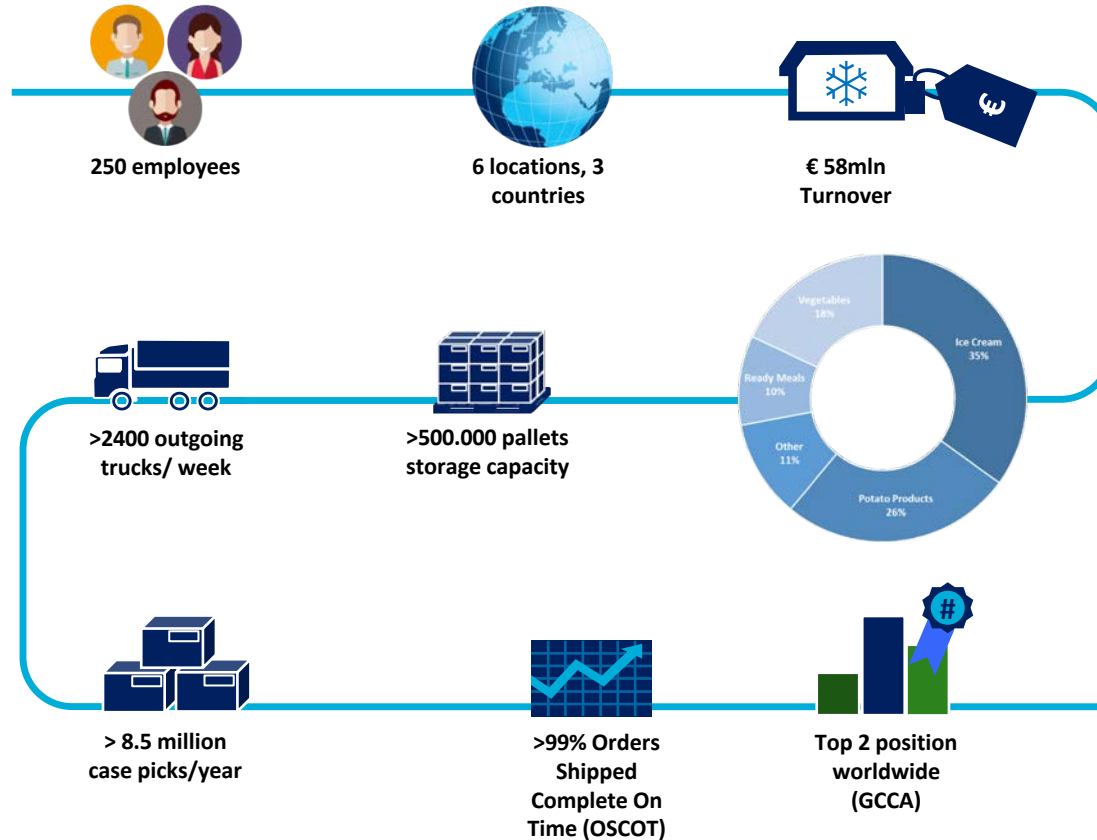
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Introduction to Lineage Europe

Lineage Europe at a Glance

A best-in-class Service Provider and solid Partner for our Customers



Lineage Logistics

Frozen Supply Chain Specialist...

- Logistic supplier with a **dense network** of cold stores
- **State of the art** (automated) warehouses, Developed by **Lineage people**
- **Full supply chain** solutions
- **24/7** operation
- Usage of **standardized processes** and **sophisticated interfacing**
- **Total Customer Care**
- **Customer 360°**
- **Top of the bill** operational performance



Lineage European network

Our warehouses in Europe; ~500,000 pallets storage capacity



Our Customers as Ambassadors

Satisfaction and Retention of customers is key



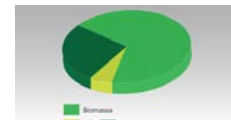
Sustainability

Current sustainability initiatives

- **High density racking & Energy conservation**
*Improving pallets stored per m³; thermal barrier minimizes temperature leak
Our warehouses only use a third of what a conventional warehouse of the same size would use*
- **Double deck trailers @ Wisbech & Gloucester**
Maximize load capacity, reduce road miles and improve supply chain efficiency
- **Nomad Power @ Bergen op Zoom & Ieper**
Using sustainable electricity rather than diesel engines whilst waiting on site
- **LED Lighting @ Gloucester & Wisbech**
Energy efficient LED lighting and sensors (will be rolled out to other sites)
- **Zero waste to landfill @ Bergen op Zoom & Gloucester**
100% recycling of waste, significant reduction of carbon emission
- **Scholt Energy**
Renewable energy sources (biomass, wind, sun): CO₂ emission 0,0 g/kWh



Besparing van 65%
Dit is 162 ton CO₂ per jaar
Deze besparing is equivalent aan de
uitsfoet van 337.000 autokilometers



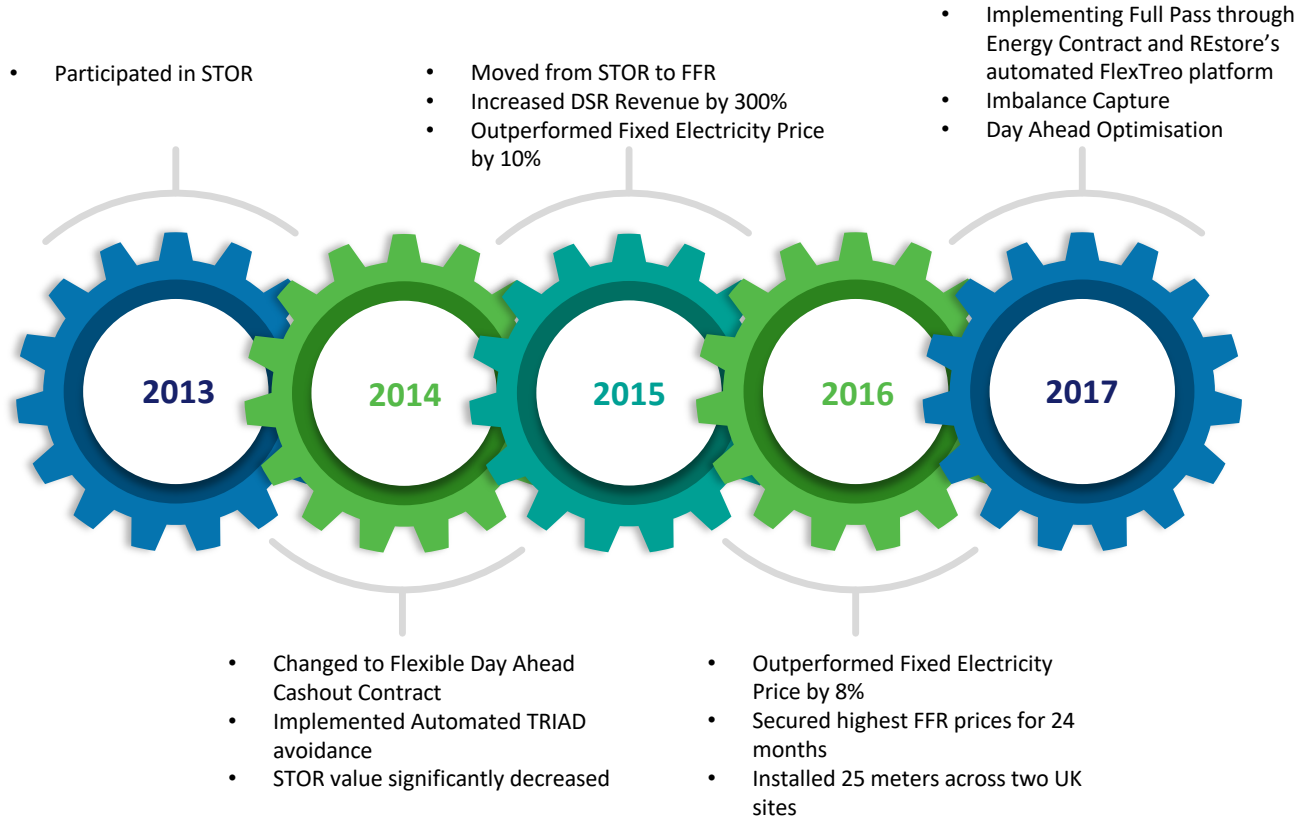


Section



Energy focus Lineage Europe

Our Energy Journey (2013 – 2017)



European Energy Focus

- We want to be a global leader in both the reduction of our energy usage and smart flexible procurement
- We see further benefits from increasing flexibility within our processes and operations
- Our two key markets to develop:
 - United Kingdom (total usage a year: 14,000 mWh)
 - The Netherlands and Belgium (total usage a year: 34,000 mWh)
- We Measure, assess and improve the whole purchasing strategy by regularly reviewing performance
- Maximise value of flexibility through multiple programmes, not just National Grid
e.g. Triads, Day ahead optimisation, Imbalance capture
- Developed key technology partnerships:
- Carefully selected energy supply partners :



The Energy Strategy in Practice 2018

Metering/ Monitoring

- Metering Roll out Complete
- Energy Trend analysis by area
- Linked metering and other sensors to identify trends between variables
 - Temperature, Humidity, Operations etc.
- Identified usage impact per customer:
 - Difference between French fries and ice-cream
 - Identified inbound temperature impacts on consumption
- Energy Price Monitoring tools
 - UK: FlexTreo from Restore

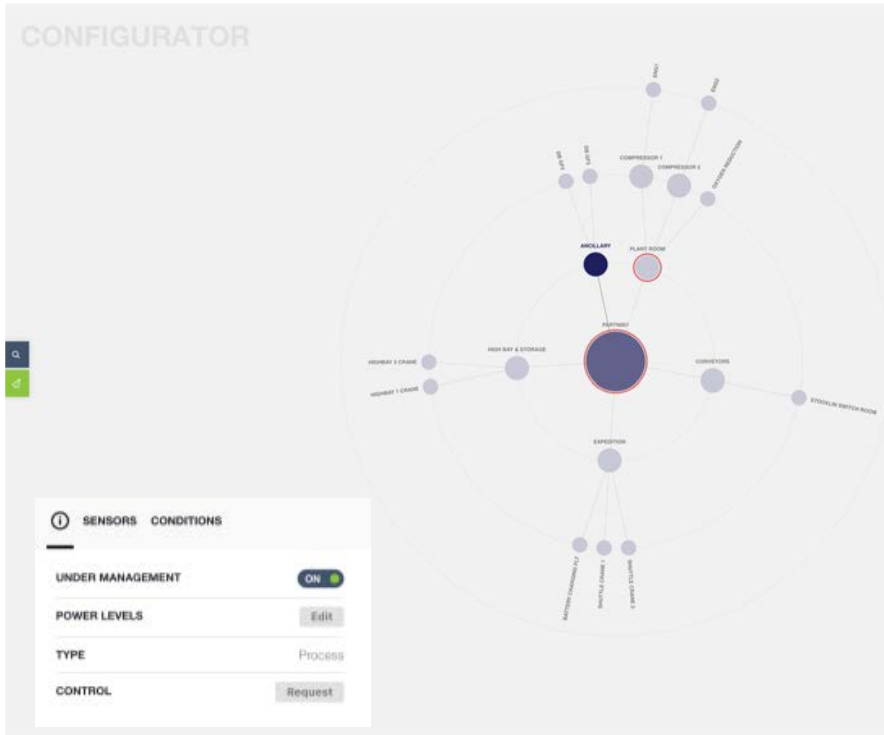
Control

- Prioritize Flexibility in all control projects
- Automated Day Ahead Nominations using FlexTreo
- Automated Imbalance Capture by merit order based on opportunity cost
 - Not all assets respond to every imbalance event, only those that will make a profit
- Active de-risking of energy contract using thermal inertia to avoid high prices.
- Pro-active cooling based on cost in market between industrial boundary conditions.
- Firm Frequency Response and Triad capture using Compressors

Procurement

- Customer agreements about energy procurement, so both parties can benefit
- Maximum fixing to 50%, with some exception in the Netherlands due to customer requests (current negotiated)
- Using applications/algorithms to benefit from market developments, e.g. FlexTreo.
- Benefit from:
 - day-ahead prices
 - Imbalances

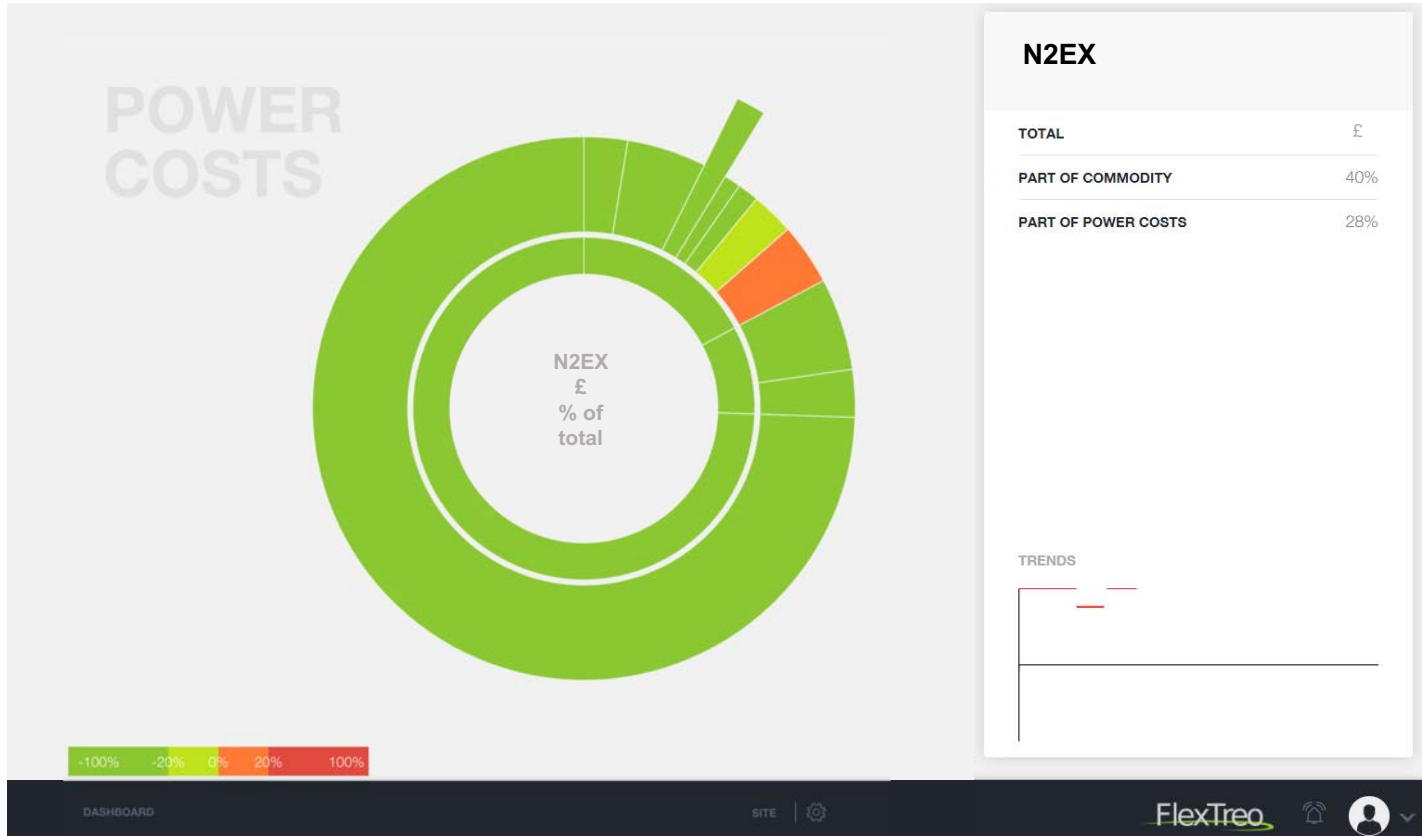
FlexTreo provides deep dive into all our data requirements and enables us to actively manage our process in line with DSM requirements



Site Power and Process Data

- Shows Power Data and Consumption patterns
- Process Sensors are linked
- Industrial Boundary Conditions can be edited such as Temperature, pressure, door movements, run times and scheduled maintenance
- We are able to drill down into specific parts of our process or review energy trends by area and assets
- We can revise the opportunity cost, power delivery, maximum downtime and number of calls when requirements change

We can now Deep Dive into our Power Consumption patterns down to individual charges and performance



FlexTreo provides us with real time data to make key decisions in real time



- FlexTreo automates the trading process for us, providing Day Ahead Nominations and managing responses to Frequency and Imbalance in line with our critical process conditions.
- We provide the highest quality service requirements and FlexTreo optimizes the operation of our plant to minimize energy costs

Energy Strategy Development for the Future

- Integration of GPS Location tracking to inform the energy forecast models in FlexTreo when a delivery will arrive and enabling us to pre-cool
- Integrate Pallet Movement information to forecast door openings, potential thermal losses and associated energy costs
- X-Ray Temperatures of Potato Chips arriving on site to predict “Hot Spots” in the cold store and associated energy costs
 - After blast freezing some pallets arrive looking frozen while still cooking on the inside
- Roof mounted Solar PV – reduce import and improve thermal efficiency.
- Batteries – Could reduce the risk of procurement strategy and enable us to earn more from Demand Response
 - Does the Business case make sense today?
 - Will the market deliver the returns we need?



After the Session

- To discuss what Lineage Logistics are doing in more detail find me during the break or meet at the REstore Stand (BS-24)
- Join a FlexTreo Demo at the REstore Stand (BS-24)
 - 11:30
 - 12:30
 - 13:30

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