

OVERCOMING SUPPLY CHAIN DISRUPTION IN AN EV HGV WORLD

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WHY DO WE NEED JUST-IN-TIME SUPPLY CHAINS?





WHAT HAPPENS WHEN THE SUPPLY CHAIN FALLS APART?

Example: Brexit & the Dover port delays



What happened?

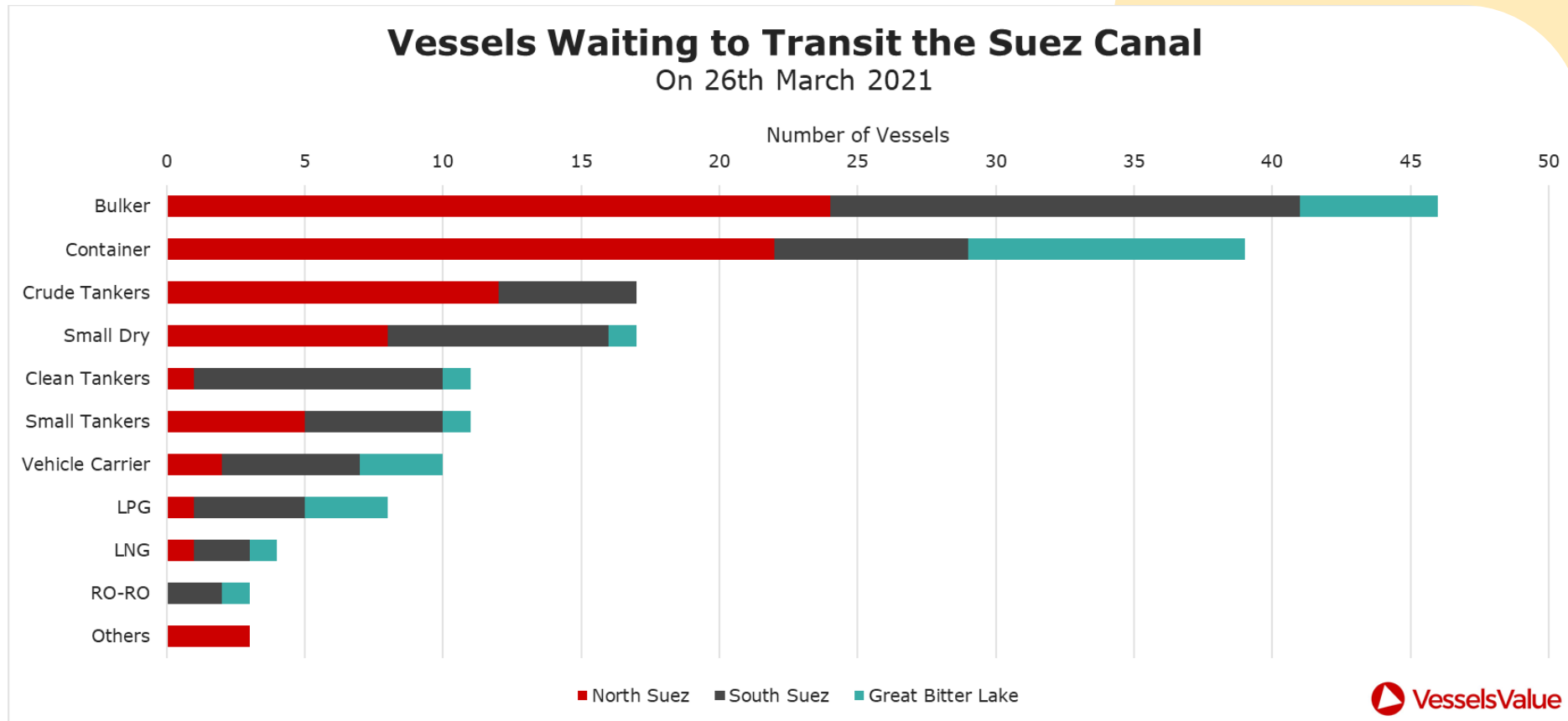
- ☞ New customs checks introduced friction
- ☞ Trucks queued for hours (sometimes days)
- ☞ Just-in-time supply chains broke down

What it caused?

- ☞ Supermarket shortages
- ☞ Manufacturing delays
- ☞ Driver hours wasted

HIGH IMPACT

Example: Evergreen Suez boat stuck



Source: VesselsValue

COVID-19: SYSTEM-WIDE CAPACITY SHOCK

What happened?

- ⌚ Labour shortages + demand spikes
- ⌚ Logistics networks became unpredictable

What it caused?

- ⌚ Supermarket shortages
- ⌚ Manufacturing delays
- ⌚ Driver hours wasted



MACRO-ECONOMIC IMPACT (EUROPE)

In 2021, supply chain disruption cost the eurozone

€112.7 billion
GDP loss

Total disruption impact (COVID + geopolitical shocks)
estimated at up to

€920 billion
GDP loss

BUSINESS-LEVEL IMPACT

Average disruption cost
~\$1.5 million
per day

Automotive sector alone
~\$13 billion
annual losses

Technology sector
~\$16 billion
annual losses



EU RULES ON EV TRUCKS

By 2040, almost every new truck sold will need to be zero-emission.

2025: **15%** emissions

2030: **45%** → EV adoption accelerates

2035: **65%** → EV becomes dominant

2040: **90%** → near full zero-emission market

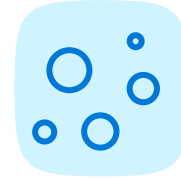
CONSUMER EV REALITY



**Availability is not
guaranteed**



**Power does not match
expectations**



**Fragmented
networks**



**Connector and
compatibility issues**



**Poor site
management**



**Unreliable real-time
information**

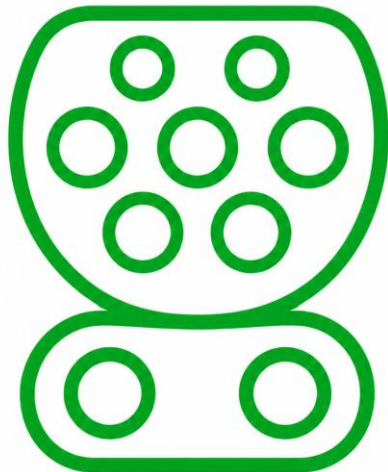
WHO ARE THE KEY TRUCK OEMS?

- ☪ ~150 electric heavy-duty models available in Europe alone
- ☪ Volvo holds **~54% market share of electric heavy trucks in Europe**
- ☪ Electric trucks still <2% of fleet today, but targets push toward:
 - ☪ ~43% by 2030
 - ☪ ~90% by 2040



CHARGING & CONNECTORS

**Current standard – CCS
(Combined Charging System)**



**Next-gen – MCS
(Megawatt Charging System)**



Where are charge ports on trucks?

- ☞ Mostly left or right side of cab (front area)
- ☞ Easy access for depot charging & drive-through charging locations
- ☞ Impacts parking design, bay layout & traffic flow

THE VEHICLES ARE READY
THE SYSTEM AROUND THEM
IS NOT.

YOU CAN'T INSTALL CHARGERS WITHOUT POWER

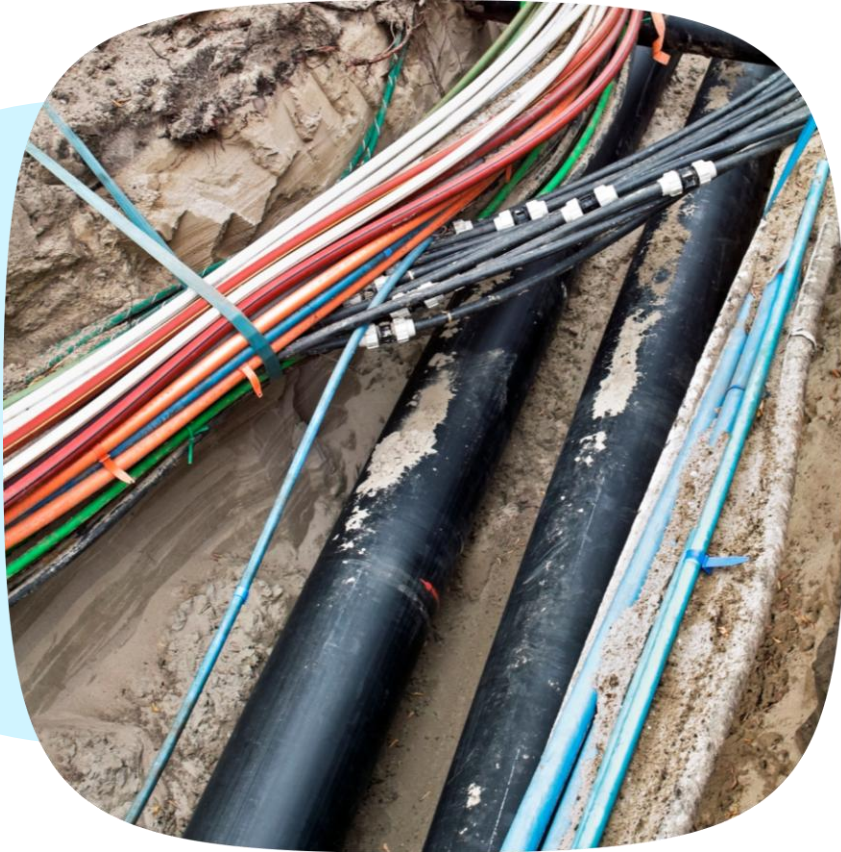
The biggest barrier to EV truck charging isn't the charger – it's the grid behind it.

- ⌚ Legacy infrastructure
- ⌚ Limited grid connection capacity
- ⌚ Long upgrade timelines



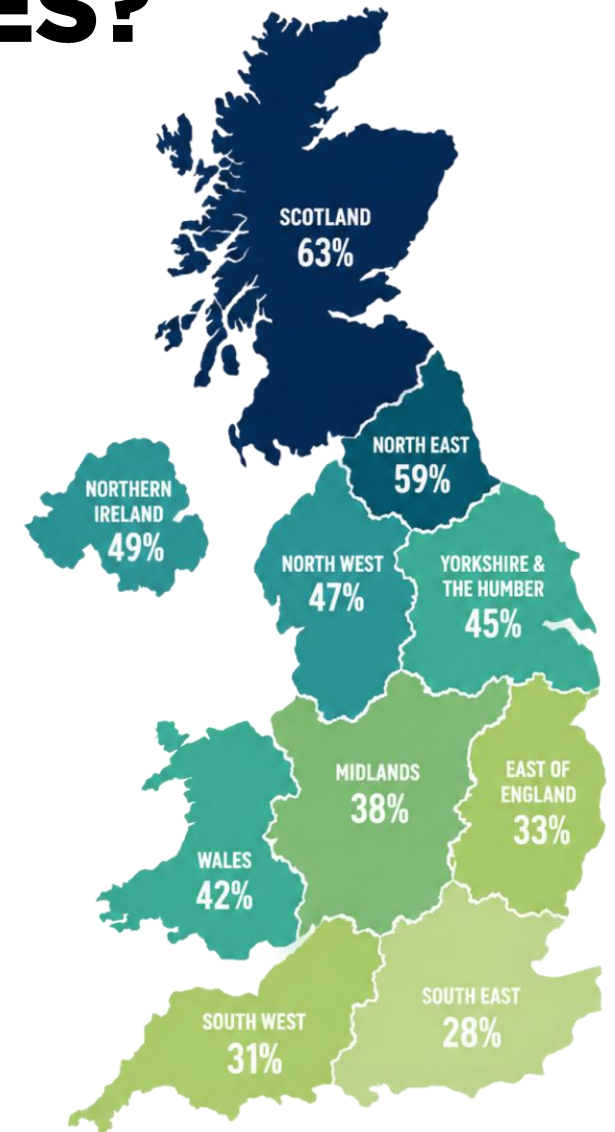
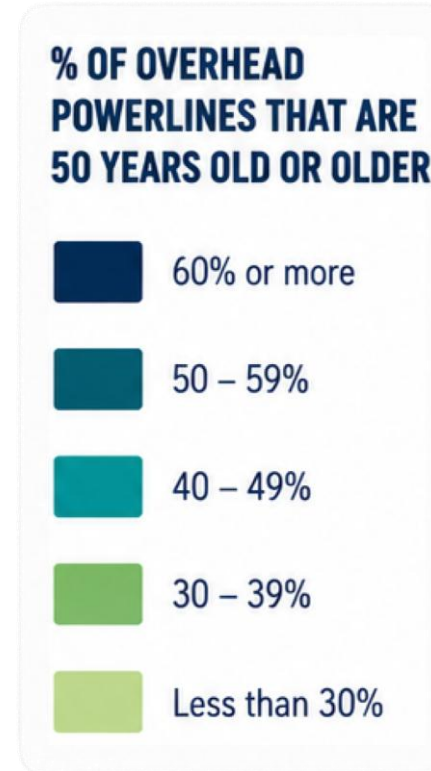
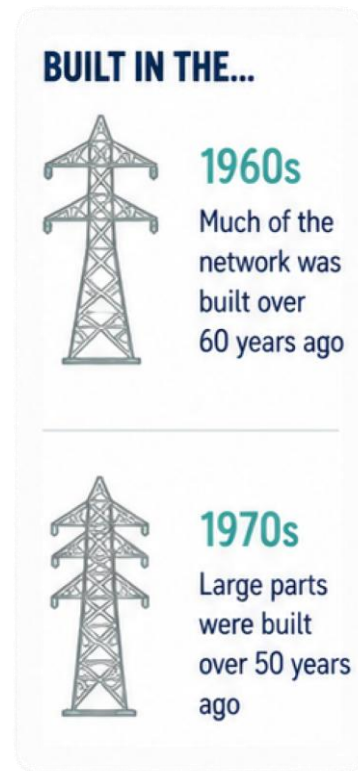
EXAMPLE: UK

Significant constraints in underground distribution networks



- ⌚ Significant constraints in underground distribution networks
- ⌚ Many sites require new cabling & substation upgrades
- ⌚ Delays driven by planning approvals, cost & limited grid capacity

HOW MUCH OF THE UK IS STILL ON VERY OLD POWERLINES?




KEY FACTS ON UK POWER LINES



- ☪ Much of the core transmission infrastructure built in **1950s–1980s**
- ☪ Average age of key assets is over **60 years**
- ☪ Overhead lines and towers typically have a design life of **50–80 years**
- ☪ Europe-wide, ~70% of transmission lines are **>25 years old – the UK situation is similar**

ANNUAL ENERGY NEED

Vehicle Type	Approx. Annual Electricity (TWh)
Cars/taxis	67
Vans	24
Lorries/HGVs	23
Buses	4
Total	118



CHARGING INFRASTRUCTURE WILL INSTANTLY BECOME THE BOTTLENECK

The UK has millions of parking spaces but nowhere near enough chargers for an overnight transition.

Problems would include

- ⌚ queues at rapid chargers
- ⌚ rural charging deserts
- ⌚ apartment residents unable to charge
- ⌚ motorway congestion at service stations

KEY UPGRADE PHASES & COSTS

Period	Focus	Estimated Cost	Timeline for Delivery	Main Purpose
2026–2031	Transmission (RIIO-3)	10.3bn (initial) → £60–70bn total transmission	Major projects 2028–2032	Renewables connection, reliability
To 2030	Grid + networks (NESO)	~£60bn	Accelerated build 2025–2030	Clean Power 2030
2028–2033	Distribution (RIIO-ED3)	Major step-up (exact £ TBC)	Ongoing, urban focus for EVs/heat	Local capacity for electrification
2030s	Transmission continuation	~£58bn	2030–2040	Full net zero scale-up
To 2050	Entire networks (trans + dist)	Hundreds of £bn (part of £1tn+ grid/wind)	Phased through 2040s	Complete decarbonisation & resilience

**NO POWER = NO MOVEMENT =
SUPPLY CHAIN FAILURE**

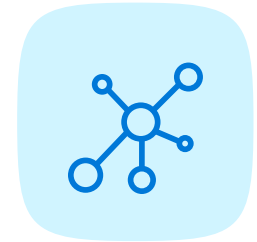
DELAYED DELIVERY WAITING TO HAPPEN



**Immediate impact
(at the truck level)**



**Operational impact
(next stage)**



**Network impact
(system-wide)**

COMMERCIAL IMPACT



- ☁ Penalties for missed delivery windows
- ☁ Higher operating costs
- ☁ Need for additional vehicles and drivers
- ☁ Reduced service reliability

CUSTOMER IMPACT

- ☞ Late or failed deliveries
- ☞ Stock shortages
- ☞ Loss of customer trust



BARRIERS TO DEPOT CHARGING FOR EV TRUCKS IN EUROPE



- ⌚ Severe Grid Capacity Limits
- ⌚ Long Grid Upgrade Timelines
- ⌚ Extremely High Costs
- ⌚ Leased Facilities & Split Incentives
- ⌚ Space & Site Constraints
- ⌚ Regulatory & Operational Complexity

CASE-STUDY: AEGIS ENERGY

30 Next-Generation Multi-Energy Hubs for Heavy Goods Vehicles and Vans in the UK by 2030

- ⌄ Electric charging, HVO, hydrogen, bio-CNG
- ⌄ Bookable charging bays, 24/7 security, driver amenities, fleet card management
- ⌄ £100 million investment secured by Aegis Energy

"We're delighted to be working with the innovative team at Cloudics to deliver the next generation of technology for commercial vehicle fleets."

– Eddie Davidson, Head of Technology at Aegis Energy



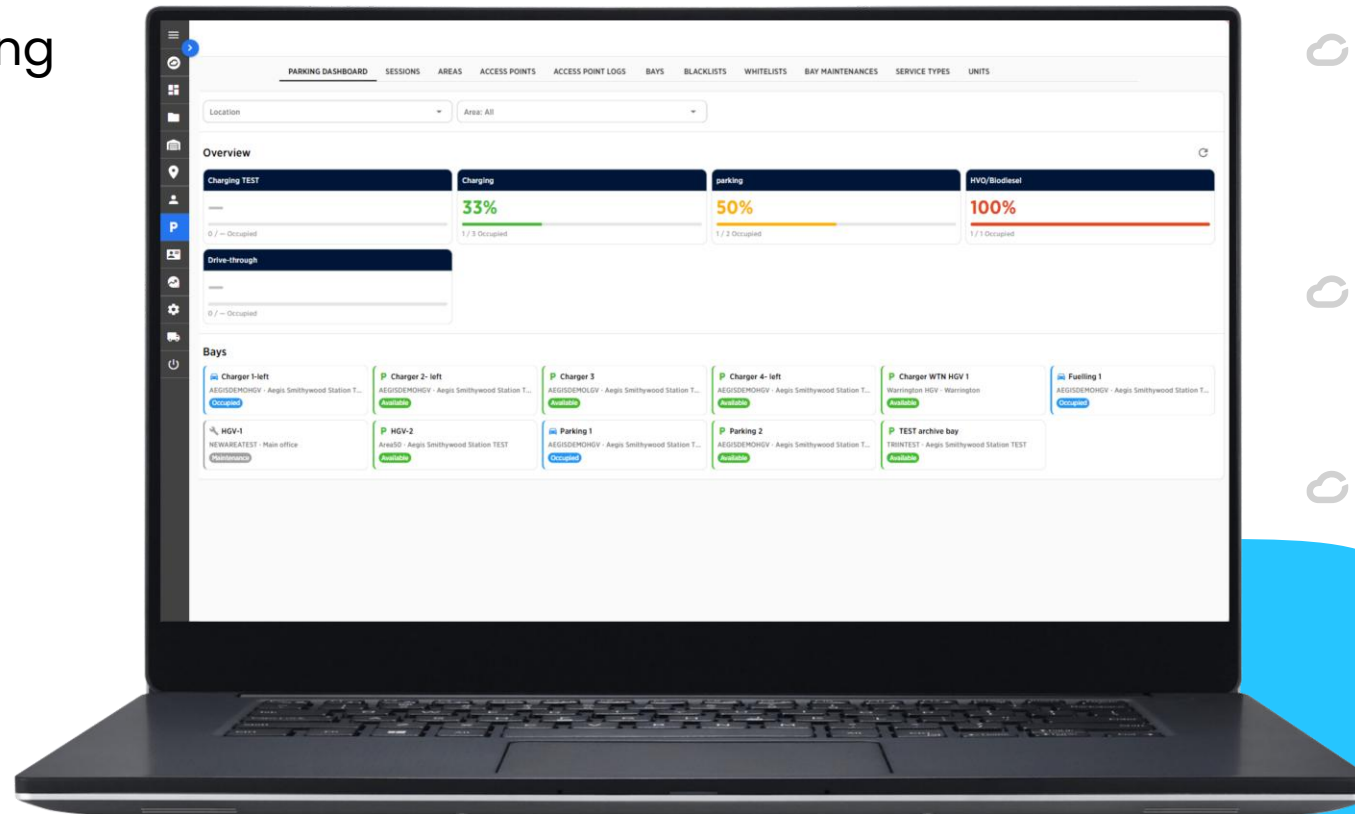
BENEFITS OF PROPER EV TRUCK PARKING MANAGEMENT SYSTEMS

☁ Maximises Charging Efficiency

☁ Minimises Downtime

☁ Optimises Yard Space & Flow

☁ Protects Grid & Reduces Costs



☁ Enables Scalable Electrification

☁ Boosts Supply Chain Reliability

☁ Lowers TCO

THANK YOU!



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