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A Customer Perspective
CASE STUDY

DRAX POWER BIOMASS PROJECT
Drax Power

• Owns and operates the largest UK power station
• Near Selby in North Yorkshire
• Completed in 1974/86 as a coal fired station
• 4000 MW capacity
• Supplies 7-8% of UK electricity
• Major £700m+ conversion project to 50% biomass firing is underway
  • A robust and dependable fuel supply chain is crucial
• The new wagons are integral to the project
What is Drax biomass?

• Wood pellets
Why design a specialist wagon?

- Biomass pellets must be kept dry
  Coal wagons can be fitted with top doors

But ..... 

- Biomass is considerably less dense than coal
State of the art now
State of the art now

- 16-1700 tonne payload capacity per 25 wagon train
- 75MPH tare & 60mph laden
- Loading and unloading with train in motion
- Automatic top and bottom door operation
- 3CR12 stainless steel bodies
- High wagon availability, utilisation and reliability
- Low maintenance requirement
- Designed and built in the UK
Increasing the capacity

116 m$^3$
Almost 30% increase in volume
Fitting the loading gauge
Precision manufacture
Going faster
Door operation

Magnetic sensor
Moving with the times.......
State of the art 70 years ago
State of the art 60 years ago
State of the art in 1965
State of the art in 2025?
Some ideas

• How can we increase average speeds? ......
  It takes over 4 hours to get from Hull to Drax
  The average speed of freight trains is said to be 25 mph

• How can we operate at 75MPH in laden as well as tare?

• How can we reduce the time taken to agree new train paths?

• How can we simplify the mandatory approvals processes? ......
  TSI’s, NoBos, DeBos, AsBos, CSMs, ORR Authorisation, Route compatability
  Drax wagons had to be transported by road to Eastern Europe for noise testing
  Drax wagons have had to have continental lamp brackets fitted!
• Can we further reduce costs?

• Can we increase the GB loading gauge?

• Can we increase permitted axle loads?

• Can we increase train lengths?

• Can we further improve reliability and resilience?
• What are we going to do about Demon Diesel and Expanding Electrification?

• How can we maximise on the benefits of the Digital Railway?

• AVI? (Automatic Vehicle Identification)

• Electric braking?

• How will we respond to the introduction of self-drive autonomous road vehicles?
THANK YOU