

## Case Study

# Range Energy powers sustainable trucking through seamless data streaming with Redpanda

<30

minutes to a complete  
implementation

10GB

per trailer  
ingested daily

“ I knew that I didn’t have a team to dedicate to supporting Java-based applications, so I looked for alternatives, and I’m glad I did. Redpanda BYOC was exactly what I was looking for.”

– Head of Information Technology, Range Energy



Range Energy eases the heavy-duty trucking industry's transition to electric with trailer retrofit technologies that improve fleet performance and sustainability.

# Industry  
Manufacturing & Supply Chain

⊕ Company Size  
40 employees

## Highlights

### Challenges

- Inefficient manual data collection
- Not enough resources to manage an in-house solution
- Difficulty balancing scalability and costs

### Why Redpanda

- The managed solution lowers administrative effort
- Compatibility with AWS and existing infrastructure
- Deep knowledge and expertise to support a small IT team

### Results

- Robust, scalable data streaming
- Increased IT resources for projects that boost business growth
- Developed new, real-time use cases at low cost

## Challenges

### Scaling data streaming while staying nimble

Range Energy exists to make heavy-duty trucking safer, cleaner, and more efficient. Its electric trailer powertrain system — combining a high-voltage battery, electrified axle, and advanced sensor suite — provides a simple, practical solution for trucking companies to retrofit their fleets. Turning big-rig diesel trucks into hybrids saves up to 50% on fuel while increasing MPG by 67%.

Optimizing every custom retrofit for maximum efficiency requires a constant stream of real-time data from the system's telematics unit. After receiving data on tire pressure, speed, voltage, torque, and battery regeneration, Range Energy needs to store, process, and enrich the data for downstream systems. It's a big task, since customers' trailers typically cover 200 miles daily, and Range Energy aims to ingest at least 10 GB per asset each day.

Unfortunately, the company's existing data collection process wasn't up to the task. It was manual and inefficient, and had become a bottleneck for the business. Apart from managing telematics data, Range Energy's three-person IT team is involved in most business functions, including designing supply chains, enabling manufacturing processes, and ensuring corporate IT functions run smoothly. They knew they needed to improve their data streaming capabilities, but were limited in what they could support.

Range Energy's Head of IT set out to find a better way to simultaneously process many high-resolution signals from multiple trailers. They came across widely used solutions like Kafka and Confluent Cloud, which wouldn't work for their team.

`"My experience is that most Java-based solutions are quite fickle and take considerable time and effort to build out properly. I needed to do this with one person, not seven."`

## Why they chose Redpanda

# A managed solution that offers high performance, not high costs

Range Energy didn't have the in-house expertise, let alone the headcount, to manage a legacy solution. They needed another option, one that offered easy, cost-effective scalability.

They found what they wanted in [Redpanda's Bring-your-own-cloud \(BYOC\)](#), a fully managed solution that would remove the management burden from the IT team.

`"I was looking for a highly available solution that could run in the cloud with little to no care and feeding. When I found out Redpanda was just three executables, I knew I had found a winner."`

Being cloud-based meant the IT team wouldn't have to care for hardware, and the company's telematics data pipeline could grow naturally within its existing AWS environment.

"Our main goal was to have a robust solution to receive, enrich, and shape the data that didn't require a lot of overhead or cost. Redpanda BYOC absolutely met our requirements."

Redpanda paired the Range Energy team with a solution engineer, who had a POC up and running within 10 minutes. The user interface made it easy for Range Energy's team to stay in control of elements like topics, schemas, and data sinks. Demonstrating the value of Redpanda within their existing environment helped the Head of IT convince the rest of the Range Energy leadership team that it was the way to go — and it worked.

Completing the implementation took hardly any additional time. Redpanda worked with the team to securely deploy the cluster within Range Energy's cloud environment in AWS, and the solution was up and running within a 30-minute meeting.

"It was pretty amazing," the Head of IT says.

## Results

# Freeing resources to build a stronger business

Considering legacy solutions forced the Head of IT to consider the impossibility of hiring staff just to manage the data stream. Instead, Range Energy now dedicates minimal human resources to the task.

`"The amount of time and people Redpanda BYOC freed up should not be understated. The biggest benefit was being able to implement something this robust with a quarter of a person."`

With Redpanda BYOC delivering large volumes of real-time data, Range Energy can now power multiple downstream use cases, such as:

- Analyzing telematics data to monitor trailer performance
- Driving product development, leveraging data science and machine learning
- Fleet tracking and optimizing routes through mapping and geospatial data analysis
- Using data dashboards for logistics optimization and predictive maintenance

The Redpanda team manages larger projects like upgrades and security, leaving the IT team with no infrastructure to worry about. Meanwhile, Redpanda BYOC delivers all the capabilities and performance Range Energy needs to stream and process 10 GB of daily telematic data from each trailer – with room to grow. When IT staff does step into the data stream, it's to extract more value. Even then, automations make surfacing insights much easier than manually sifting through data.

“Having those extra people involved supplements our small team, which is super helpful. The Redpanda team knows their technology and how to make it work for my business, so I really enjoy working with them.”

With seamless technology, continuous feature releases, and knowledgeable, friendly, and responsive support, the Range Energy can maximize their team's efforts. Now that they're free from manual data collection, they can dedicate their talents to powering the work that will take trucking into an electrified future.

“Enabling us to scale without worry is a huge feature for us. Having no on-prem resources, we know we can scale in AWS, and Redpanda will keep up.”

– Head of Information Technology, Range Energy

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