

# Lee Gantt

Duke Energy — Contributions Summary

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## Project & Initiative Contributions

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### **Analytics Platform — eTransEnergy (AWS)**

Architected and managed development of a cloud-native analytics platform for eTransEnergy (Duke's non-regulated subsidiary) in AWS. Technologies included S3, Glacier, Lambda, Lake Formation, Terraform, Aurora Serverless, and Power BI. Led cross-functional team through full delivery lifecycle.

### **Fleet Electrification — Grid Impact Analysis**

Designed a SQL Server database and ETL pipeline to house grid models and vehicle telematics data supporting Duke's Fleet Electrification goals. Loaded and analyzed telematics data and authored a whitepaper on EV charging optimization best practices.

### **Fleet Conversion Calculator**

Led development of an Angular-based fleet conversion calculator hosted on the Duke Energy public website. The tool assists fleet managers with cost estimation and carbon emission reduction analysis for conversion to Battery Electric Vehicles (BEVs).

### **Carbon Emissions Tool — Large Account Managers**

Led development and maintenance of an interactive carbon emissions tool enabling Duke's large account managers to help customers estimate their carbon footprint and model the impact of Duke's emissions reduction programs.

### **EV Charging Signal Disaggregation (ML)**

Led a team of data scientists and engineers to perform signal disaggregation on raw residential meter readings to detect EV charging behavior. Evolved the solution from heuristic detection methods to a more accurate ML model. Provided hands-on data engineering support using SQL Server, AWS Aurora PostgreSQL, and Athena.

### **Charge Management System (CMS) — Optimist Hall**

Led a team building a proprietary Charge Management System for the Duke employee EV charging array at Optimist Hall in Charlotte. Oversaw OCPP charger management customization, conducted L2 charger market research, and coordinated cybersecurity penetration testing and Third Party Risk Assessment (TPRA). Integrated Duke's Demand Response system to curtail charging during peak demand.

### **OpenADR — Residential EV Charging Demand Response**

Assisted in the design and monitoring of a residential EV charging demand response pilot program involving three OEMs. Worked with the IoT team to deliver OpenADR demand response signals through a third-party provider, and assisted in analysis and regulatory reporting of pilot outcomes to North Carolina regulators.

### **NovaCharge L2 / DCFC Troubleshooting (Florida)**

Investigated OCPP connectivity issues taking a network of L2 and DCFC chargers offline in Florida. Coordinated resolution with charger vendor, CMS cloud provider, and Duke personnel. Identified and escalated security vulnerabilities for Cyber team remediation and worked with Duke legal to determine appropriate device disposition.

### **Itron Demand Response Controller**

Contributed design criteria and implementation oversight for a next-generation power management device developed by Itron. The device responds to demand response signals to curtail behind-the-meter loads such as HVAC, pool pumps, and EV charging during peak demand periods.

### **NextGen Grid — Design Thinking**

Participated in Design Thinking sessions to envision the future of Duke's power grid — from transmission to the meter. Collaborated with Cyber, Telecom, Generation, Metering, and IoT teams to develop recommendations for a future grid incorporating hybrid generation, Home-to-Grid, Vehicle-to-Grid, and distributed intelligence.

### **EV Charging Depot — Design Thinking (Fleet)**

Participated in Design Thinking sessions with the Fleet Electrification team to define requirements for a custom CMS enabling operation center managers and vehicle drivers to optimize depot EV charging schedules.

## **Hands-On Technical Experience**

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- Database Modeling and Design
- MS SQL Server (SSMS, SSIS)
- PostgreSQL (AWS Aurora)
- Teradata SQL
- AWS Athena
- AWS EC2, RDS, S3, Glacier, Route 53, Security Groups, NACLs, Cost Management
- JIRA (Kanban, Agile Sprint) – Conduct Ceremonies, Manage Board
- Miro
- MS Office Tools (Teams, Office, Excel, Word, etc.)
- Project Budget Management
- Claude, Claude Projects, Claude Agents, OpenAI ChatGPT, Gemini