C3.ai

Enterprise AI for Energy Management

Optimizing Energy Consumption of Large Public Facilities

A global energy company partnered with C3 AI® to fuel its AI-led digital transformation strategy. As part of the broader program, the company deployed C3 AI Energy Management in a major European market to enable large municipal and commercial customers to analyze energy consumption and reduce energy expenditure. Using development tooling and services available on the C3 AI Platform, the company configured C3 AI Energy Management with custom analytics, data integrations, and complex asset hierarchies for their customers.

C3 AI and the global energy company partnered over the course of 16 weeks to configure C3 AI Energy Management across more than 600 public facilities, in response to a business need identified by the local energy markets regulator. In the next phase, the company is expanding C3 AI Energy Management to thousands of facilities to benefit cities and other public customers.

Project Scope

- 600+ facilities
- 140 key performance indicators
- 2,000 IoT devices providing streaming data
- 13 unique source systems

About The Company

- 110+ GW of power production capacity
- €50B+ annual revenue
- 150,000+ employees globally
- Top global power producer
- Active in 70+ countries

Corporate Partnership

70+

trained resources on C3 AI Platform

20M+

facilities analyzed by C3 AI Energy Management across residential, SMB, and enterprise

4M+

sensors from 19 countries feeding data to C3 AI Platform for AI use cases
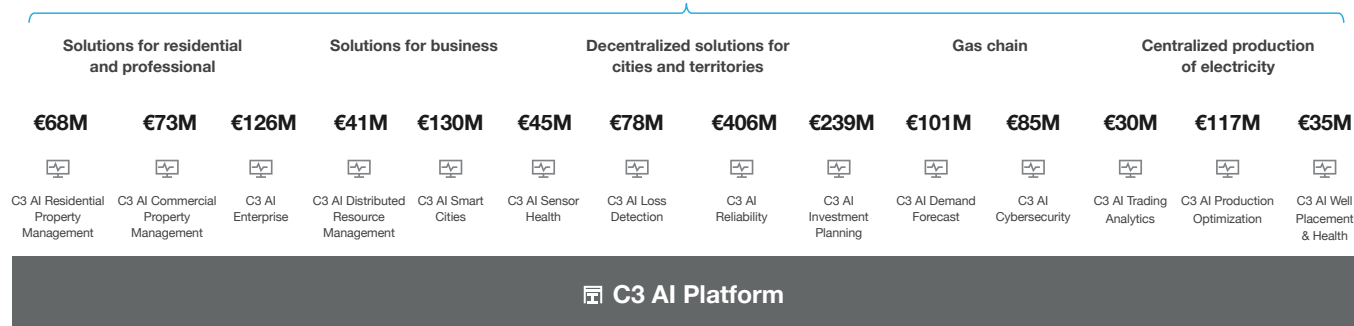
10+

C3 AI Applications in production or under development

Across All Lines of Business, the Global Energy Company Can Achieve €1.5 Billion per Year in Economic Benefit from C3 AI Applications and the C3 AI Platform
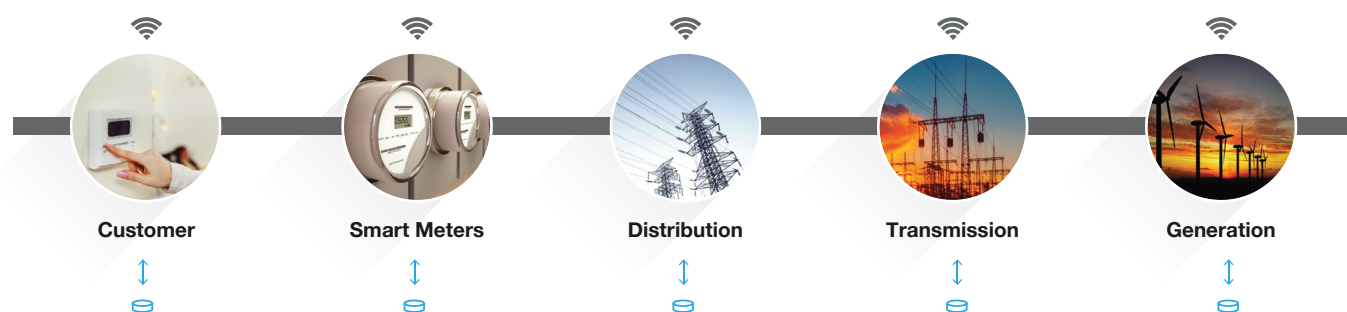
The global energy company is a top electricity and efficiency services provider in the world. It also maintains a large distribution network and provides an impressive amount of green electricity to customers. The company's revenue in 2018 was €60 billion, and it has 150,000+ employees in 70 countries.

In 2016, the global energy company selected C3 AI as the AI platform to enable its three-year digital transformation strategy. The company uses the C3 AI Platform to integrate data, develop, deploy, and manage applications (including C3 AI Energy Management) across 24 business units to solve critical use cases.

5 Lines of Business

Solutions for residential and professional			Solutions for business			Decentralized solutions for cities and territories			Gas chain		Centralized production of electricity		
€68M	€73M	€126M	€41M	€130M	€45M	€78M	€406M	€239M	€101M	€85M	€30M	€117M	€35M
C3 AI Residential Property Management	C3 AI Commercial Property Management	C3 AI Enterprise	C3 AI Distributed Resource Management	C3 AI Smart Cities	C3 AI Sensor Health	C3 AI Loss Detection	C3 AI Reliability	C3 AI Investment Planning	C3 AI Demand Forecast	C3 AI Cybersecurity	C3 AI Trading Analytics	C3 AI Production Optimization	C3 AI Well Placement & Health

⊞ C3 AI Platform

Customer — **Smart Meters** — **Distribution** — **Transmission** — **Generation**

The Challenge: Differentiate Energy Services Offering with a Configurable and Scalable AI Energy Management Platform

For large public entities such as cities, the company provides energy services, including billing management and energy efficiency. The global energy company deployed C3 AI Energy Management to deliver greater energy savings for their customers.

In addition to granular analysis of energy data, the application had specific requirements for sensor integration, customization, security, and scalability. These requirements could only be met by C3 AI Energy Management:

- Real-time integration of streaming data from Sigfox devices and BMS systems

- High PSR (performance, scalability and reliability) requirements for data ingestion and availability

- Modeling and seamless KPI aggregation of multi-level asset hierarchy from organization down to individual room sensors

- Translatable user interface for two languages

- Development of advanced analytical models for contractual measurement and verification requirements

- Customizable user interface with different dashboards and data for different customers

- Complex security requirements to control multi-level access for different types of users (e.g., third-party service providers, internal analysts) at the page, feature, and data level

A Global Energy and Sustainability Management Solution

C3 AI Energy Management enables the company's energy managers and their customers' facility operators to use AI to analyze energy data, identify cost savings and performance improvement opportunities, manage contractual obligations such as comfort, and proactively take action to implement measures and verify benefits.

Project Objectives

- Differentiated service offering with a configurable and feature-rich technology solution

- Rapid deployment to meet customer deadlines

- Scalable energy management platform to expand business to new customers in a major European market and to other business units across the global energy company

Project Highlights and Results

- Deployed the solution to 600+ facilities in 16 weeks, on time and to specification

- 600+ public facilities in major European market

- Achieved 50% additional savings (compared to alternative solutions)

- Identification of up to 10x energy reductions for worst performing facilities

- Modeled and analyzed a multi-layered hierarchy ranging from city aggregation down to individual building asset sensors

Benefits

- Additional revenue from new products and services

- Increased customer retention

- Improved customer satisfaction

- Reduced cost of energy efficiency obligation

- Delivered a strong strategic advantage as evidenced by recognition from a key European city

- Configured data integrations on the C3 AI Platform, including custom temperature and billing feeds built by the company and connections to BMS systems providing measurements such as fan coil speed and HVAC status every 15 minutes

- Configured 140 analytics for energy data such as thermal heating consumption and energy efficiency KPIs

- Provided a scalable and differentiating platform that is being expanded to new customers

Solution Architecture
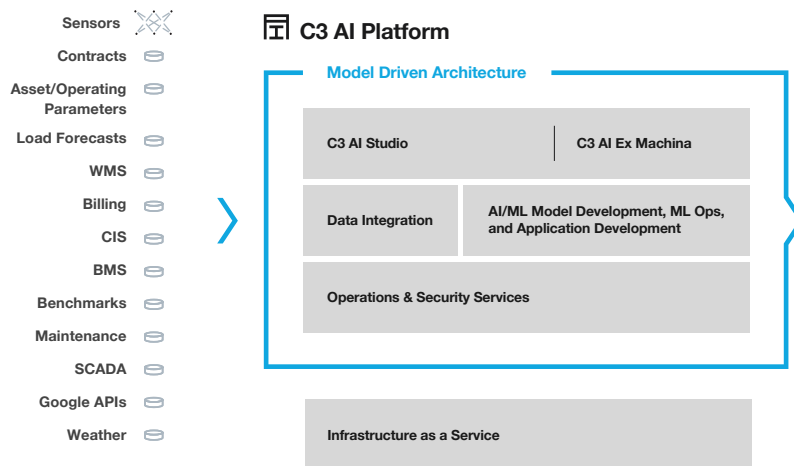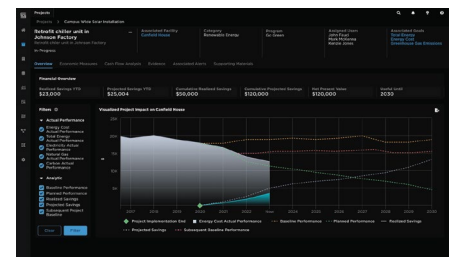
Phased Approach to Continually Enhance Solution with Joint Teams in 3 Global Cities

The approach for Energy Management was to assemble a team of joint C3 AI and company resources and use agile best practices to specify, prioritize, develop, and deploy product enhancements through project phases.

Phase 1 consisted of implementing the out-of-the-box C3 AI Energy Management application across 35 facilities, while training corporate technical resources to be autonomous on the C3 AI Platform.

Phase 2 expanded the solution to meet end customer requirements:

- The scope was expanded to 600+ facilities
- The UI was customized to accommodate customer requirements and specific organization arrangements
- The team built integrations and analytics for streaming data from Sigfox devices, BMS, and AWS IoT
- Additional technical resources were trained

With **Phase 3**, the global energy company is planning on implementing machine learning features that will enable closed loop control over temperature and humidity in real time.

Application navigation

Menu of available applications

Organization energy consumption and spending against goal

Map of facilities and normalized energy use intensity

Savings from sustainability projects by facility

Organization filter

Progress against organization water and waste goals

Alerts and risks that need to be actioned

Energy disaggregation by source

Proven Results in 8-12 Weeks | **Visit c3.ai/get-started**