



Fuel Poverty & Energy Analytics Platform

Service Definition Document

G-Cloud 15 Framework

January 2026



UrbanTide Limited

Registered Office: 71-75 Shelton Street, Covent Garden, London WC2H 9JQ
Head Office: Bayes Centre, University of Edinburgh, 47 Potterrow, Edinburgh EH8 9BT
Company Registration: 9222463
www.urbantide.com

Contents

1. Service Overview
2. Key Features and Capabilities
3. Data Sources and Integration
4. Fuel Poverty Analytics
5. User Roles and Access Control
6. Technical Requirements
7. Service Levels and Availability
8. Backup, Disaster Recovery and Business Continuity
9. Hosting and Data Location
10. Security
11. Onboarding and Training
12. Support and Maintenance
13. Data Export and Exit Arrangements
14. Certifications and Compliance
15. Other Procurement Options
16. Contact Information

1. Service Overview

1.1 What is uZero?

uZero is a data and analytics platform that helps organisations map, identify, and predict fuel poverty.

By combining anonymised smart meter data with building, energy efficiency, and socioeconomic datasets, uZero uses machine learning to identify households and areas most vulnerable to fuel poverty, including "hidden pockets" of vulnerability that traditional approaches miss.

uZero enables organisations to:

- Identify fuel-poor households and areas earlier, before crisis point
- Target energy efficiency support more precisely
- Support the delivery of home comfort and livability improvements
- Reduce energy consumption and carbon emissions

1.2 Who is uZero for?

uZero is designed for organisations involved in fuel poverty mitigation, energy efficiency delivery, carbon reduction programmes, and social support or vulnerability identification.

This includes energy suppliers, distribution network operators, local authorities, housing associations, and policy teams.

1.3 Core capabilities

Fuel poverty identification – Machine learning analysis combining smart meter data, building and energy efficiency data, and socioeconomic indicators to identify fuel-poor areas and households

Household-level targeting – Granular insights at individual property level, including estimated income bands, EPC ratings (actual and predicted), and scheme eligibility

Intervention planning – Data-driven recommendations to support efficient deployment of energy efficiency measures and cost-of-living support

Impact measurement – Track changes in fuel poverty scores over time to assess programme effectiveness and demonstrate outcomes

1.4 About UrbanTide

UrbanTide was formed from the team that bid, planned and delivered Innovate UK's £24m future cities demonstrator for Glasgow. We implemented the £7.2m OPEN Glasgow programme that explored the value of new technologies, opened up city data, and created engaging solutions for a range of urban challenges.

As winners of the UKRI's Modernising Energy Data Access (MEDA) competition, UrbanTide is playing a key role in the drive to tackle fuel poverty in the UK. The uZero MEDA consortium is a unique multidisciplinary team of energy and data experts with world-leading capability, including partnerships with the Data Communications Company, UCL Smart Energy Research Lab, Greater South East Energy Hub, Connected Places Catapult, and Scottish and Southern Energy Networks.

UrbanTide Limited has over a decade of experience delivering data management and analytics solutions to public sector organisations.

1.5 Target Users

uZero is designed for organisations involved in fuel poverty mitigation, energy efficiency delivery, carbon reduction programmes, and social support or vulnerability identification. This includes:

- Local authorities and combined authorities
- Energy suppliers and distribution network operators
- Housing associations and registered social landlords
- Energy efficiency scheme administrators (HUG, LARS, WHP)
- Net zero and sustainability teams
- Policy teams and research organisations

1.6 Why uZero Matters

Fuel poverty is one of Britain's most pressing social challenges. An estimated 6.3 million households in England currently live in fuel poverty, with numbers rising due to the cost of living crisis. Despite billions in annual spending on fuel poverty programmes, support often fails to reach the households that need it most.

The ability to effectively target energy efficiency measures where they are most needed is the key to tackling fuel poverty. uZero enables accurate targeting—delivering higher impact at lower cost while improving household wellbeing. Organisations using uZero have achieved significantly higher referral and conversion rates than traditional targeting methods.

1.7 Proven Track Record

uZero is trusted by organisations across the energy and public sectors, including:

- **Energy Networks:** UK Power Networks, Scottish and Southern Energy Networks
- **Energy Hubs:** Greater South East Net Zero Hub, Energy Systems Catapult
- **Local Government:** Dartford Borough Council, Dover District Council
- **Research:** University of Edinburgh, UCL, Connected Places Catapult

2. Key Features and Capabilities

2.1 Fuel Poverty Area Mapping

View locally mapped fuel poverty data on vector or satellite maps with a detailed data dashboard. uZero presents probability results in an easy-view heatmap to help organisations identify areas at higher risk of fuel poverty. Areas are mapped at Output Area level (covering approximately 80-125 households), providing granular targeting while maintaining data privacy.

- Identify areas in or at risk of falling into fuel poverty
- Discover "hidden pockets" of fuel poverty that traditional methods miss
- Prioritise delivery areas for maximum efficiency
- Compare fuel poverty indicators across local authorities and regions

2.2 Household-Level Analysis

View individual household data, including estimated income levels, scheme eligibility, and EPC ratings. uZero includes both actual EPC data and virtual EPC predictions based on property characteristics. This data can be overlaid with deprivation indicators to identify which households are most appropriate for targeting.

- Make active targeting more efficient and early intervention more effective
- Improve the uptake of efficiency schemes amongst fuel-poor households
- Identify automatic eligibility for specific schemes (e.g., HUG2, LARS)
- Support lower energy bills and improved comfort and well-being

2.3 Data Filtering and Integration

Users can layer and filter local data across selected areas, creating custom views tailored to specific programme requirements. Export custom layers with raw data downloads and APIs for integration with third-party systems.

- Layer multiple datasets to create composite views
- Filter by geographic area, fuel poverty score, EPC band, or deprivation decile
- Export filtered data in standard formats (CSV, JSON, GeoJSON)
- API access for programmatic integration with CRM, GIS, and other systems

2.4 Combined Fuel Poverty Scoring

uZero's proprietary Combined Fuel Poverty Score integrates multiple data sources using machine learning to provide a single, actionable indicator of fuel poverty risk. The score is calculated at the Output Area level and the score incorporates: smart meter usage patterns, energy efficiency gap analysis, prepayment meter prevalence, Universal Credit uptake, and Index of Multiple Deprivation indicators.

2.5 Impact Measurement

Track changes in fuel poverty indicators over time to assess programme effectiveness and demonstrate outcomes. uZero enables organisations to measure the impact of targeted interventions and report on progress towards fuel poverty and carbon reduction targets.

3. Data Sources and Integration

3.1 Smart Meter System Data

uZero integrates aggregated and anonymised smart meter data from the Data Communications Company (DCC), covering over 30 million smart meters across Great Britain. This data is processed through uZero's AI models to identify usage patterns indicative of fuel poverty.

- Prepayment meter prevalence and distribution
- Usage patterns for gas and electricity
- Fuel poverty cluster identification through machine learning and AI technologies
- Aggregated at the Output Area level to maintain privacy

3.2 Energy Performance Certificates

Comprehensive EPC data for all domestic properties, including current and potential energy efficiency ratings, property characteristics, and recommended improvements.

- Current and potential energy efficiency scores
- Energy efficiency gap analysis
- Percentage of properties with poor EPC ratings (Band D or below)
- Virtual EPC predictions for properties without certificates

3.3 Socioeconomic Data

uZero integrates a range of socioeconomic indicators to provide context for fuel poverty analysis:

- **Universal Credit:** Household counts and percentages at LSOA level
- **Index of Multiple Deprivation:** Overall deprivation scores, ranks, and deciles
- **Census Data:** Household counts and demographic characteristics
- **DESNZ Fuel Poverty Estimates:** Official fuel poverty statistics for comparison

3.4 Additional Datasets

- Off-gas grid household estimates
- Property wall type and construction characteristics
- Geographic boundaries (Output Areas, LSOAs, Local Authorities, Regions)
- Scheme eligibility criteria (HUG2, LARS, ECO, WHP)

3.5 Data Refresh

Data is refreshed on a regular basis to ensure currency. Smart meter data is updated quarterly, while supporting datasets (EPC, Universal Credit, IMD) are updated as new releases become available, typically quarterly or annually, depending on the source.

4. Fuel Poverty Analytics

4.1 AI and Machine Learning

uZero applies advanced AI and machine learning techniques to smart meter and cross-sector data to identify fuel poverty patterns that would be invisible to traditional analysis. Our models are trained on billions of data points to recognise usage signatures associated with fuel poverty.

- Clustering algorithms identify fuel-poor usage patterns
- Predictive models estimate fuel poverty risk for areas without full data coverage
- Feature engineering combines multiple data sources for improved accuracy
- Models are regularly retrained as new data becomes available

4.2 Combined Fuel Poverty Score Methodology

The Combined Fuel Poverty Score is calculated as a weighted combination of normalised indicators including:

- Percentage of households on Universal Credit
- Mean energy efficiency gap (difference between current and potential EPC)
- Percentage of fuel-poor devices identified from smart meter clustering (gas)
- Percentage of fuel-poor devices identified from smart meter clustering (electricity)

4.3 Custom Analysis

UrbanTide can develop custom AI analysis for specific funded schemes, policy initiatives, or research projects. This includes bespoke modelling for HUG, LARS, ECO, and other energy efficiency programmes, with outputs tailored to scheme eligibility criteria and reporting requirements.

5. User Roles and Access Control

uZero implements role-based access control to manage user permissions within the platform.

Organisation Level

Organisation Admin: Manages all users, groups, and data access within the organisation. Can add, remove, and modify user roles.

User Roles

Data Viewer: View fuel poverty data, maps, and dashboards. Export data in permitted formats.

Data Analyst: All Viewer permissions plus the ability to create custom filters, saved views, and reports.

API User: Programmatic access to data via API for integration with external systems.

User roles can be assigned at the organisation level, and individuals can have different roles in different organisations where multi-organisation access is permitted.

6. Technical Requirements

6.1 Access Requirements

uZero is a fully responsive web application accessible via any modern browser on desktop or mobile devices. No separate mobile app or client software installation is required.

- **Supported Browsers:** Current versions of Chrome, Firefox, Safari, and Microsoft Edge
- **Connection:** HTTPS (TLS 1.2 or above)
- **Mobile Access:** Responsive design adapts to all screen sizes

6.2 Authentication

- **Username and Password:** Strict password policy requiring minimum 8 characters with uppercase, lowercase, digit, and special characters
- **Multi-Factor Authentication (MFA):** Mandatory for administrators; configurable for all users

6.3 API Technical Specifications

- **Protocol:** RESTful API over HTTPS
- **Authentication:** API key and secret credentials
- **Response Format:** JSON
- **Documentation:** Comprehensive API documentation with code samples

6.4 Export Formats

Category	Formats
Tabular Data	CSV, JSON, Excel (XLSX)
Spatial Data	GeoJSON,

6.5 Web Standards and Accessibility

uZero uses HTML 5.2, CSS 4, and the standard character set UTF-8. The platform adheres to WCAG 2.1 Level AA accessibility guidelines. All data transmissions are secured via HTTPS.

7. Service Levels and Availability

7.1 Availability Guarantee

uZero guarantees 99.5% platform availability, measured monthly.

7.2 Performance Thresholds

The following performance thresholds apply 95% of the time during normal operation:

Service	Performance Threshold
Page Load Speed	Within 3.5 seconds
Raw Data Access	3 MB/s or faster
API Access (Simple Query)	8 MB/s or faster
API Access (Advanced Query)	1.5 MB/s or faster

7.3 Issue Response Times

Our Service Level Agreement defines response times based on issue severity:

Severity	Acknowledged	Temporary Fix	Permanent Fix
Critical	1 business hour	1 business day	5 business days
Urgent	1 business day	3 business days	7 business days
Medium	1 business day	5 business days	10 business days
Informational	5 business days	N/A	N/A

Support is provided during Normal Business Hours: 8:00 am to 6:00 pm UK time, Monday to Friday, excluding Scottish public holidays.

8. Backup, Disaster Recovery and Business Continuity

8.1 Recovery Objectives

Recovery Time Objective (RTO): 3 business hours

Recovery Point Objective (RPO): 3 business hours

8.2 Backup Strategy

- Full snapshots are taken every night
- Incremental backups are automatically generated throughout the day
- Point-in-time recovery is available for any point within the preceding 7 days

8.3 Resilience Architecture

uZero is built on a microservices architecture deployed on AWS infrastructure with built-in redundancy. Services are continuously monitored and automatically restarted if interrupted. Auto-scaling infrastructure handles usage spikes without service degradation.

8.4 Business Continuity

UrbanTide maintains a Business Continuity Plan (BCP) including a Disaster Recovery Plan (DRP) as part of our Security Policy. The plan is reviewed and updated annually.

9. Hosting and Data Location

9.1 Infrastructure

Specification	Details
Hosting Provider	Amazon Web Services (AWS)
Data Centre Location	Dublin, Ireland (eu-west-1)
Data Residency	All customer data remains within the UK/EEA
Architecture	Microservices with auto-scaling
Storage	Amazon S3, OpenSearch Serverless

9.2 Data Segregation

Customer data is logically separated to ensure complete isolation between organisations. Each customer has dedicated data storage with separate access controls.

9.3 AWS Compliance

AWS datacentres comply with ISO 27001, SOC 1/2/3, CSA CCM, and numerous other international security and compliance standards.

10. Security

10.1 Encryption

Data at Rest: AES-256 encryption for all databases and files

Data in Transit: TLS 1.2 encryption for all communications

10.2 Access Security

- Role-based access control with granular permission levels
- Multi-factor authentication (mandatory for admins, configurable for all users)
- Strict password policy enforcement
- All access logged and auditable

10.3 Security Testing

- Annual penetration testing by CREST-approved service providers
- Continuous monitoring of software and library versions
- Security patches deployed within one day for critical vulnerabilities
- Development follows OWASP top 10 security guidelines

11. Onboarding and Training

11.1 Documentation

Comprehensive online documentation covers all platform functionality, including dashboard navigation, map interpretation, data filtering, API access, and reporting. Documentation is available at: <https://urbantide.atlassian.net/wiki/spaces/US/pages/2866446337/uZero>

11.2 Onboarding Support

New customers receive dedicated onboarding support, including project planning, platform setup, initial training sessions, and go-live support. The platform is designed for immediate use with minimal technical setup.

11.3 Training Options

- **Platform Overview:** Introduction to uZero, navigation, and data interpretation
- **Fuel Poverty Targeting:** Using uZero to identify and prioritise areas for intervention
- **Data Export and Integration:** Working with exported data and API integration
- **Strategic Planning Workshops:** Insights for programme design and bid preparation

12. Support and Maintenance

12.1 Support Channels

- Helpdesk for issue logging and tracking
- Email support
- Dedicated account management

12.2 Support Hours

Support is provided during Normal Business Hours: 8:00am to 6:00pm UK time, Monday to Friday, excluding Scottish public holidays.

12.3 Maintenance

Platform maintenance and updates are included in the service. Because uZero runs in the cloud, customers always benefit from the latest version with the latest features. Major issues are fixed immediately with hotfixes released as needed.

13. Data Export and Exit Arrangements

13.1 Data Export

Users can export data through multiple methods:

- **Self-Service Export:** Direct download from the web interface (CSV, JSON, GeoJSON)
- **API Extraction:** Programmatic retrieval using API credentials
- **Assisted Extraction:** Data provided in client-specified format upon request

14. Certifications and Compliance

14.1 UrbanTide Certifications

Certification	Description
ISO 27001:2022	Information Security Management System certification
ISO 9001:2015	Quality Management System certification
Cyber Essentials Plus	UK Government-backed cyber security certification

14.2 Data Protection

UrbanTide complies with the UK General Data Protection Regulation (UK GDPR) and the Data Protection Act 2018. uZero processes only aggregated and anonymised data which does not constitute personal data.

15. Other Procurement Options

UrbanTide is pre-qualified and listed on the following relevant public sector frameworks:

Framework	Reference
Spark DPS Framework	RM6094 Spark DPS
AI DPS Framework	RM6200 Artificial Intelligence
Big Data and AI	RM6195 Big Data and AI

16. Contact Information

For enquiries about uZero or UrbanTide services:

Email: hello@urbantide.com

Website: www.urbantide.com

uSmart Platform: www.usmart.ai

uZero Platform: uzero.usmart.ai

UrbanTide Limited

Registered Office: 71-75 Shelton Street, Covent Garden, London WC2H 9JQ
Head Office: Bayes Centre, University of Edinburgh, 47 Potterrow, Edinburgh EH8 9BT
Company Registration: 9222463
www.urbantide.com