

PUBLIC

Address Data Quality: Gas and Electricity

Cross-code Report (Provisional)

Address Data Working Group
ADWG03
21 October 2015

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

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1. EXECUTIVE SUMMARY

Further to the work on improving the quality of gas and electricity data, Ofgem has asked electricity and gas code administrators to establish an expert group (the Address Data Working Group (ADWG)) to look at address data. The objectives were to explore potential options for harmonising address formats, improving address data quality and utilising Unique Property Reference Numbers (UPRNs) to support the launch of a Centralised Registration Service (CRS).

The ADWG has considered the high-level costs, benefits, impacts and risks of various solution options, including introducing a mandate for Gas Transporters (GTs), Independent Gas Transporters (IGTs) and electricity Distribution Businesses (including and Independent Distribution Network Operators (IDNOs)) to populate existing registration systems with UPRNs for new connections and all existing Supply Points/Meter Points.

The report also includes:

- a review of the 'customer journey' on Change of Supplier;
- an assessment of address data quality issues and the extent to which they impact the customer switching process;
- consideration of whether the use of UPRNs should be extended to the wider industry (Suppliers, agents and, potentially, switching sites);
- an assessment of whether there are benefits in using the UPRN in the switching process itself; and
- a review of the benefits of using the UPRN (or other data cleansing and data harmonisation options) in the context of the proposed CRS.

The report concludes that:

- a) there are some benefits in the use of UPRNs in both gas and electricity. However, the ADWG (and consultation respondents) recommended caution in relation to how well UPRNs will address new connection issues and complex UPRN to Meter Point Administration Number (MPAN)/Meter Point Reference Number (MPRN) mappings;
- b) there are also concerns about the risks and costs of introducing a new identifier alongside the existing MPAN/MPRN, the disproportionate costs of Ordnance Survey address products for IGTs and IDNOs, the costs of migration and the data cleansing costs for MPAN/MPRN addresses that cannot be automatically matched to UPRNs;
- c) Distribution Businesses have voluntarily begun to populate their registration systems with UPRNs and are using Ordnance Survey's AddressBase product to varying degrees to help cleanse their address data. In the gas market, UNC Modification 0468 and IGT UNC Modification 0056 have been raised to mandate the use of the UPRN and are undergoing separate assessment;
- d) as progress is being made, practical experience is being gained of UPRNs and AddressBase, and the use of the UPRN in the proposed CRS has yet to be confirmed, the ADWG is not recommending a cross-fuel mandate of UPRNs at this time;
- e) The CRS design will need to take account of i) whether and how the MPAN and MPRN at a property should be linked, ii) whether addresses are maintained for each fuel or a single address is held and iii) the role played by the UPRN (if any), MPAN/MPRN and address in the next-day switching process;

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- f) once there is further clarity on CRS design, further consideration can be given to the question of whether there is a consequential need for Distribution Businesses and GTs to share the UPRN with Suppliers/Shippers, Electricity Central Online Enquiry Service (ECOES) and the gas Data Enquiry Service (DES);
- g) in terms of industry-wide adoption of AddressBase in all industry systems, the ADWG (and consultation respondents) were largely in agreement that there is no cost-benefit argument for adopting the UPRN and AddressBase across Supplier/Shipper and switching site systems (in addition to Distribution Business and GT registration systems);
- h) the ADWG (and consultation respondents) have found little benefit in using the UPRN in the switching process itself;
- i) the ADWG's analysis of address data quality issues and potential solution options has concluded that there is no 'one size fits all' solution to address all data quality issues;
- j) plot-to-postal issues result from the timing of data provision from local authorities and the Royal Mail and, although the use of UPRNs should help, better engagement and improvements to new connections processes are needed;
- k) the CRS will continue to face the same new connection (and property reconfiguration) issues and Ofgem will need to review how a cross-fuel new connections process will work as part of the CRS design;
- l) even well-maintained address data can be ambiguous, so the MPAN/MPRN represents a more robust way of triggering a Change of Supplier, and the ADWG proposes that Suppliers promote greater customer awareness of these 'account numbers';
- m) many issues arise due to the difficulties in keeping pace with the high numbers of address life-cycle changes (e.g. property reconfigurations, building/street renaming and renumbering) across a distributed system architecture and disseminating these changes across a chain that includes the Royal Mail, local authorities, network operator registration databases, Supplier systems, third party intermediaries and switching/price comparison websites; and
- n) there would be benefit in assessing the provision of data to switching sites using ECOES and the DES, whilst meeting the data protection requirements of the Information Commissioner's Office (ICO).

The ADWG recommends that:

- a) there should be no harmonisation of address format for gas and electricity at this time, as there are no tangible improvements in address data quality;
- b) no cross-fuel mandate of UPRNs should be introduced at this time, based on the assessment of benefits and costs obtained from the consultation. This is pending clarity on whether the CRS will include the UPRN and, if so, whether it needs to be pre-populated in current registration systems;
- c) Ofgem assesses the arguments for and against mandating the UPRN contained within this report when undertaking the Significant Code Review of next day switching and the design of the CRS;
- d) Ofgem monitors the benefits of the implementation of UNC Modification 0468 and IGT UNC Modification 0056 (if approved) and the voluntary uptake of UPRNs by electricity Distribution Businesses;
- e) Ofgem sponsors the following investigations:
 - i) how data is currently made available to switching services/price comparison websites using Royal Mail and third party intermediaries and whether the timeliness could be improved by providing access (subject to a review of the data protection implications) to central industry databases for the validation of customer addresses;

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- ii) how PAF addresses are used by switching services/price comparison websites;
- iii) a review of the benefits and implications of promoting the use of the MPAN/MPRN in the switching process to mitigate against the risk of ambiguities in address data matching;
- iv) a review of the new connections process, including the timing of issuing MPAN/MPRNs and how to promote improved plot-to-postal mappings, noting that an improved new connections process is key to the success of the CRS.

Members of the ADWG will present the draft Address Data Quality Report for comment to industry panels in October and November 2015.

The ADWG will send its report to Ofgem at the end of November 2015.

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2. INTRODUCTION

2.1 Background

One of the key objectives of Ofgem's 'Promoting smarter energy markets' work programme is to deliver improvements to the consumer switching process. In 2013 Ofgem established the Change of Supplier Expert Group (COSEG) to help it deliver a 'fast, reliable and cost-effective Change of Supplier process, which will facilitate competition and build consumer confidence'. COSEG members identified poor industry data quality (in both electricity and gas markets) as a barrier to fast and reliable customer switching.

In June 2014 Ofgem responded¹ by asking industry to provide an evidence-based assessment of relevant data items (e.g. metering and address data), ownership and governance by the end of 2014. The relevant industry panels set up two cross-code Data Quality Working Groups (DQWG) to review electricity and gas data quality respectively. The groups delivered their reports to Ofgem in December 2014².

Both electricity and gas reports recommended that industry should consider further:

- Use of a standardised and consistent address format across both gas and electricity markets; and
- Adopting the UPRN to improve the quality of industry address data and provide a further control as part of the switching process.

The reports recommended that Ofgem set up a dual fuel working group for this purpose.

On 10 February 2015, Ofgem published its decision³ to lead a programme of work to introduce reliable next-day customer switching by 2019. Ofgem expects the DCC to procure and run a Centralised Registration Service (CRS) to facilitate the delivery of next-day switching.

On 24 March 2015, Ofgem published an open letter⁴ agreeing with the recommendations in the data quality reports and asking industry to establish a group to review options for improving address data quality. Ofgem asked ELEXON to chair this group. Ofgem also asked the dual fuel working group to provide views on how faster switching, using centralised registration, can be designed to maximise data quality. Ofgem expects that the findings of the group will contribute to the business process design for its next-day switching programme.

Ofgem requested a report delivery date of the end of November 2015, to help inform the blueprint phase of the 'Moving to Reliable Next Day Switching' programme.

In May 2015, gas and electricity code administrators set up the ADWG to meet Ofgem's request.

2.2 Objective

The objective of the report is to consider the introduction of potential address data quality remedies to support the aspiration of faster and more reliable consumer switching. In particular, the report will consider:

- The potential harmonisation of electricity and gas address formats;
- Options for adopting the UPRN; and

¹ [Industry data quality, ownership and governance](#) (24 June 2014)

² [Electricity Data Quality Report](#) (ELEXON/MRASCo, BSC Panel paper 231/07a, December 2014) and [Cross Gas Codes Final Report on Industry Data Quality, Ownership and Governance](#) (Joint Office of Gas Transporters/IGT UNC/SPAA, December 2014)

³ [Decision on moving to reliable next-day switching](#) (10 February 2015)

⁴ [Open Letter: Industry data quality, ownership and governance](#) (24 March 2015)

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- The potential benefits of address harmonisation and/or UPRNs in supporting Ofgem’s ‘Moving to Reliable Next-Day Switching’ programme.

2.3 Scope

The ADWG has considered what changes are required to the market design in order to deliver any improvement options. There is no cross-governance between the gas and electricity industries and so the ADWG has no mandate to raise formal changes to the relevant code panels. Industry parties will need to raise modifications under the relevant industry governance arrangements to give effect to any recommended solutions. These modifications are outside the terms of reference of the ADWG.

2.4 The Address Data Working Group

The gas and electricity code administrators, with support from Ofgem, invited industry experts, a consumer representative and Ordnance Survey (as a technical advisor on the use of UPRNs) to join the ADWG. Group members, their organisations and meeting attendance details are included in Appendix A. ELEXON chaired the ADWG and drafted the consultation and report on behalf of the group. Gemserv provided secretariat services.

The ADWG developed the consultation (at its first two meetings on 17 June 2015 and 22 July 2015) to gather views (and, where available, evidence) on options to improve the quality of address data and the high-level costs and benefits of those options. Group members then reviewed the draft consultation individually. The ADWG issued the consultation on 19 August 2015 with a response date of 17 September 2015 (four weeks). The consultation is included as Attachment 1.

The ADWG received 33 responses, as below.

Respondent Type	Responses Received
Dual fuel Suppliers / gas Shippers	10
Gas Transporters (GTs), Independent Gas Transporters (IGTs) and Xoserve Limited	8 *
Electricity Distributors (including Independent Distribution Network Operators (IDNOs))	7 *
Price comparison websites / switching services	5
Others (service providers, Supplier agent, academic)	4
Total	33
* includes one organisation performing both IGT and IDNO roles	

The full consultation responses are included as Attachment 2.

The ADWG met on 23 September 2015 to review the consultation responses and agree draft recommendations. These responses, together with the ADWG discussions at the September meeting inform the content and recommendations of the final report.

2.5 Report content

Section 3 summarises the current electricity and gas processes for maintaining address data, including code obligations, registration systems and address types and formats.

Section 4 includes a ‘customer journey’ map showing how address data is used by switching sites and Suppliers in the switching process and the customer experience.

Section 5 provides background information on the UPRN and details of current industry initiatives in relation to the UPRN and gas/electricity addresses.

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Section 6 considers the causes of poor quality address data and the impacts that this can have on business processes and customer switching.

Section 7 sets out two solution options and considers potential further options.

Section 8 considers the requirements for improved address data quality and the potential use of the UPRN in the context of the proposed CRS.

Section 9 sets out the ADWG's recommendations and key findings. It also includes commentary following the presentation of the report highlights to the six industry panels/committees.

2.6 Next steps

Nominated ADWG members will present the draft report for review and comment to the following industry panels and committees during late October and early November 2015:

- Supply Point Administration Agreement (SPAA) Executive Committee;
- Master Registration Agreement (MRA) Executive Committee (MEC);
- Balancing and Settlement Code (BSC) Panel;
- Smart Energy Code (SEC) Panel;
- IGT UNC Committee; and
- Uniform Network Code (UNC) Committee.

The final report will be delivered to Ofgem at the end of November 2015.

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3. CURRENT ROLES AND PROCESSES

3.1 Electricity processes

3.1.1 Registration data

Schedule 2 of the [MRA](#) defines the Distribution Business as responsible for the Metering Point Address (including Postcode). The MRA requires each Distribution Business to hold the Metering Point Address as part of the registration data within its Meter Point Administration Service (MPAS) Registration System. In most cases, the Metering Point Address is the location of the connection to the distribution (or transmission) network or of a planned connection point. Exceptions include unmetered supplies. Connection points are identified by an MPAN.

As well as being held in individual MPAS Registration Systems, addresses are made available nationally, to authorised parties, via ECOES. Authorised parties have online access to the data to which they are entitled and Suppliers receive monthly data extracts on DVDs.

The MRA requires Distribution Businesses to hold address data in Standard Address Format (SAF). This is a minor variant on the Postcode Address File (PAF) format used by the Royal Mail and defined in British Standard 7666. MRA Agreed Procedure [Standard Address Format and Guidance Notes for Address Maintenance \(MAP09\)](#) provides further details on the use of the SAF. Appendix C shows the SAF and PAF address formats and highlights the differences between the two formats.

The MRA also sets out requirements in relation to the timing of address updates – within 60 working days of the publication by Royal Mail of an update to PAF addresses or 10 working days for other updates. Distribution Businesses also update address data based on Plot to Postal (P2P) documents received from the Supplier, local authority, developer or Independent Connections Provider (ICP). One consultation respondent noted the use of mapping systems to validate addresses where appropriate.

As Suppliers usually have more contact with customers than Distribution Businesses, they may be able to identify a change to a Metering Point Address ahead of the Distribution Business. While a Supplier can alert the Distribution Business to a potential address update, the Distribution Business is not obligated to apply the change, where a good reason exists (for example, addresses that are not PAF-valid, not confirmed as correct on a P2P document or would result in a duplicate if applied). There are requirements on Distribution Business to notify Suppliers within defined timescales that they have accepted or rejected a requested change (together with the reason for rejection). Updates to address information can be transferred over the Data Transfer Network (DTN) via formal data flows and in the agreed format set out in the Data Transfer Catalogue (DTC).

3.1.2 Other Distribution Business address data functions

Distribution Businesses hold address data for connections management, network maintenance, fault resolution, planned outage notifications, customer supply call management, quality of service reporting, asset management and providing a supply number enquiry service. They may also hold nominated contact addresses for vulnerable customers (e.g. customers on the Priority Services Register (PSR)) and addresses for Half Hourly Metering Systems for site specific Distribution System Use of System (DUoS) charging purposes. Some Distribution Businesses populate additional databases with MPAS address data to maintain a consistent address structure and format. However, this is not always the case. Distribution Businesses may supplement registration data with additional information such as customer (or builder) details, premise owner, alternative details, site contact and priority services contact details.

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3.2 Gas processes

3.2.1 Registration data

In its capacity as the Gas Transporter Agency, Xoserve holds and maintains the Gas Transporters' Supply Point Register. The Register holds a Supply Point Address for each Supply Point. This fulfils certain aspects of Condition 31 "Supply Point Information Service" of the Gas Transporter Standard Licence Conditions, including the obligation to maintain a register that contains, amongst other items, "a unique and accurate address of each such premises so far as is reasonably practicable, having regard to nature and source of the information provided to the Licensee".

As in the electricity registration arrangements, the address relates to the point of off-take, the Emergency Control Valve (ECV). The registration database holds address data in PAF format with a minor variation, the inclusion of a 'delivery point alias'. Large Gas Transporters (GTs) and small Gas Transporters/Pipeline Operators (IGTs) own address data. However, Shippers have an obligation to update address data during the switching process.

The Supply Point Address can be created or amended by the following processes:

- **M Number creation:** Xoserve receives new Supply Point data from Utility Infrastructure Providers (UIPs) through the M Number creation process. At this stage the address records are not full postal addresses, but are plot addresses or holding addresses used before the local authority adopts the road. Xoserve accepts these addresses in order to fulfil the requirement to create an MPRN within 24 hours of the receipt of data from UIPs;
- **PAF Update:** Xoserve applies PAF updates from the Royal Mail on behalf of the GTs; and
- **Address amendment:** Shippers can propose address amendments. Xoserve validates requests to change address data and only accepts address changes that are consistent with the PAF, except for new developments where the address is not yet included in the PAF. In the event of a partial match, Xoserve is able to manipulate the proposed address such that it becomes PAF valid.

Xoserve makes Supply Point Address data available to:

- Users (including Suppliers) of the online DES, which extends to the publication (but not validation) of IGT Supply Point Address data;
- National Grid, for the purposes of operating the M Number telephone enquiry service;
- Meter Read Agents for the purposes of operating the Must Read process;
- Shippers, during the Supply Point transfer process; and
- Gas Transporters for various purposes.

Xoserve administers the Sites and Meters database, part of the suite of UK Link applications, on behalf of GTs and Shippers. This includes Meter Point Addresses, which may be different to Supply Point Addresses. IGTs currently maintain their own registration services, holding data in PAF format and updating addresses according to P2P documents received from Shippers, local authorities or developers. One IGT shares addresses with Shippers at the point of registration for a new site and again at the point a meter fit report is issued. Another IGT shares data via a secure section of its website. IGTs share addresses on a daily basis with Xoserve to update the DES. IGTs also hold the addresses of Connected System Exit Points (CSEPs).

Project Nexus will consolidate the registration services across GTs and IGTs into one service, which Xoserve will operate. Project Nexus is currently due to complete by October 2016.

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3.2.2 Other Gas Transporter address data functions

GTs and IGTs use address data for a number of different processes. These include emergency response, managing new connections (including diversions and isolations), asset management, mains replacement projects, identifying shipperless and unregistered supplies, theft of gas investigations, network analysis/planning, demand analysis and ad-hoc queries. The level of validation on address data depends on the process being carried out.

Address data errors found as a result of other activities can be reported to Xoserve as part of the address amendment process. Gas Transporters may conduct site visits when they have exhausted all other means of resolving address queries.

3.3 Supplier/Shipper address data

Suppliers will typically hold a copy of the registration data. One Supplier respondent reported that they rarely change the addresses received from MPAS or GTs and only privileged users may do so, under exceptional circumstances. The Supplier in question provides these addresses to their metering agents and also uses them for agent appointment purposes. The Supplier only applies customer-led changes to the billing address.

Suppliers hold billing/contact addresses, where the customer wants to be billed/contacted at an address other than where the connection is located. For dual fuel customers, Suppliers typically hold a single billing address. The billing address is referred to as a 'Mailing Address' when sent to agents using electricity data flows. There are no industry rules for the maintenance of billing and contact addresses, as there are natural incentives on both the customer and the Supplier to maintain a correct billing address.

Billing address can be variants on the MPAS-registered address, as provided by the customer, such as 'vanity' addresses (for example 'Sea View', instead of a house number). Some Suppliers can add additional third party addresses, for example landlords, executors or the carers of vulnerable customers. Updates to additional address data are typically made following contact from the customer. A consultation respondent noted that where changes are notified via a sales agent, they will confirm with the customer using a sales validation call. They also investigate any discrepancies between customer-sourced address data and that held in the registration system. Suppliers may hold separate database for pre-sales and registered customers.

For non-domestic Suppliers, the billing address may be the address of the parent company, where the company has multiple meters at multiple service addresses. A consultation respondent reported that they will first establish the correct MPAN/MPRN, usually with the address and Meter Serial Number (MSN), and then re-align the address with that in ECOES/DES, even where the address is believed to be incorrect. This is because the address cannot be corrected until the registration is confirmed. Once registered, the service address becomes less important than the billing/contact address.

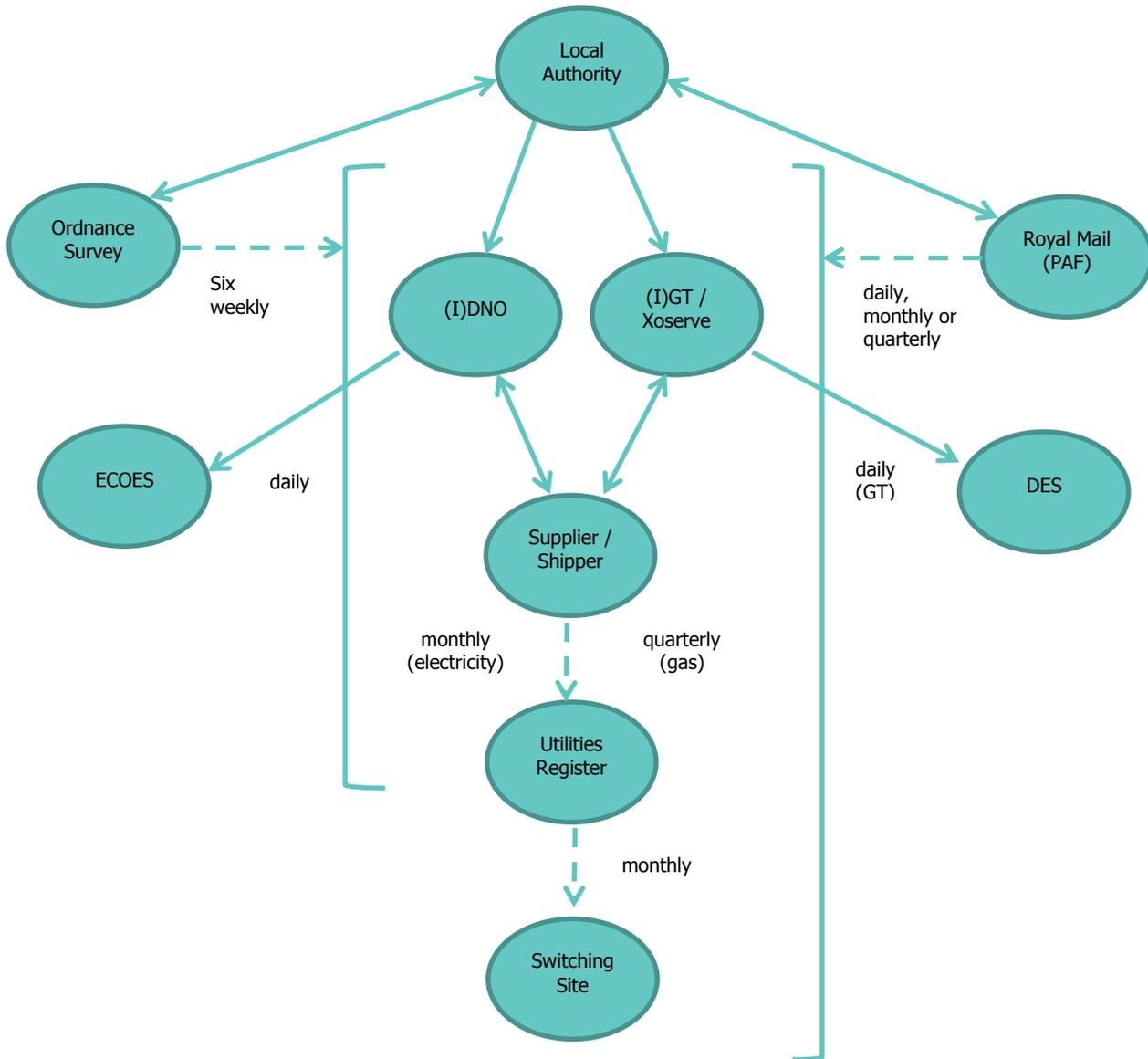
One respondent noted that they hold a plot address during the new connections process and retain it after a postal address has been received for reconciliation purposes.

The address formats for dual fuel customers used by additional Supplier databases (i.e. SAF, PAF or other) may vary depending on the source of the data (e.g. Distribution Business, Xoserve or the customer). Some Suppliers/Shippers use PAF to validate their additional address datasets.

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3.4 Address Data Updates

The diagram below shows the frequency of address data updates.



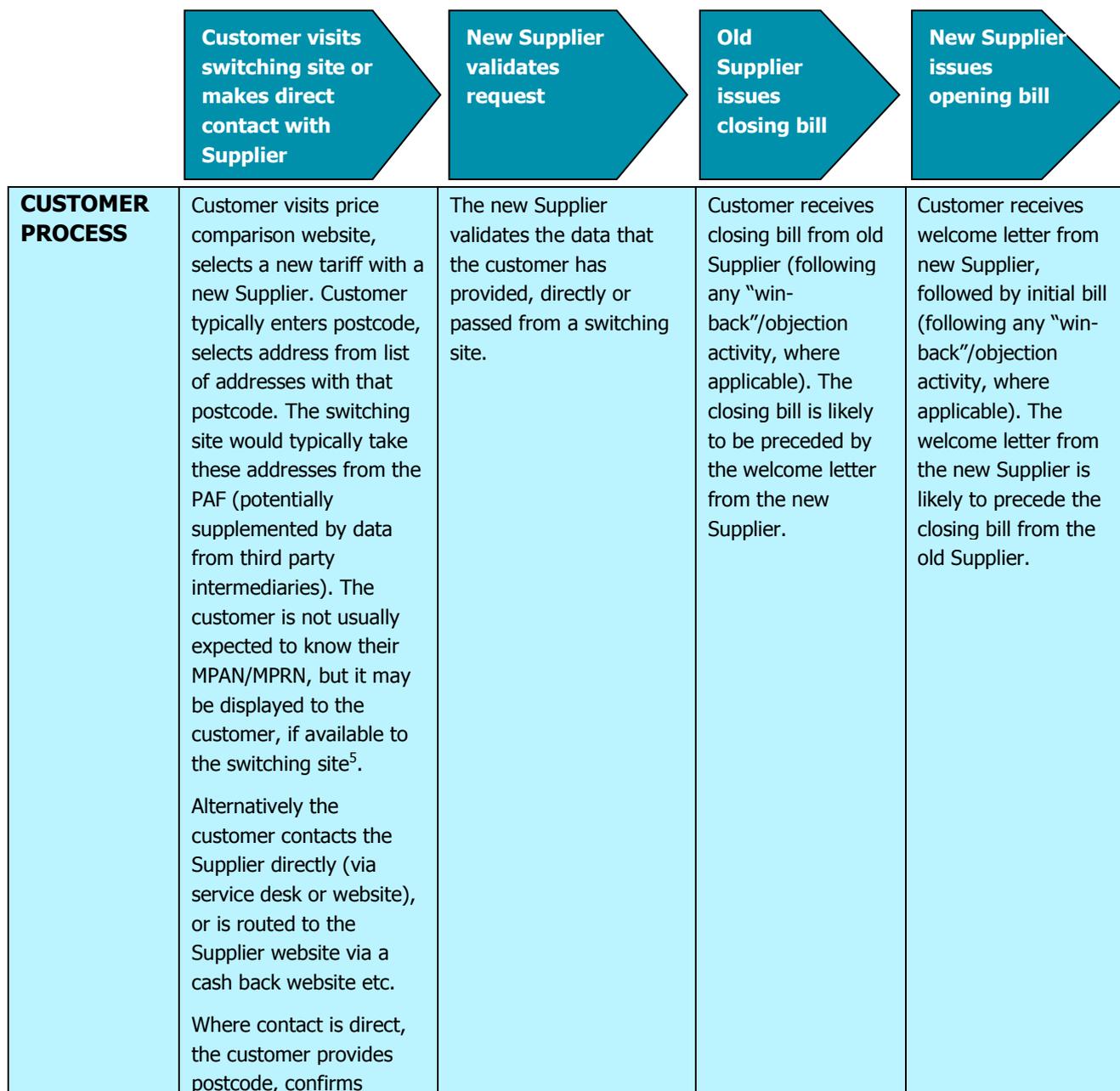
Dotted arrows indicate optional flows. All parties within the square brackets may receive Ordnance Survey and PAF data.

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4. CUSTOMER SWITCHING JOURNEY

4.1 Customer journey map

A 'customer journey' map for the switching process is shown below. The map focuses on the use of addresses in the switching process and how Suppliers determine the correct MPAN/MPRN.



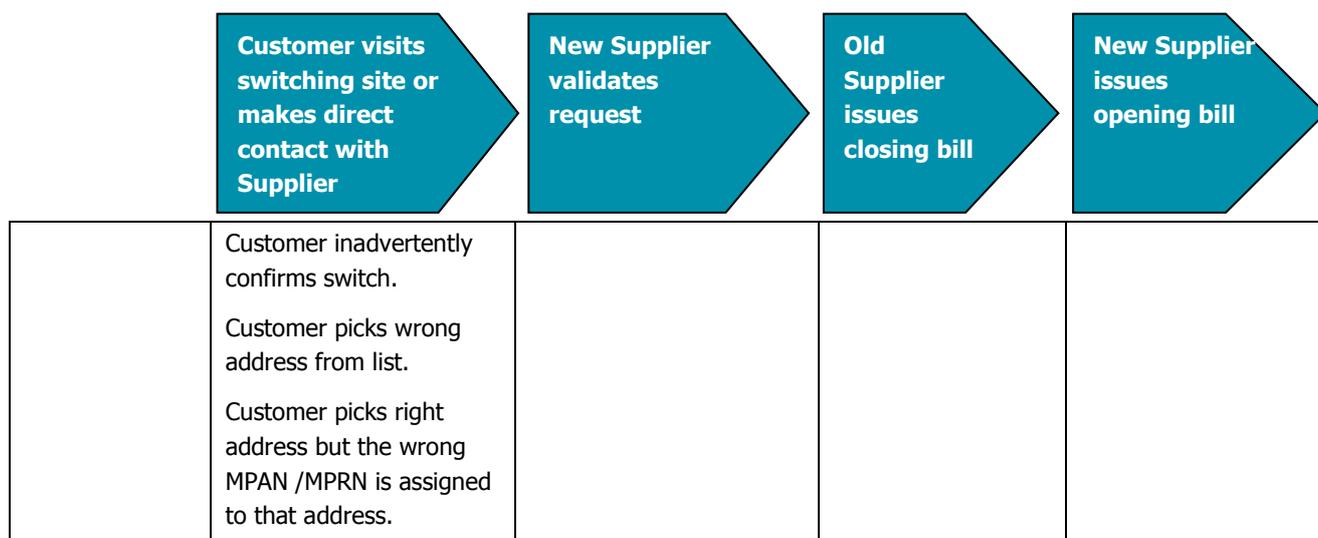
⁵ Energy Suppliers provide registration data to third party service providers, who, in turn, use web services to share this data with other agents and Third Party Intermediaries (TPIs), such as utility switching (price comparison) services. This allows switching sites to present the MPAN/MPRN associated with an address. In these cases, the addresses presented to the customer on switching sites will be gas and electricity registration addresses, cleansed against the PAF.

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	Customer visits switching site or makes direct contact with Supplier	New Supplier validates request	Old Supplier issues closing bill	New Supplier issues opening bill
	address and may be asked for MPAN/MPRN and MSN, depending on the Supplier. Supplier sites may present the customer with a list of registration addresses based on a postcode prompt.			
MARKET PROCESS	Supplier receives customer request and validates (as per next step).	Supplier 'triangulates' MPAN/MPRN, address and MSN (as available at point of sale) ⁶ , checks address against PAF valid data sources and notifies registration service of MPAN gain.	Old Supplier notified of loss by registration service. Closing reading received via Change of Supplier process.	New Supplier initiates Change of Supplier process and bills customer on initial reading.
 POSITIVE CONSUMER OUTCOMES	Customer's postcode known to switching site, customer able to select own address from list.	Customer details (from switching site or direct contact) pass validation and registration process is successful.	Timely and accurate closing bill received.	Timely opening bill received. Initial reading consistent with closing reading from old Supplier.
 NEGATIVE CONSUMER OUTCOMES/ CAUSES	Customer's postcode unknown (new, unavailable within the PAF or switching site/Supplier has not applied PAF update). Or the customer's view of their address does not match those presented by the switching site. This could result in a delayed or aborted switch.	MPAN/MPRN, address, MSN (where provided) fail 'triangulation' test, resulting in a delayed or abandoned switch. Erroneous Transfer (ET). Customer has a crossed meter.	Customer continues to be billed by old Supplier because of ET. Customer who has not attempted to switch receives welcome information from new Supplier (or closing bill from old Supplier) (ET).	No communication from new Supplier due to ET. Opening/closing bill mismatch.

⁶ The 'triangulation' process involves the Supplier mapping the MPAN/MPRN, MSN and address received from the customer with the same three data items in the registration system to ensure a good match.

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4.2 The switching process

The consultation asked for details of the steps taken to support each customer and market process, with particular reference to the use of address data.

Price comparison websites/switching services typically provide a postal address lookup to customers using PAF data from the Royal Mail. Depending on their PAF licence, switching sites can obtain updates daily, monthly or quarterly.

Some sites also receive address data from GBG Utilities Register, a third party application, which matches electricity and gas registration addresses (sourced from Suppliers and matched to PAF extracts), energy regions and MPAN/MPRNs. GBG receives updated registration data from electricity Suppliers on a monthly basis and from gas Suppliers on a quarterly basis. These are ECOES and DES data extracts. GBG then cleanses and rebuilds the data and makes it available to switching sites on a monthly basis. Some switching sites take daily PAF change files from the Royal Mail and apply these to a local copy of the Utilities Register for improved accuracy. Some price comparison sites also use postcode-to-energy region mapping data from GBG to quote correct prices. GBG merges gas and electricity address records where it can make a confident match. If there are any ambiguities, the switching site could present both addresses to the consumer, which can cause confusion.

Where a postcode/address is not available via the lookup, some sites allow customers to key in their address. Other sites allow customers to amend the addresses returned by the lookup, but not to manually enter an address. Sites may also collect ancillary address information (such as billing/correspondence addresses which vary from the supply point address registered in industry systems) and sometimes collect previous addresses from the customer to allow Suppliers to perform credit checks.

Some sites use the Utilities Register data solely as an online address lookup, whereas others utilise additional data such as MPAN/MPRN, MSN and meter type to help resolve address data ambiguities. If the switching site is unable to match an address to an MPAN/MPRN using the Utilities Register data, the site may prompt the customer to input the MPAN/MPRN manually (sourcing it from a bill). Those switching sites that do not request an MPAN/MPRN place greater reliance on subsequent 'triangulation' by Suppliers. Where a customer enters their address into free text format at a switching site, Suppliers can encounter difficulty in matching the address with industry registration data.

Switching sites pass the data captured from customers, via a daily batch transfer (typically in CSV or XML format) to Suppliers for validation. For dual fuel switches, the switching site will typically attempt to triangulate the Royal Mail, electricity and gas addresses and, where there is a three-way match, will create a single record containing both the MPAN and MPRN. Where a match is not found, customers may be asked to key in their MPAN and MPRN.

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Switching site respondents noted the different formats in which Supplier expected to receive address data. One site notes “overly restrictive technical requirements” on the contents of address fields, such as disallowing commas and apostrophes. Some Suppliers have a provision in their batch file for a customer’s billing address being different from the service address, but not all do so. Supplier respondents noted the different standards used by switching sites. There are no governance arrangements covering the interfaces between switching sites and Suppliers, so process improvements are reliant on goodwill and a shared incentive to make the process run as smoothly as possible.

Customers may also sign up using Suppliers’ own websites, using brokers or by direct telesales. During verbal sales, the customer can provide their preferred address, which may be a ‘vanity address’. If the Supplier is unable to match the customer’s preferred address, they can request additional information at the point of sale to verify the correct supply.

It is likely that the first communication the customer will receive after the sales activity is any ‘welcome’ information from the new supplier. This will be the first indication to the customer that the transfer activity is going ahead and providing details of the new contract and transfer date. This may be a trigger point for the customer to contact the current supplier to raise any concerns regarding a potential ET. The customer may also then receive information about objections or win-back messages from their losing Supplier and the new Supplier will be in touch with the customer to gain opening reading details. Only after these steps have completed will the respective Suppliers generate the final and initial bills.

4.3 The consumer experience

Consultation respondents reported a number of issues:

- The wrong MPAN/MPRN is switched (i.e. an Erroneous Transfer);
- The Supplier may delay the switch while they contact either the customer or switching site to clarify address data; and
- The switch may proceed, but the customer receives no correspondence.

These issues damage consumer confidence in switching. Consumers may also face longer periods on more expensive tariffs or miss out on cheaper tariffs.

Following a transfer, address data quality may cause additional issues:

- For business customers, in particular, not receiving invoices will result in non-payment, which could hamper further attempts to change Supplier;
- Customers may be subject to failed appointments for meter fixes, meter replacements or fault repairs; and
- Failures to obtain readings from traditional meters may result in inaccurate billing.

Switching sites usually present customers with a list of Royal Mail PAF addresses/postcodes to select their property. Problems can arise for a number of reasons:

- The PAF only holds Royal Mail delivery addresses rather than all gas and electricity points;
- PAF may hold a different version of the address (or postcode) to that on ECOES/DES or to that known by the user;
- PAF may not hold all details of flat numbers, resulting in the website user choosing the ‘parent’ building;
- A new (or amended) address may not yet be reflected in the switching site’s PAF data or in the industry registration data; and

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- In electricity in particular, multiple meters may be associated with the same site/MPAN (particularly for business customers) or more than one MPAN with the same address, so the address alone is not sufficient to ensure a correct switch.

One Supplier reported feedback from customers that the old Supplier is unwilling to correct address issues ahead of the switching process. In these cases, the Supplier has to confirm information that is known to be incorrect in order to allow the switch to proceed.

A switching service noted that where customers highlight address errors to them, it could take up to six months to receive updates.

4.4 Good practice

As part of the consultation, the ADWG sought views on of any best practice validation and address-related controls, that Suppliers and switching sites apply during the initiation of the switching process in order to mitigate the risk of erroneous customer transfers.

Switching sites typically validate supply addresses against the Royal Mail database, one respondent noting a mismatch in 10-15% of cases. Some switching sites are able to improve address matching by providing additional data from third party databases. This includes registration data (sourced from Suppliers), electoral roll addresses, MPAN/MPRN and MSN searches, and PAF/registration data postcode matching.

A switching service suggested that direct access to current ECOES/DES data, rather than having to rely on monthly or quarterly updates from Suppliers, would go a long way to mitigating address issues. The same respondent also noted that when they request an MPAN/MPRN from the user, because it is not available from third party data, they validate it using industry check-digit algorithms. They also present all information captured from the customer in an email to the customer for checking.

Switching sites try to strike a balance between providing additional information to help the user select the correct address and not overwhelming the end-user with too many search options.

Supplier respondents noted the benefits of using PAF validation. One Supplier uses a third party product, which combines ECOES and Royal Mail data, to validate addresses received through sales channels. Another Supplier noted that customers who switch through the Supplier's website have a higher success rate than those switching using price comparison sites. Validation rules vary depending on the channel through which the customer chooses to sign up for energy products.

In general, Suppliers use additional 'triangulation' where necessary – i.e. matching the MPAN/MPRN, address and MSN, where available. Where possible, Suppliers collect this information from the customer at the point of sale. Otherwise, Suppliers may collect the additional information through a follow-up call in the event of an address ambiguity or mismatch with industry sources such as ECOES or the DES.

One Supplier produces reports, once sale data is loaded, to highlight potential address mismatches that could give rise to an Erroneous Transfer. Like some switching sites, dual fuel Suppliers may cross-check the electricity and gas addresses and seek confirmation from the customer in the event of potential errors.

Other checks performed by Suppliers include:

- Checking ownership/occupancy through credit referencing software;
- Validating outcode (first part of postcode) against town/city and county; and
- Re-using any existing customers records (from previous periods of supply or where the other fuel is already supplied).

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5. UNIQUE PROPERTY REFERENCE NUMBER

5.1 What is a UPRN?

A UPRN is a unique identifier for every addressable location in Great Britain. Local authorities assign UPRNs to properties as part of their statutory responsibilities. The Ordnance Survey allocates additional UPRNs for objects on the landscape, which may not otherwise have an address. Examples are car parks, mobile phone masts and churches.

Please note that references to UPRN throughout this document relate to the identifiers assigned by local authorities and used by Ordnance Survey address products (see 5.3 below). Whilst there have been alternative property references used historically, the UPRN appears to have emerged as a de facto standard, in the public sector at least, through widespread adoption.

5.2 Roles and responsibilities

Local authorities have a statutory obligation to implement British Standard BS7666 and to maintain Local Land and Property Gazetteers (LLPG) in England and Wales and Corporate Address Gazetteers (CAG) in Scotland. Their responsibilities include providing names and numbers for every street and property and allocating UPRNs.

GeoPlace[®], a public sector limited liability partnership between the Local Government Association and Ordnance Survey, is responsible for issuing UPRNs to local authorities and ensuring that UPRNs are unique. GeoPlace also acts as a co-ordination point for inputs from the LLPGs, Ordnance Survey, Royal Mail, the Valuation Office Agency (VOA) and the Improvement Service in Scotland.

5.3 Address products

Whilst the UPRN has value as a unique and persistent identifier, to unlock additional value (as described in 5.4 below) requires a database of address data. Ordnance Survey offers three such datasets:

- AddressBase[™] includes (in addition to the UPRN);
 - National Grid co-ordinates;
 - Classification (type of use of a property e.g. ZW00CH = church);
 - PAF address
 - Royal Mail Unique Delivery Point Reference Number (UDPRN);
- AddressBase Plus[™] adds non-PAF elements such as local authority geographic addresses, Ordnance Survey MasterMap Topographical Identifiers (TOIDs), multiple occupancy data and Objects Without Postal Addresses (OWPA); and
- AddressBase Premium[™] adds full lifecycle details to the current view, including provisional (pre-build) properties, historical addresses and alternative addresses.

Licensed partners can provide software that utilises the Ordnance Survey datasets.

Although the UPRN is freely available as an identifier, its value can only be unlocked with access to the associated local authority and PAF address data and OWPA data from Ordnance Survey. This suggests that, other market available products would need to either access the Ordnance Survey datasets or risk providing an inconsistent view.

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5.4 The UPRN lifecycle

A UPRN is a persistent identifier. Guidance states that local authorities should enter UPRNs against a record as soon as 'construction' begins or the local authority has carried out 'street naming and numbering', whichever is the earlier.

Throughout its lifecycle, information on the address of a property can change. This may be due to a change of name, a sub-division or aggregation of an address within a building, change of use, such as from single occupancy to multi occupancy, or the eventual demolition of the property. All of these historical, alias and provisional addresses are recorded against the same UPRN.

So for example, if a house is sub-divided into flats, the house will retain its UPRN and the flats will be allocated new UPRNs, which are then linked (through a child-parent relationship) to the UPRN of the original house. A UPRN is never reused.

The UPRN can be used to cross-reference data associated with it, such as a PAF address, local authority address or the precise property level geographical co-ordinates. If an address or postcode is changed (for example, the renaming or renumbering of buildings, flats or streets), the UPRN will persist, such that the new address can be traced to the old address and vice versa. The address products associated with the UPRN provide information about address changes every six weeks.

AddressBase allows users to link addresses to alternative addresses (e.g. 'Dunroamin' for 6 Acacia Avenue) to help avoid duplicate records.

In AddressBase, a 'Basic Land and Property Unit (BLPU) State' can be used to track the lifecycle of the property or land object, through 'planning permission granted', 'under construction', 'in use', 'unoccupied', 'no longer existing'. A UPRN is usually created before a PAF address. Local authorities first capture addresses in their LLPG or CAG from planning applications, building warrants and the statutory street naming and numbering process. For a new multiple occupancy development (such as a housing estate), the local authority may allocate a batch of UPRNs and record the geographical coordinates as a single point on the development site. At this stage the UPRNs can change location, but within six weeks of construction starting, the geographical location of the UPRN is fixed. Some local authorities wait until construction begins before assigning a UPRN. The ADWG noted that there were regional variations in the relationships between property developers and local authorities that could result in inconsistencies in the timeliness of assigning pre-build UPRNs.

A consultation respondent noted that there are large numbers of metered street furniture supplies (including some 50,000 recent new connections to telecoms equipment cabinets). AddressBase licensees can request UPRNs for OWPA's, but allocating UPRNs to all metered street furniture would be challenging, as they are not perceived as properties and do not feature in local authority planning processes. Accurate mapping of these items would be useful for industry processes.

5.5 Licensing considerations

The Ordnance Survey licenses its address products to public sector organisations under the Public Sector Mapping Agreement (PSMA). The PSMA is partnership between the Department of Business, Innovation and Skills (BIS) and Ordnance Survey. Members include town and parish councils, London boroughs, NHS Health Trusts, police constabularies and government departments, including the Department of Energy and Climate Change (DECC). DECC has a 10 year agreement under the PSMA, pre-licensed with Ordnance Survey, to use its products for the purposes of government requirements. This covers the DCC for the purposes of the smart metering rollout and emergency services, but not the utility companies. Ordnance Survey has confirmed that the sharing of UPRNs between market participants would fall outside the definition of public sector use due to a) competing/commercial activity, b) third party use and c) Royal Mail PAF licensing restrictions.

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The Ordnance Survey also licenses its address products to commercial organisations via a Framework Contract (Direct Customers) (FCDC) or a Frame Contract (Partners) (FCP) licence.

There is no requirement to hold a licence to exchange UPRNs. However, recipients of a UPRN would need a licence to access the associated data held by the address database products. The current price of an AddressBase Premium Licence is £189,370 per year (plus VAT)⁷. Two year contracts attract a 4% discount and three to five year contracts attract an 8% discount. The price includes use of AddressBase Premium on 101 or more terminals⁸. Reduced rates apply for lower numbers of terminals or reductions in the number of addresses by selecting specific geographical areas.

Depending on what solution, if any, the industry adopts, Distribution Businesses, Gas Transporters, Suppliers/Shippers and (potentially) Supplier agents might need to hold licences. Alternatively, the industry could attempt to negotiate an industry-wide licence. Some Distribution Businesses and GTs are already holders of the relevant licences and are using both the UPRN and AddressBase products in their businesses.

Consultation respondents noted the need for more work to understand fully the licensing considerations for any proposed solutions. In particular, a respondent raised the question of whether a licence is limited to a single licensed business or can be used for several licensed entities within one business.

5.6 Past initiatives

In 2011 DECC's Smart Metering Implementation Programme (SMIP) considered the changes that would be needed to facilitate the rollout of smart metering. DECC noted in its '[Legacy Systems Changes](#)' paper (October 2011) that:

"UPRN provides a reference key to join related address records across different Gas and Electric MPAN and MPRN datasets.

Although this data item is not required directly for access control purposes, the DCC would benefit from having access to this information for its inventory management. There is a requirement for DCC to identify all smart metering equipment at a customer's premise to assist suppliers with their rollout planning especially when single fuel installations occur with time delays between the utility installations. A spatial reference is required per customer premise for each utility in order to tie together the electric MPAN and gas MPRN'.

This resulted in consequential changes to both the electricity and gas arrangements to ensure that the new smart metering flows could accommodate the transfer of the UPRN between parties once the data item was available.

MRA CP 199 introduced the UPRN as a new item within the Meter Point Administration Data (MPAD) that is held by the MPAS registration systems. The UPRN is owned by Distribution Businesses, as part of the address data, but there is no mandate for Distribution Businesses to populate the data item.

The UPRN was also added, as an optional data item, to ECOES and a number of data flows, allowing the UPRN, where populated in MPAS, to be passed to Suppliers, ECOES and to the DCC.

UNC Modification 430 'Inclusion of data items relevant to smart metering into existing industry systems' (and IGT UNC Modification 47) added the UPRN in data flows for smart meters, unlike the electricity changes, which apply to all meters. The UPRN was included in the list of data items, which Transporters could, subject to availability, pass to the DCC on request. The Final Modification Report noted that the UPRN is 'likely to be blank in initial phases – requirement has been identified but method of population remains outstanding and subject to a DECC policy decision'. The UPRN was also added to the DES, although it is not currently populated.

⁷ '[Business portfolio price list 2015-16](#)' (Ordnance Survey, March 2015)

⁸ Laptops, personal computers or workstations on which the licensed data is displayed or used.

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5.7 Current use of UPRNs

Some electricity Distribution Businesses elected to populate the UPRN in their registration databases. They are either using or considering using address database products to improve the quality and management of addresses. In one case, this includes cleansing and validating address data in line with PAF data, and applying the UPRN to existing records where possible. In another case, the Distribution Business has gone further and is updating addresses automatically on receipt of updates from Ordnance Survey's AddressBase, linked on the UPRN. They have chosen to use UPRNs for network management and asset tracking purposes, and as preparation for the introduction of smart grids.

A GT reports that it holds further address information, which it derives from AddressBase and complements the data received from the central Supply Point Register.

Some Shippers are using UPRNs for their own purposes (e.g. asset management).

5.8 Current initiatives for UPRNs

E.On has raised two modifications to introduce UPRNs under the gas arrangements:

- [UNC Modification 0468 'Unique Property Reference Number \(UPRN\) Population by Gas Transporters' \(September 2013\)](#) requires GTs to populate the UPRN into the address data set; and
- [IGT UNC Modification 056 'Unique Property Reference Number \(UPRN\) Population by Pipeline Operators' \(October 2013\)](#) requires IGTs to include the UPRN as part of the premise address details for each supply point.

Both modifications are currently in the assessment (Working Group) phase. The modifications argue that the government is introducing energy policies, which relate to a 'premise' rather than to a specific customer. There is no reliable or consistent mechanism that uniquely identifies the premises that will support future policy delivery.

The modifications cite difficulties in matching addresses in different systems without a reliable unique reference. The difficulties are exacerbated by lifecycle changes to addresses, which usually start life as a plot reference and then are updated by property developers, the Royal Mail, local authorities and customers.

The modifications seek to introduce obligations on GTs and IGTs respectively to include the UPRN as part of the address details for each supply point. This would apply to all currently connected premises as well as all future connections. GTs and IGTs would be required to use the UPRN to help validate address data and to keep addresses up-to-date. The UNC and IGT UNC modifications do not direct the use of any particular address database product. There will be no requirements to pass the UPRN to other market participants, so avoiding any potential licensing issues for other participants.

If approved, the implementation date for the modifications will be after the implementation of Project Nexus (currently planned for October 2016).

There are no changes underway in the electricity market for mandating the use of UPRNs.

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6. ADDRESS DATA QUALITY ISSUES

6.1 Types and causes of address data quality issues

The table below lists types of address data quality issue, along with some of the root causes. This information is summarised from the electricity and gas reports on data quality and incorporates additional information taken from ADWG discussions and from consultation responses. The consultation asked respondents to focus on those problems that give rise to (or could give rise to) Erroneous Transfers, present barriers to customer switching or otherwise adversely affect the switching (or billing) experience for the consumer.

Incorrect or incomplete address data can also have a negative impact on Distribution Business and GT/IGT business processes, including:

- Problems communicating with customers;
- Problems in attending site in a timely manner (and consequent failures to meet regulated emergency response targets); and
- The costs of investigating address issues, including site visits.

Xoserve note that poor address quality may adversely affect the accuracy of the energy allocation process, as postcode errors may place a Supply Point in an incorrect Local Distribution Zone, leading to the application of incorrect Exit Zone and End User Category data. However, Project Nexus should resolve this issue.

Ref	Issue	Description
1	Inconsistent gas/electricity formats	The ADWG does not believe that the use of the SAF format for electricity and (a minor variant on) the PAF format for gas presents a significant issue. Most applications present all lines of the address to the user, rather than working on a line-by-line basis. If the CRS design uses a single address for both fuels, a common format would need to be agreed. Third party respondents to the consultation, who employ automated address mapping processes, noted the challenges of machine-to-machine address line matching compared to using a key (like postcode or UPRN). Automatically populating data across different systems with different address formats can lead to inconsistencies.
2	Inconsistent gas/electricity address contents	For dual fuel customers, the Supplier should be able to resolve any inconsistencies between the electricity and gas addresses, subject to the GT/IGT or Distribution Business agreeing the change. So long as the postcodes are consistent, this should not cause significant switching issues. DECC has carried out a review of gas data and matched around 90% of gas MPRNs to electricity MPANs. One Supplier identified discrepancies between the two industry registration database as being a common cause of Erroneous Transfers. Another Supplier noted that inconsistencies in how fields are populated (e.g. 'districts' appearing in 'City/Town' fields) can result in duplicate MPAN/MPRNs being created.

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Ref	Issue	Description
3	Incomplete address data	<p>Once a property has a postcode and PAF address, regular PAF updates should mitigate the risk of incomplete address data. For issues with immature (and hence skeletal) addresses see 'plot-to-postal' issues below.</p> <p>Two Distribution Businesses noted that some legacy data (i.e. from the initial population of the registration systems ahead of the introduction of retail competition in 1998) lacks detail, creating problems in matching with Royal Mail data.</p>
4	Plot-to-postal issues	<p>New, multi-occupancy developments (like new housing estates) are allocated plot numbers until local government allocates an address and the Royal Mail allocates a postcode. Difficulties in linking the PAF address back to the plot number can result in a Supplier/Shipper requesting an MPAN/MPRN without being aware that one already exists. This leads to duplicate MPAN/MPRNs, which in turn can cause double billing and issues for subsequent CoS events. One Distribution Business estimated that 0.1% of MPAN requests are duplicates.</p> <p>Plot-to-postal issues may be exacerbated, if the developer changes the scope at the development stage and adds, removes or renumbers plot numbers. Property developers and local authorities who fail to update plot-to-postal address mappings in a timely manner, or record plot numbers or postcodes inaccurately, can cause problems. Once a connection has been provided and a meter installed, developers are no longer incentivised to engage with the utility companies. As such, processes to harmonise address data on completion of a development project are weak.</p> <p>Multiple industry databases will apply plot-to-postal changes at different times.</p> <p>Customers moving into new builds, may provide a plot number instead of a house number, or the house number may not have been correctly mapped to the plot number (as above).</p>
5	Historical churn and timing of address updates	<p>Delays to switching can occur if registration systems do not keep up-to-date with address changes. Change of use, merging or subdividing properties, house renumbering and street renaming can all result in customers attempting to change their Supplier with an address that is not recognised by industry systems or is not recognised as the customer's address by industry registration systems. Failure to make the link between a property pre- and post-reconfiguration can result in duplicate MPAN/MPRNs. The sub-division and merging of properties will only be updated if the consumer</p>

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Ref	Issue	Description
		<p>registers the change with their local authority.</p> <p>Property reconfigurations are likely to require supply points to be added, move or removed. The resulting MPAN/MPRN changes need to be aligned with the property changes associated with the UPRN(s).</p> <p>A switching site notes that they only receive PAF updates every three months, so there is the potential for new homes not to appear on the database. A switching site also observes that when industry data is not up-to-date, the process for correcting it is not well understood or timely, and there is a lack of Service Level Agreements in order to manage customer expectations.</p>
6	Crossed meters	<p>Crossed meters result from meters being matched incorrectly to customer addresses and MPAN/MPRNs. In blocks of flats, meters can be installed in a shared room that is physically removed from the customers' flats. If a customer's MPRN/MPAN is associated with the wrong meter, the customer's bills will be based on a neighbour's consumption. Another cause of crossed meters is the developer of a new site directing the meter installer to a different property than the one that has already been associated with an MPAN/MPRN in the installer's job request.</p> <p>Crossed meters occur in relatively low numbers but can be difficult to resolve, especially when they affect multiple customers, Suppliers and Meter Operators. The MRA Issue Resolution Expert Group (IREG) is reviewing the process to resolve crossed meters, following a recommendation in the Electricity Data Quality Report.</p> <p>A Distribution Business respondent noted that if Suppliers associate the wrong meter to an MPAN, they might attempt to update the MPAN address rather than resolving the meter issue.</p>
7	Use of multiple addresses	<p>Industry parties have different requirements for addresses. GTs, IGTs and Distribution Businesses need the address of the physical connection to the premise. Meter Operators and Data Collectors need to know where to find the meter. Suppliers need to know where the customer lives and where to send communications. If parties request a change to the address details to reflect their own requirements, this can lead to errors in central systems. If a customer provides a 'vanity' address, this could cause rejections when validating data flows, which can then cause delays in the switching process. Any non-PAF addresses can vary between systems. One respondent, a GT, noted that PAF valid addresses might</p>

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Ref	Issue	Description
		<p>have up to 14 fields, which can be captured in as few as seven fields in some systems, creating address matching difficulties.</p> <p>Xoserve observes that the most common cause of poor address data quality is the challenge for industry of maintaining alignment of data in an environment where a) there are multiple attributes in use, b) parties do not hold addresses in a common and consistent format and c) multiple stakeholders update their address records in different timeframes.</p> <p>An IGT reported problems caused by inconsistencies between their registration data and that held by Xoserve, problems which should be resolved by Project Nexus.</p>
8	Poor quality data provided by the customer, switching site or sales agent	<p>A customer using a switching site typically provides their postcode to obtain price comparison data. To obtain more detail about alternative Supplier tariffs and to request a switch, the switching sites typically ask customers to select their address from a list of properties associated with their postcode. The switching site may also ask the customer to provide their MPAN/MPRN. Suppliers will validate the data sent by the switching site and (where supplied) match the MPAN/MPRN and address using industry registration data. Validation failures can result in the switch not taking place or in Erroneous Transfers.</p> <p>If the customer's address is not included in the Royal Mail (or third party) address data, some switching sites allow the customer to enter their address in free text format, leading to difficulties for Suppliers in matching the correct address.</p> <p>Customers can also unwittingly request a transfer, if they misunderstand the switching site process. They can mistype values or select the wrong address in error ('lively mouse' syndrome). They can also submit other people's postcodes for the purposes of comparing prices and inadvertently proceed to the point of requesting a transfer. One switching site reported some cases where customers, asked to enter their MPAN/MPRN, have performed a web search for an example meter number and entered this in order to complete an application.</p> <p>Customers requesting a transfer directly with a Supplier may also provide an incorrect MPAN/MPRN or address. Two Suppliers note that Erroneous Transfers are often associated with customers moving into new homes, who, prior to moving in, may not have their exact address.</p> <p>An element of user error is also inevitable. Sales agents may</p>

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Ref	Issue	Description
		mishear callers where the call quality is poor. As with customers using switching sites, call centre staff or sales agents may mistype or select the wrong entry from the returned data in an address search.
9	Ambiguous address data	The customer may select the wrong address at a switching site if the addresses on the list are similar. These would tend to be the PAF addresses, so any ambiguity would not be the result of industry address data quality. Ambiguities can arise for rural locations, conversions and because of flat numbering conventions (consultation respondents referred to the difficulties presented by the numbering conventions for tenement blocks in Scotland). Further problems can arise where fields are transposed (e.g. flat number and property number).
10	Supplier address updates	Suppliers can propose address changes in good faith, when requested by a customer, without being aware of the impact on adjacent properties (which they do not supply). In doing so, they may introduce duplication or ambiguity, which may also go unchecked by the Transporter or Distribution Business applying the change. Inaccurate or inconsistent manual updates can cause issues. A consultation respondent (Supplier) observed that the process for correcting addresses in registration systems was not timely.
11	Multiple Meter Points	Issues can arise on industrial and commercial sites with multiple meter points.

6.2 Impacts of poor address data quality

6.2.1 Ofgem Analysis

Ofgem presented data to the COSEG in 2013 showing that the so-called 'Big Six' Suppliers were transferring the wrong customer (Erroneous Transfers) in around 1% of cases. Ofgem estimated that it costs Suppliers at least £10m per annum to administer the Erroneous Transfer process. Most Erroneous Transfers have a negative impact on two customers, the one whom a Supplier transferred in error and the one whose transfer was delayed as a result. There can also be delays for a customer who wishes to change their Supplier, in the event that the customer provides their (correct) address, but this does not match the (incorrect) address held for that customer in the registration system.

Ofgem's data estimated that 71% of Erroneous Transfers in the electricity market and 70% in the gas market (based on sample data for 2012) were the result of selecting the incorrect MPAN/MPRN. Energy UK also presented an analysis of 39 Erroneous Transfers to the COSEG. 16 of 39 cases were due to manual errors (the Supplier selecting the wrong customer to transfer). "Poor industry data" accounted for a further 14 cases. This category included where there is incorrect data on central systems and when it was not clear from central data, what the correct site was (e.g. naming conventions for flats) and the Supplier had selected the wrong customer. The remainder of the sample (9/39) related to incorrect data provided by brokers or customers.

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6.2.2 Consultation Responses

The consultation asked for any analysis (quantitative and/or qualitative) of the relative impacts of the various address data quality issues.

Most respondents were unable to provide analysis of Erroneous Transfers. Where responses were provided, they were consistent with Ofgem's value of 1% of all transfers. One Supplier reported Erroneous Transfers as 1% and estimated that 30% of these were due to address data quality issues. A major part of these appear to be due to third parties sending data with a different format or no address validation. Another Supplier provided data for the period September '14 to June '15 showing that the average number of cases where they had confirmed the address as correct, but the industry registration data was incorrect, was just under 1% for electricity and 1.8% for gas.

A Supplier reported that in June 2015, 14.8% of their Erroneous Transfer gains arose where internet applications presented multiple addresses for a single premise and, using all available information, neither the customer nor the Supplier could match a unique address.

Electralink has analysed 'Erroneous Transfer Communication' (D0301) electricity data flows and found that nearly 60% are sent with a 'Reason for Return' of 'Incorrect MPAN Selected'. Analysis of the 'Notification of Failure to Obtain Reading' (D0004) data flow showed that over 13,000 meter reading visits were failing each month during 2014 and 2015 due to inaccurate address data, up from nearly 10,000 in 2013.

A Supplier estimated that address data quality issues cost £10 per instance to resolve (excluding customer compensation or write-off issues). As well as causing Erroneous Transfers, crossed meters and delays to switching, the Supplier referred to a lack of readings (including Change of Supplier readings), an increased risk of disputed Change of Supplier readings if each Supplier provides readings from different meters, and an increased risk of disputed bills if the address differs from the customer's expectations.

A switching service reported that about 10% of customer applications are rejected or cancelled. They note that feedback from Suppliers on failed applications is inconsistent.

Suppliers, Shippers, GTs, IGTs and Distribution Businesses incur the costs of processing address queries. These include processes to resolve (and where necessary) correct inconsistent views of address data.

A Distribution Business reported their latest monthly figures for address changes proposed by Suppliers as 60 rejections out of a total of 2,000 (3%). If unchallenged, the proposed changes could have resulted in delays to the Change of Supplier process. Another Distribution Business estimated that 10% of address amendment requests from Suppliers are either rejected or require further information. One of the main reasons for queries or rejections is that acceding to the request from the Supplier to change the address would break a UPRN match and leave an address unmatched.

A Distribution Business reported that they employ four Full Time Equivalents to carry out their address maintenance process.

A GT responded that poor quality addresses result in a lot of unnecessary administration effort when investigating Gas Safety (Installation and Use) Regulations disconnections, shipperless and unregistered sites and theft of gas situations. Processes to terminate the MPRN on disconnection of a service need manual intervention to ensure that the correct MPRN is selected. Discrepancies between asset records and the MPRN record result in around 3,000 site surveys a year (at an estimated cost of £70-100k per year) to confirm if the property has a gas supply and the status of that gas supply. Another GT reported that they needed to make 350 manual address updates in the first quarter of 2015, following specific investigations, including site visits. This had increased from 200 in the same period in 2014.

An IGT noted that poor address data quality results in system investigations, cross-business consultations and site visits to clarify installations at an approximate cost of £5 to £10k per annum.

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During one of the UNC Distribution Workgroups reviewing UNC modification 0468, large GTs estimated that address data queries from Shippers ran to about 75,000 per year.

6.3 Best practice

The consultation asked for details of any controls that respondents have applied successfully to reduce the extent of address data quality problems.

Distribution Business and (I)GT practices include:

- checking address updates proposed by Suppliers against Royal Mail/Ordnance Survey data to ensure that incorrect updates are not applied (this includes not applying address changes that would result in a UPRN-matched address becoming unmatched);
- weekly reporting of incorrect address data;
- contacting Suppliers, who have direct contact with the consumer, to request the address details they hold;
- using Ordnance Survey's AddressBase product to help maintain address sets (noting that achieving a complete match between PAF data and the address data with AddressBase is challenging);
- proactive co-ordination with ICPs, developers and local authorities to obtain P2P information (and property conversion/renaming details) as early as possible;
- checking P2P updates in the context of other plots and postal addresses in the same vicinity (liaising with the network services teams and Suppliers);
- using MSNs to resolve P2P ambiguities;
- requesting a PAF validated address on acceptance of a new connection quotation, when not available at the time the quotation was requested; and
- checking to ensure that once a development project is marked as completed, no plot addresses are held in internal systems.

GTs noted that they have invested time and cost in investigating shipperless and unregistered sites; including reviewing cancelled projects, removing duplicate MPRNs, cleansing plot addresses to PAF addresses and site visits to check MSNs to MPRN addresses. However, these data cleansing activities only address the legacy issue and P2P issues continue to arise.

A Supplier noted that co-operative objections or the registration withdrawal process could be used to prevent Erroneous Transfers under the electricity arrangements, if identified early enough.

Another Supplier cited increased customer contact and improved internal processes to ensure that accurate data is used when acquiring new customers.

Examples of best practice in the sales process are included in Section 4.4.

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7. SOLUTION OPTIONS

7.1 Introduction

This section considers potential changes that industry could make in the shorter term, pending the proposed implementation of the CRS. The two options described below are incremental rather than alternatives. Option A describes the use of the UPRN and associated address database products to cleanse the existing registration data and provide better address lifecycle management on an enduring basis. Option B extends Option A to use the UPRN as an industry wide identifier to associate electricity MPANs and gas MPRNs.

The ADWG discussed a number of other options, as described in section 7.4. Options such as labelling the Meter Point/ECV are stand alone and could be implemented independently of Options A and B.

7.2 Option A

7.2.1 Description

Option A is to progress and implement the two gas modifications (UNC Modification 0468 and IGT UNC Modification 056) and to raise an MRA Change Proposal to progress and implement a similar change for the electricity market.

The requirements would be on GTs, IGTs and Distribution Businesses to populate the UPRN for all MPRN/MPANs (new and existing). Like the gas modifications, the MRA Change Proposal would not specify the use of a particular address database product. The use of such a product would, however, be implied by the need to allocate UPRNs accurately to existing Metering Points.

There would be no requirement to make the UPRN available to other industry participants (other than the DCC, which is already an MRA and SEC requirement, where the registration system holds the UPRN).

The Change of Supplier sales process would continue to use addresses rather than UPRNs.

7.2.2 Benefits

The objective would be to improve the quality of address data in a number of ways:

- Gas and electricity addresses should match, if both derived correctly from the same UPRN, so should yield dual fuel benefits;
- Registration data should be more up-to-date in terms of address lifecycle management – e.g. reflecting plot-to-postal changes, the merging and splitting of properties, and street renumbering and renaming;
- Registration data would be more accurate in terms of the relationship between units of occupation and parent sites; and
- Registration data would be easier to maintain for sites without postal addresses (such as mobile phone masts), which are not included in the PAF dataset.

GTs, IGTs and Distribution Businesses would need to use an address database product to realise the above benefits. As part of the initial population of UPRNs, they would need to resolve any ambiguities in existing addresses in order to allocate the correct UPRN. As such, adopting UPRNs brings the additional benefit of enforcing initial data cleansing (although, conversely, it requires reasonably “clean” address data to be feasible).

The improved quality of addresses should feed through to industry and to switching sites (via third parties using industry data). Switching by address should be more robust, if the gas and electricity addresses have been cleansed using the UPRN and associated address database product. There would also be benefits for registration services in terms of reducing the number of address queries and/or the time spent resolving them (usually manual work and sometimes requiring site visits).

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These benefits can be realised without the need to transfer the UPRN to Suppliers/Shippers and without the additional costs that this would entail (See Option B). This is because Suppliers/Shippers will be able to rely on the accuracy of the addresses held in the respective industry registration systems as being unique and accurate.

University College London Energy Institute has carried out an exercise to match electricity and gas supply points to UPRNs on behalf of DECC. They note that AddressBase users need a good understanding of the parent/child UPRN concept to carry out effective address matching. In general though, respondents were positive about the address lifecycle management benefits of AddressBase once the UPRN has been firmly established.

A Distribution Business noted in its consultation response that, while the UPRN is not a perfect data set, it is a common single independent identifier for approximately 30 million premises. AddressBase is already being used by a wide range of organisations, including local government, water companies and insurers.

Another Distribution Business considered that use of UPRNs and AddressBase has the potential for industry benefits over and above those internal organisational benefits of better managing the network. The respondent added that, with the rollout of smart metering and the introduction of the DCC, this is the time to ensure that there is consistency across the market.

7.2.3 Costs and timescales

A Distribution Business quoted cleansing and implementation costs of about £300,000, with annual AddressBase Premium fees in the region of £50,000 (for a geographically restricted licence). They initiated their project as part of a wider asset management program and it currently does not include the application of the UPRN during the MPAN creation process, which would incur further costs.

A common theme, particularly in the responses from IGTs and IDNOs, is that they would bear disproportionate licensing costs. The costs of licensing and data cleansing would be higher (not geographically restricted) and need to be absorbed across a portfolio with fewer supply points leading to a higher costs per supply point. Owing to the funding mechanisms that are in place for IDNOs and IGTs it was suggested that they would also not receive the full pass through of costs allowed to the GT or DNO. One respondent suggested this might be at odd with Ofgem's responsibility to allow licensees to finance their activities. This would act as a barrier to competition in gas transportation and electricity distribution, discourage new entrants and reduce the cost efficiency of smaller businesses. IGT and IDNO respondents suggested negotiating an industry-wide AddressBase licence, with the costs of the licence distributed among participants on a per supply point basis. IGTs and IDNOs estimated that they would need at least 12 months to rectify issues for existing supply points and would need additional resources to introduce the enduring maintenance processes.

Respondents who are already using UPRNs described the difficulties of matching all MPAN/MPRNs to the relevant UPRN. There would be significant cost and resource implications in matching the difficult last 10-15%. A Distribution Business quoted costs in the region of £100,000 for largely automated matching of the first 85%. The remaining 10-15% would cost an estimated £2 to £5 per MPAN, at a cost range of between £2.4m and £6m, and would take two to three years to complete. A third party address-matching specialist observed that, if only 5% of 30 million addresses had to be matched manually, this would take around 30 man years at an ambitious two minutes per match.

In order to fully realise the benefits of UPRNs, GTs and Distribution Businesses would need to implement changes to other systems (e.g. new connections and asset repositories), at an additional cost. A Distribution Business estimated that changes to new connections systems and processes to capture UPRNs in the new MPAN cycle would cost in the region of £150,000.

Individual business may also need to develop or procure additional systems to extract and make sense of the raw data provided by AddressBase in order to interface with their existing systems.

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A respondent noted that UPRNs/AddressBase are already in use by a number of network operators and industry parties are already incurring the cost of providing PAF addresses, which do not cover all meter point addresses.

7.2.4 Impacts and risks

The ADWG noted that UPRNs are likely to be less reliable (or to be allocated less reliably) in atypical circumstances (particularly in the pre-build stages and for multi-occupancy properties). This carries the risk that categories of site that are currently susceptible to Erroneous Transfers, could be the same sites for which UPRN allocation is less certain.

Although a number of Distribution Businesses are already allocating UPRNs, there is little industry experience to-date of the use of UPRNs in the new connections process. As such, consultation respondents expressed a range of views. One respondent noted that UPRNs should significantly reduce the risk of erroneous or missing plot-to-postal updates. Another respondent observed that the UPRN is 'anchored' at the point at which physical works begin at a site, so should be available before an MPAN/MPRN is allocated, a meter is fitted or a customer occupies the premises.

Other respondents were less confident in the use of UPRNs to resolve plot-to-postal issues. A counterview was that, as both MPAN/MPRNs and UPRNs are allocated in batches before being assigned to a fixed postal address, they are open to the same risks. Respondents noted that UPRN allocation is dependent on local authorities, so cannot be relied upon in all areas. The way that UPRNs are allocated for new premises and the timescales in which Ordnance Survey publish them (every six weeks or twelve weeks if a change misses a batch) does not provide sufficient certainty that use of the UPRN will resolve plot-to-postal issues. One respondent suggested that Royal Mail's 'Not Yet Built' product might include new builds ahead of AddressBase. Combined with other Royal Mail products, such as 'Multiple Residence' and 'Alias', this could present a viable alternative to AddressBase. Another respondent suggested that, if it is not possible to link a UPRN with a plot address with any confidence, the use of the additional data item in the new connections process could cause more issues than it solves.

The experience of early adopters of the UPRN and AddressBase is that automatic matching of existing addresses is largely successful for the first 85-90% of database records. This could lead to a false reliance on the accuracy of UPRNs, false positives in terms of matching records, a potential unwillingness to make corrections once a UPRN has been allocated and hence continuing address problems. The last 10-15% would be difficult and costly to resolve and subject to manual errors. Address matching may be difficult for some addresses where different data is held in one or more components of the address, or where different components are held in different fields.

Respondents noted that DECC had commissioned a matching exercise between electricity and gas addresses and had achieved a 90-96% (figures vary) match without recourse to the UPRN. They questioned whether using the UPRN would help achieve 100%.

One respondent proposed breaking down the requirement in Option A into two separate obligations:

- To require all network operators to populate the UPRN for all new connections by the end of 2018; and
- To require all network operators to cleanse their existing data to achieve a target MPAN/MPRN to UPRN match (e.g. 95%), by the end of 2018.

A Supplier observed that the benefits of improved address data quality would only be realised in full, if address updates are disseminated quickly and efficiently, and appropriate processes are in place to de-link and correct UPRN-MPAN/MPRN matches that have been made in error. The six weekly refresh rate of AddressBase data was described as non-standard and too infrequent.

Consultation respondents suggested the following additional risks:

- Incomplete coverage – no data for Isle of Man and Channel Islands;
- Sub-premises (including flats) are not always included; and

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- Poor representation of businesses.

A number of respondents noted that industry processes would need to recognise that:

- Multiple occupancy residences may have one UPRN and multiple MPAN/MPRNs;
- Complex, large industrial premise may have multiple UPRNs and/or multiple MPAN/MPRNs;
- The customer address may be geographically distinct from the meter point (e.g. where a caretaker holds the keys for a number of unmanned sites); and
- Where a property is split into flats, an MPAN may need to be allocated to the parent UPRN (e.g. landlord common services like lighting), so 'historical' UPRNs in AddressBase will be associated with 'live' MPANs.

Two respondents noted that a single supplier solution (i.e. Ordnance Survey) increased the commercial risk, with costs being passed on to the consumer. A respondent noted that the monopoly provision of UPRN matching services would not be healthy and the DCC had already come under scrutiny for its monopoly approach. That said, there would be challenges in providing a unique, national identifier on a competitive basis.

7.3 Option B

7.3.1 Description

Option B builds upon Option A by introducing requirements on registration services to share the UPRN with other market participants.

This would include one or more of the following sub-options:

- Placing an obligation on Distribution Businesses and Gas Transporters to supply the UPRN for each electricity or gas supply point to ECOES / DES;
- Placing an obligation on Distribution Businesses and Gas Transporters to supply the UPRN for each electricity or gas supply point to Suppliers/Shippers;
- Extending the use of UPRNs across the industry to Suppliers/Shippers and potentially agents; and
- Using the UPRN as part of the switching process itself.

This option would need additional UNC and IGT UNC Modifications and an MRA CP to mandate the transfer of the UPRN using the already-modified industry data flows. In the gas market, only those flows for smart meters include the UPRN, so there may be a need to extend the requirement to flows for legacy meters.

If all Suppliers and Shippers need access to address database products (in order to realise the full benefits of UPRNs), there will be significant licensing cost implications. This would be particularly acute, if licensing is on a per-organisation basis. Small players and new entrants would be impacted disproportionately, a point made by both large and small players in their consultation responses.

7.3.2 Benefits of UPRN sharing

There is value in knowing that an MPRN and MPAN are associated at the same address, which can be achieved without having access to the additional address data available through the AddressBase product.

Where the information is available, Suppliers use 'triangulation' to ensure they have correctly identified the MPAN or MPRN to be switched. This is a comparison of the MPAN/MPRN, address and MSN. A UPRN would offer a further control.

The benefit of sharing the UPRN (via ECOES/DES or the direct use of data flows to Suppliers/Shippers) is that dual fuel Suppliers will be confident that the addresses associated with the UPRN are consistent across the two fuels. This will eventually deliver confidence in merging addresses into a single record, if required for next day switching and CRS. Extending the use of UPRNs to all industry users allows for a consistent view of address data and reduces

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the risk of mismatches. A number of respondents noted that it would also be valuable in the mass roll-out of smart meters, to ensure that meters are exchanged at the same time (although it would not be available for the start of the mass roll-out).

The UPRN makes it easier to identify when different users are referring to the same property. It facilitates a view of a customer premise across multiple users and systems. Making the UPRN available to Suppliers could have benefits in terms of matching customer premises across multiple applications and schemes. These might include the smart metering rollout, the Feed In Tariff Scheme (FITS), Green Deal and Theft Risk Assessment Service (TRAS), as well as any future government schemes. In order to realise these benefits, all relevant databases would need to hold the UPRN. They would not need to hold any additional AddressBase data to realise these benefits. University College London Energy Institute has carried out analysis on behalf of DECC in matching industry energy data to data held on non-domestic buildings held in the VOA Rating List. Use of the UPRN would support similar government analyses in future.

7.3.3 Benefits of industry wide adoption of AddressBase

The UPRN will have value to Suppliers as a shared, unique and persistent key. However, Suppliers will not have access to the associated address data without the need for a licence to use an address database product. Without this licence, they would need to take the UPRNs from the GT, IGT and Distribution Business on trust. If the GT/IGT and Distribution Business make UPRN changes at different times, a dual fuel Supplier might not be able to make sense of the change without access to an address database product. Similarly, GTs/IGTs and Distribution Businesses could allocate UPRNs to an incorrect address or to address aliases. For Suppliers/Shippers to successfully validate and challenge addresses within the registration services, it would be more efficient for them to have access to the same address data sources as the GTs, IGTs and Distribution Businesses themselves.

Common use of AddressBase would allow all parties within the data chain to hold consistent data and apply it consistently during all phases of the property lifecycle.

Industry parties that have a dual fuel view of the majority of properties could assist further in the data cleansing work. Arguably Suppliers and their agents have a wider view of address issues, due to closer contact with customers and more frequent site visits.

7.3.4 Benefits of using the UPRN in the switching process

The ADWG noted that it would not be reasonable to expect customers to have to know and quote their UPRN as part of the switching process. However, there could be an option for the customer to provide a UPRN, where known. Alternatively, presenting the UPRN in a 'pick list' of address matches, could help to resolve ambiguities, but the customer would need to know their UPRN and the switching site would need access to UPRN data.

A UPRN could go some way towards mitigating the risk that a switching site presents an address, which does not match industry registration system address records. In this respect, the UPRN would arguably serve the same purpose as an MPAN/MPRN. The ADWG questioned the value of adding another long numeric code into the mix (UPRNs may contain up to 12 digits, MPANs 13 digits and MPRNs 10 digits). Unlike the MPAN and MPRN, the UPRN does not include a check digit.

The benefits of using the UPRN to support a single transfer request to the CRS for dual fuel switching are considered in Section 8.4.

7.3.5 Costs

Ordnance Survey has indicated that AddressBase Premium could be made available for use in supporting and improving the switching process in ECOES and DES for the price of two cross-industry licences. This would mean that market participants with access to the UPRN through ECOES and DES could compare the electricity and gas views of the UPRN without any additional licence implications. Ordnance Survey has advised that such shared use

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would reflect Royal Mail's Closed User Group terms. This would mean that a further £10,000 would be payable to the Royal Mail, which would be collected by Ordnance Survey.

No additional licence fees would be payable to share the UPRN with Suppliers/Shippers, and for retailers to share with their metering agents subject to the proviso above. The relevant electricity flows and (smart only) gas flows have already been modified to allow the UPRN to be passed, but there are no obligations to do so and Supplier/Shipper system would need to be amended to receive and utilise UPRNs.

However, unlocking the address information associated with the UPRN or appending any additional AddressBase fields would require a licence. Extending the use of AddressBase Premium to Suppliers, Shippers and (potentially) switching sites, would result in significant costs. There are about 176 registered gas and electricity Suppliers on the Ofgem website, so the industry wide licensing costs could exceed £30 million per annum, costs that will eventually be passed onto the consumer. One large Supplier provided a high level estimate, based on limited information of £4-8 million. Respondents raised serious doubts about whether using AddressBase at all market participants, in support of an improved switching process, would deliver sufficient benefit to justify costs of this order.

Smaller players and new entrants would struggle to meet the licensing costs, which would serve as a barrier to market entry and potentially restrict competition. One respondent argued that licensing and system costs would be prohibitive for Suppliers in the non-domestic market who have fewer issues with switching and address data quality. If UPRNs were to be used in the switching process itself and additional AddressBase lookups were needed to support the use of UPRNs in the process, licensing costs would also become an issue for switching sites.

A specially negotiated group licence could reduce costs, but would bring its own challenges. A large Supplier argued that sharing the cost of the licences (for what perhaps should be open source data) according to market share, would place a heavy financial burden on the larger companies, who should be rewarded for their contributions to building the quality, coverage and commercial value of the UPRN and AddressBase assets.

Respondents were generally consistent in the view that any proposition to extend the use of UPRNs should be subject to its own cost benefit assessment. This should be compared with that for Option A, to test if there is any incremental net benefit.

7.3.6 Impacts and risks

If the UPRN is used as a cross-fuel identifier, it will only improve data quality if allocated and applied correctly. Although it should improve data quality or data matching, it will not eradicate these issues completely.

There is a small risk that the UPRN is incorrectly matched by either the Distribution Business or GT, with the result that the Supplier is presented with different UPRNs for the same customer. If the electricity and gas supplies are at different locations (e.g. on large sites), this would be no cause for concern. Otherwise, the Supplier would need to investigate the inconsistency with both the Distribution Business and the GT. An AddressBase licence would allow the Supplier/Shipper to carry out its own investigation, but this small benefit would not go far in justifying the price of a Supplier/Shipper licence.

A respondent identified a risk that, without industry wide adoption of UPRNs, a party without a licence could amend a previously verified UPRN address, matching it to data received from the customer and undoing the benefit of the UPRN-matched address.

Option B builds on Option A and would require industry wide code changes and system changes. It could not be delivered in short enough timescales to deliver switching improvements in the near term. Implementation would be too late to offer any benefits ahead of the start of the smart rollout (although this is equally true of Option A).

Even if AddressBase were widely used across the industry, there would be challenges in synchronising updates to ensure that consistent data was held across all parties. A switching site suggested that moving responsibility for identifying the correct meter or address information away from Suppliers could lead to unclear accountabilities.

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Section 8.4 considers the use of the UPRN in the switching process.

7.4 Other Options

The following alternative options were discussed by the ADWG and/or suggested by consultation respondents.

7.4.1 Alternative key

The ADWG considered using an alternative key to the UPRN to associate the electricity MPAN and gas MPRN. Suppliers could use this as a reference in customer billing. However, it noted that the benefit of the UPRN was not just as a common identifier, but also as a key to unlock spatial data from a number of sources – including local authorities, the Royal Mail and Ordnance Survey. The ADWG did not consider this a viable solution.

7.4.2 Promoting the MPAN/MPRN in the switching process

The ADWG also discussed whether the switching process could make better use of the MPAN and MPRN, for example by making it clearer on customer statements. The ADWG believed this could be a viable alternative to using the UPRN within the switching process.

Switching sites may request MPAN/MPRNs from customers in order to resolve address ambiguities. Customers may not know where to find their MPAN/MPRN or understand its format. They would find it easier to confirm their MPAN/MPRN if they were referred to in a consistent way, were displayed more consistently and prominently on customer bills and made available to new tenants (for example in Energy Performance Certificates). Another benefit of the MPAN/MPRN to switching sites is that it identifies an energy region more accurately than a postcode, so supports more accurate price comparisons for customers on energy region borders.

A Supplier suggested that switching sites could make more use of MPAN/MPRNs, noting that a customer using a switching site may also have online bills a mouse-click away.

7.4.3 Switching site access to data

One respondent advocated increased collaboration between industry participants to enable the free sharing of data. This could include dissemination and storing of alias data and improved access for switching sites to industry data, in particular allowing access to ECOES and DES data. A switching site noted that when the plot number for a new build is replaced by a postal address, it could take a significant amount of time for the change to reach them, increasing the risk of customers not being able to find their address on drop-down lists.

Switching site respondents suggested that they could improve their validation processes with direct access to ECOES and DES data. Previous requests for access to ECOES by switching sites have been rejected because they failed to match the access assessment criteria. The criteria would need to be amended to allow future access, subject to a full review of the data protection implications.

The ADWG noted that registration data is already being passed to switching sites by third party intermediaries. The Group agreed that it would be beneficial to introduce a consistent and timely method for making data available to switching sites and that there should be more transparency about the provision of data than there is currently.

A respondent suggested that modernisation of existing resources, such as ECOES and DES, could facilitate automated matching by Suppliers as well as switching sites.

The ADWG believed this option merited further investigation by Ofgem.

7.4.4 Improvements to the new connections process

A Distribution Business suggested further consideration of mandating the use of postal addresses when creating MPAN/MPRNs for new builds, rather than allocating them to plot addresses. Any review would need to consider the implications for customers and developers.

An IGT/IDNO proposed that Suppliers should mandate the postal address at site completion.

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An alternative solution would be a marketing drive with the developer community or a change to the Building Regulations to emphasise the importance of providing postal addresses and UPRNs rather than just plot addresses.

Xoserve commented that improvements to the conversion of plot addresses to postal addresses could be made by changing the data flows between the local authority, Gas Transporter and Xoserve.

The ADWG believed this option merited further investigation by Ofgem.

7.4.5 Labelling the ECV / cut-out

One of the recommendations of the 'Cross Gas Codes Final Report on Industry Data Quality, Ownership and Governance'² was to strengthen the current 'best practice' requirement to label ECVs in the Institution of Gas Engineers and Managers (IGEM) Standard TD/4. This would help to resolve crossed meters (particularly at multi-occupancy sites). The 'Electricity Data Quality Report'² also recommended further analysis of the costs and benefits of mandatory labelling of the Meter Point (cut-out) with the MPAN.

Respondents provided mixed views on labelling, noting that it had been considered and rejected previously. A number of respondents advocated further consideration. One suggested introducing labelling for new builds and then cascading to existing supplies if successful. Another respondent recommended the use of labelling as mitigation against crossed meters, an issue which using UPRNs will do little to resolve. It could also help to resolve some plot-to-postal issues, as a label provides a 'static' reference to the property, unlike MPAN/MPAN and UPRN that can move during the construction process. Conversely, another respondent noted that a developer could move an MPRN/MPAN label to another property, because they do not fully understand the importance of the retaining the MPRN/MPAN to the property. Alternatively, at the construction of a gas manifold, the gas safe engineer could lay a pipe to a different property because it was an easier route.

A number of respondents suggested that the smart roll-out represented an opportunity for labelling ECVs/cut-outs, although it has been previously argued in other industry groups that this should be a network operator rather than meter operator/meter installer. In multiple occupancy blocks the network operator may not own the cut-out at individual sub-premises.

Other respondents noted that:

- Labelling the ECV is only beneficial if labels are correctly assigned in the first instance and that experience in the gas market has shown that labels are incorrectly applied, swapped or lost, at the cost of further confusion;
- In multi-occupancy buildings, with interior risers routing cables from a shared meter room (e.g. in the basement) to individual customers' flats, crossed meters can arise due to the cable being misdirected on its path through the building, even if the cut-outs or meters are labelled correctly;
- Network operators need to carry out site visits to replace incorrect or swapped labels;
- There are likely to be 'smarter' ways of providing this information, for example via In Home Displays (IHDs), Quick Response (QR) codes or mobile phone apps;
- Meter technical details could include Global Positioning System (GPS) co-ordinates for meter locations;
- Electricity connection points may support separate import/export or twin-element MPANs, which can be added or removed, presenting a challenge in keeping labels up-to-date.

Given the mixed responses from consultation respondents, ADWG is not recommending that this solution is progressed.

7.4.6 Data cleansing

The group also considered whether registration services could carry out an address data cleansing exercise without the need for a UPRN (for example, an 'offline' comparison between gas and electricity data). Any data cleansing

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exercise would need a view of a 'correct address' to cleanse to. By associating local authority and PAF addresses using a persistent key, the UPRN (and associated address database) offers a target for cleansing. However, this would not necessarily preclude 'offline' data cleansing using address database products other than Ordnance Survey's AddressBase.

The ADWG also noted that the installation visits during the smart metering rollout would present an opportunity to check MPAN/MPRN and address data. Existing data flows and processes could be enhanced to support updates arising from smart installation visits. Installers will need to carry out checks to ensure that the MPAN/MPRN associated with the smart meter at a customer premises is the correct MPAN/MPRN for that customer. The challenge will be to ensure that when installers discover inconsistencies in existing registration data, the associated Supplier ensures that the registration data is corrected.

One respondent suggested that routine meter inspections could include an additional requirement to confirm address information and report to the CRS, although Ofgem has recently consulted on repealing the licence condition on meter inspections.

The ADWG did not recommend progressing this solution.

7.4.7 Standard address format

A Supplier proposed that both fuels should use a consistent and agreed single address for any premises, and that this should be introduced as part of the CRS development. One respondent recommended standardising to the SAF, another to PAF. See also Section 8.3 for further arguments.

The ADWG did not recommend progressing this solution.

7.4.8 Procedures for address maintenance

One respondent recommended that improved governance around address maintenance should be introduced and enforced. In particular, the old Supplier is still accountable for correcting address errors and should be responsible for assisting a customer to transfer to a new Supplier.

An alternative solution would be to improve the ability of Suppliers to raise address changes in parallel or prior to registration.

Other respondents suggested an industry audit to ensure that addresses are being used and updated correctly and exploration of monitoring Supplier performance in disseminating address data through the standard industry flows.

The ADWG did not recommend progressing this solution.

7.4.9 Address validation

ElectraLink manages the Data Transfer Service (DTS), which electricity market participants use to exchange information. In 2012, DTS users granted Electralink access to capture and analyse DTS data flowing across the DTN in order to provide stakeholders with analytics, insight and reporting. This data includes the data flows used in the Change of Supplier and address maintenance processes. ElectraLink performs basic syntactic validation on these flows, but also offers enhanced validation options, which are not currently used by most industry parties. This enhanced validation could be used to highlight missing address components or badly structured addresses. A potential challenge to this approach would be addresses without PAF equivalents such as mobile phone masts and 'pseudo' MPANs for unmetered supply inventories, which do not have conventional addresses.

The existing validation could be improved. For example, the DTS could compare any flow containing address data (including UPRN) to ECOES and/or AddressBase data and raise exceptions for Suppliers or Distribution Businesses to investigate.

The ADWG did not recommend progressing this solution.

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7.5 Consultation respondent preferences

The consultation asked respondents for their preferences in terms of Options A, B and other solutions. The preferences are shown below along with respondent comments.

Option	Respondent preferences	Comments
A	7	<p>Option A offers a more cost-effective way to improve the quality of addresses in registration systems, which by extension will improve data quality in other industry systems and processes. The incremental benefits of Option B are unlikely to justify the additional costs, which will fall on consumers. Option B will also be a barrier to competition because of the costs it imposes on smaller Suppliers and new entrants.</p> <p>Option A will deliver shorter-term benefits. Option B is a longer-term option (on moving to the CRS). There is a risk of redundancy if large scale changes are made to industry systems ahead of the CRS.</p>
B	6	<p>Respondents supported sharing the UPRN more widely than just the registration systems, subject to this being permissible under the Ordnance Survey licence terms, which it appears to be.</p> <p>There was less support for industry-wide adoption of AddressBase as the cost-benefit is unclear.</p> <p>Consultation respondents also expressed reservations about the use of the UPRN in the switching process itself.</p> <p>Proponents of Option B cited the additional benefits of wider industry visibility, further levels of control over address data quality and a view that a universal approach is needed to facilitate customer engagement and faster switching.</p> <p>Suppliers have a part to play in ensuring that data is correct, as the likely first point of contact for consumers. It would be better to implement through the CRS, as this is the most efficient means of updating address data across both gas and electricity.</p> <p>Option B needs to be implemented alongside standard address management processes, improved collaboration between industry and local authorities and controlled data sharing by Suppliers/Shippers. Ofgem needs to drive incentives.</p>
Other	11	<p>Allowing Third Party Intermediaries access to ECOES/DES.</p> <p>Improving how data enters the industry.</p> <p>Changes to Building Regulations to encourage postal addresses and UPRNs rather than plot addresses and a stricter dependency on postal addresses when issuing MPAN/MPRNs.</p> <p>Labelling of ECV / Cut-out (two respondents).</p> <p>Short-term data cleansing (with Options A/B as longer term aspirations).</p> <p>Data cleansing by network operators, populating the registration flows with UPRNs and improved sharing of address data. Validation of data exchanges.</p> <p>Resolve existing address data quality with a focus on current systems (ECOES/DES) and capabilities and exploiting the benefits of smart. Consider Options B and C in the longer term.</p>

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Option	Respondent preferences	Comments
		Use of a common postal address. Alignment with Royal Mail database.
None	9	Five respondents did not comment. Four respondents cited a lack of evidence and detailed cost-benefit analysis for not stating a preference at this stage.

A cross-reference between the issues described in Section 6 and the solution options described in Section 7 is included as Appendix D.

7.6 Theft Risk Assessment Service

In 2014, Ofgem made directions under the electricity and gas supply licences to introduce a new, dual-fuel TRAS. The directive requires electricity and gas suppliers to implement a central service to assess the risk of theft at consumer premises and to help target investigations of theft.

Industry has appointed Electralink (under SPAA and Distribution Connection and Use of System Agreement (DCUSA) governance) as dual fuel energy TRAS Project and Procurement Manager. Experian plc has been appointed as single Energy TRAS provider. Experian will develop a dual fuel database, including address data. Suppliers will provide customer address data, which the technical provider will then cleanse, to create a consolidated dual fuel database. The TRAS will use the PAF as its reference point for standardised addresses and a unique Location Identity Number (internal to Experian) for each property.

By the time that the CRS is developed, there could be two dual fuel databases containing address data, the TRAS and the CRS. The focus of the TRAS Project is on implementation, so it is too early to consider whether market participants could use TRAS data to support address data cleansing and the transition to the CRS. Industry would need to consider further issues such as data ownership, data protection and development timelines and costs. Statistics on the quality of address data, derived from the TRAS population exercise, could help inform any further data cleansing work for centrally held address data and the development of the CRS.

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8. CENTRALISED REGISTRATION SERVICE

8.1 Background

Ofgem has set out the Target Operating Model (TOM)⁹ for its work programme to implement reliable next-day switching on a CRS, governed by the SEC and managed and operated by the DCC. Ofgem proposes to lead a programme of work, starting in November this year, to deliver these policy proposals for consumers by 2019.

In its open letter of 24 March, Ofgem asked the dual fuel working group to provide views on how faster switching using centralised registration can be designed to maximise data quality. The ADWG considered and consulted on the following questions:

- should the CRS hold separate, unlinked electricity and gas addresses, separate electricity and gas addresses linked by a UPRN or alternative identifier, or hold a single address?
- to what extent would a common address format support the above options and which format would be most beneficial?
- to what extent would a UPRN or common address format support the aim of sending a single transfer request to the CRS to coordinate the switching of both gas and electricity supply points?
- what are the potential benefits of the UPRN as part of the new connections process?
- what are the benefits and risks of implementing the solutions in Section 7 ahead of the CRS, as opposed to incorporating such changes as part of the Next Day Switching programme?

Section 8.2 to 8.6 below summarise the ADWG's considerations and the consultation responses.

8.2 Electricity and gas addresses

The consultation requested views on how best to manage address data within the proposed CRS in order to realise faster and more reliable customer switching.

In order to control access to smart meters by registered Suppliers, the DCC will hold registration data from 2016 onwards. The DCC will populate its registration data by daily updates from the current electricity and gas registration systems. The relevant electricity and gas data flows allow for the inclusion of both address data and UPRNs. The DCC will hold separate records of the addresses associated with the electricity MPAN and gas MPRN. This address data will allow single fuel Suppliers to query whether the 'other Supplier' has already installed a communications hub at a customer premises.

As part of the CRS design, Ofgem and the DCC will need to consider whether the CRS:

- continues, as at go-live, to hold separate, unlinked electricity and gas addresses;
- associates separate electricity and gas addresses by a common network address and/or UPRN, or other identifier); or
- combines them into a single address per premise.

A single address would:

- better align with Ofgem's aspiration to "simplify and harmonise the gas and electricity switching arrangements where possible".

However, there would be a number of challenges that would need to be overcome:

⁹ [Moving to reliable next-day switching: Consultation on Target Operating Model and Delivery Approach](#) (10 February 2015)

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- If a common gas/electricity postal address format and/or a UPRN for both fuels are pre-requisites of CRS population, cleansing could present a risk to the timely delivery of the CRS. In the case of a common address format (see also Section 8.3), standardisation in advance of the CRS would have significant impacts on either or both markets (with over 30 million electricity addresses and/or over 23 million gas addresses potential needing to be reformatted);
- There may be a need for a fundamental redesign of the new connections process (as discussed further in Section 8.5);
- There would also need to be new governance arrangements around address maintenance, given that separate electricity and gas suppliers, a Distribution Business and Gas Transporter could all have an interest in the same address; and
- Some addresses may not lend themselves to the 'single address' approach. There may be a small number of cases, at large and/or rural locations, where the electricity and gas supply points for the same customer are geographically distinct, with separate addresses and UPRNs. Attempts to unify such sites may lead to the loss of critical information.

A number of respondents commented on the need for the CRS to accommodate more complicated MPAN/MPRN – UPRN – address relationships:

- The CRS design should consider the needs of all customer groups – Small and Medium-Sized Enterprises (SMEs), Industrial and Commercial and pre-payment – rather than just focus on the delivery of next-day switching to domestic customers; and
- The CRS design will also need to accommodate import and export MPANs at the same UPRN and related MPAN/MPRNs. Virtual MPANs, used for unmetered supplies could not be easily associated with a UPRN because they relate to an inventory of lighting and street furniture across a geographically dispersed area.

An alternative to a single address, would be to link the gas and electricity addresses held in the 'Day One' DCC database as soon as the link can be made confidently.

The communications hub network address will provide a link between all devices on the same Home Area Network (HAN). In many cases the HAN will be at a single premise with a single UPRN, an electricity MPAN and a gas MPRN (although a HAN may cover more than one premise at multiple occupancy locations). The UPRN would provide an additional spatial reference to link the electricity MPAN and gas MPRN. The DCC could validate that the MPAN and MPRN associated with the smart electricity meter and smart gas meter respectively which share a communications hub, also have the same UPRN. This would help avoid crossed meters.

Consultation respondents highlighted a number of considerations in relation to linking separate gas and electricity addresses in the CRS:

- If the CRS holds separate gas and electricity addresses, the address maintenance processes will need to take into account what happens when one of the addresses is updated;
 - Should the change automatically be reflected in the other address (assuming that they can be linked) or notified to interested parties?
 - Alternatively, once the gas and electricity addresses are linked by a UPRN, the address could be set to the local authority, Ordnance Survey or PAF address and only updated thereafter by PAF or AddressBase updates applied by the DCC;
- Once electricity and gas addresses are linked, they could subsequently be merged. This approach could allow for a smoother transition than pre-cleansing followed by a "big bang" implementation. However,

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some of the existing inconsistencies may persist into the early days of the CRS putting next day switching at risk.

Holding a 'master address' for each property need not preclude holding additional addresses. The CRS offers an opportunity for the central storage of alias addresses, which could support improved switching arrangements. AddressBase allows users to record additional addresses or aliases, such as vanity addresses, alongside the local authority Address and PAF address. However, it is usually the Supplier, rather than network operator, who holds the vanity address and, as noted in Section 7.3.5, the licence costs of Suppliers holding AddressBase Licences are likely to be prohibitive. Additionally, the vanity addresses would not be carried forward on Change of Supplier. The sharing of Supplier/Shipper data, subject to any data protection issues, could help with address matching. Holding alias addresses in CRS could help achieve this.

8.3 Common address format

The consultation requested views on the extent to which a common address format would support the alignment of electricity and gas and which address format would be most beneficial.

If the CRS uses a single premise address with MPAN and MPRNs associated as 'child records', it would make sense for all addresses to be of the same format.

Proponents of the PAF format (a majority of consultation respondents) argued that:

- The PAF is a national standard (unlike the SAF format which is electricity specific) and is used, for example, in the insurance and banking industries;
- The flows built for Project Nexus have been built to match the PAF;
- PAF is the more detailed and structured format and so better suited to automated address matching;
- As a Royal Mail standard, the PAF is more pervasive and more familiar to consumers;
- PAF is more widely used by price comparison/switching sites; and
- The Royal Mail address provides an independent 'master record' outside the industry.

Proponents of the SAF format (a minority of consultation respondents) argued that:

- The SAF is a vastly superior format as it allows for an identifier in the first row for an unmanned site and has fewer file options, reducing the risk of choosing the incorrect sub-category;
- Use of the PAF format would require changes to the DTN, which doesn't support the complete PAF character set;
- SAF is more widely used, due to the higher number of electricity MPANs relative to gas MPRNs;
- SAF lends itself better to the energy market by accommodating sites without postal addresses (including new builds that have not yet been given a postal address); and
- SAF is closer to the address format a customer would recognise.

One respondent expressed a preference for standardising on Ordnance Survey Address Base Premium format. Another recommended holding addresses in 'atomic' form (with separate building, street and locality details) and including additional data such as source flags and alternative keys, such as UDPRNs. A third suggested that the design of the CRS address format shouldn't be constrained by currently used formats.

Whichever common address format is agreed on, there will be significant costs to amend either electricity addresses to PAF or gas to SAF. These costs could potentially be avoided by merging addresses within the CRS using a UPRN and then recording the PAF address (or Ordnance Survey address, as applicable) associated with the UPRN.

Aligning flat addresses, particularly in Scotland, will be challenging, because of the different conventions used.

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The ADWG agreed that at this time address formats for gas and electricity did not need to be aligned to a common format.

8.4 Single transfer request

Ofgem's 'Moving to reliable next-day switching' TOM, paragraph 7.09, proposes that "a gaining supplier will be able to send a single transfer request to the CRS to coordinate the switching of both gas and electricity supply points". The ADWG consulted on the extent to which the UPRN and/or common address format supported this aim.

Using the UPRN to support a single transfer request from the customer appears fraught with difficulties, as described below. A single transfer request from the Supplier to the CRS, based on a UPRN, would also appear to be of limited value.

If the transfer request includes the UPRN, it would need to be clear about which fuel(s) the customer wanted to switch and, in the case of electricity, whether the customer wants to transfer import, export or both. There could be a number of MPAN/MPRNs with the same UPRN. Meters in shared meter rooms would have the same UPRN. Conversely, gas and electricity supplies for the same customer could have different UPRNs. In this respect, the UPRN appears to offer no advantages over the MPAN/MPRN.

Consultation respondents noted the following risks:

- Consumers are not aware of their UPRN and it would take a costly campaign to make them aware (potentially including the cost of including the UPRN on bills);
- Moving home is a strong trigger to switch (20% of transfers according to one switching site) and these customers would be less likely to know their new UPRN (even after an awareness campaign and inclusion on bills), although this risk could be mitigated by including the UPRN in Energy Performance Certificates;
- The timing issues in relation to providing PAF addresses and postcodes for new builds would apply equally to UPRNs;
- Using the UPRN at switching sites would not resolve issues such as customers picking a wrong address from a list or customers inadvertently switching;
- The introduction of a new data item could create additional confusion for consumers (who may already be asked for an MPAN/MPRN and/or MSN) and increase the risk of Erroneous Transfers;
- Further complications to the switching process, through the addition of another data item, could deter consumers from switching;
- The lack of check digit in the UPRN creates a data entry risk;
- Using the UPRN as the main data source in the transfer process at this point is risky, given that there is no evidence as yet to demonstrate the quality of the data associated with it;
- The immediate nature of next-day switching leaves no margin for error, so a UPRN-based transfer request would only work where there was complete confidence in the UPRN-MPAN-MPRN mapping.

Respondents were, however, more confident in the use of the UPRN to improve triangulation. Including the UPRN, MPAN/MPRN and address in a single transfer request would offer more validation options. However, if the MPAN/MPRN and address were all correct, but the UPRN had been incorrectly mapped, a customer transfer could be delayed unnecessarily. Arguably, this would allow the UPRN to be corrected, improving the customer's next transfer (if they had not been put off from switching).

The ADWG did not believe that using the UPRN or common address format to support a single transfer request from the customer would be beneficial.

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8.5 Use of UPRN in CRS new connections process

The consultation asked for views on the potential benefits of the UPRN as part of the new connections process (i.e. creating linked MPAN and MPRNs within the CRS) and the process and governance implications.

Holding a single address would reduce the burden of having to maintain what is effectively the same address, in two distinct utility markets. There would, of course, be governance considerations in terms of the shared maintenance responsibilities across the electricity and gas markets. There may be a need for a joint cross-fuel new connections process setting out the respective Distribution Business and GT/IGT responsibilities for initiating (and subsequently amending) the CRS address record. There would also need to be new rules for the processing and communication of Supplier-led address changes to cater for premises with separate gas and electricity suppliers.

The benefits case for mandating the use of the UPRN depends to some extent on what the CRS solution will look like. If the initial population of the CRS needs UPRNs to link electricity MPANs and gas MPRNs, then early population of the UPRN in electricity and gas registration services could facilitate an efficient and more effective transition to the CRS. However, as the target design of the CRS and transition arrangements are, as yet, undefined, it is too early to know whether the pre-population of UPRNs in the existing gas and electricity registrations systems will be of benefit to the CRS. There may, however, be enduring benefits of using the UPRN, which apply equally to the CRS and the existing registration systems. For example, the UPRN could provide value in the new connections process, when the MPAN and MPRN are first created.

A consultation respondent noted that a single address in the CRS was likely to be needed in order for Ofgem to realise its aim of faster and more reliable switching. They acknowledged that this would require a new cross-fuel new connections process. It is likely that the electricity Distribution Business would create the initial address and that the GT would need to identify this address in order to link the MPRN to it. Allowing both network operators to create address entries could lead to duplicate data; something which the CRS should be designed to eliminate.

A consistent theme in the responses to this question was that the CRS would face the same challenges as the current registration systems in terms of 'start of life' address maintenance. However, if the CRS holds a single premise address, subject to a single cross-code new connections process, the UPRN will assist in the matching of supply points, in the event of time lags between the electricity and gas connections.

One respondent observed that the challenge of maintaining the relationship between address/UPRN and MPAN/MPRN is not confined to new connections. Whilst the merging and splitting of properties could be notified to the DCC by local authorities through the use of AddressBase; engineering related activities, such as providing a new supply, removing a supply or moving a supply, will need to be fed through by the GT/Distributor. The two data feeds are likely to occur at different times. When the CRS is introduced, network operators should remain responsible for the UPRN-MPAN/MPRN relationship.

8.6 Relationship between solution options and the CRS

The ADWG consulted on the benefits and risks of implementing UPRN solutions ahead of the CRS, as opposed to incorporating such changes as part of the Next Day Switching Programme.

Consultation respondents noted the benefits of introducing a UPRN mandate ahead of the introduction of the CRS:

- Cleansing address data ahead of the CRS would lead to a more robust system, unencumbered by poor legacy data;
- DECC has already identified benefits in capturing the UPRN within the DCC systems;
- Dual fuel Suppliers could make single transfer requests from go-live;

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- Further address data cleansing after go-live would distract from the CRS implementation;
- Early population of UPRN in existing registration systems ahead of the CRS would provide learning opportunities and give insight into what issues might put the CRS at risk;
- The benefits of the UPRN in terms of address data quality are not dependent on delivery of the CRS.

Some respondents argued that industry should defer a decision on solution until the CRS is implemented, or at least better understood. They noted that there would be risks in introducing the UPRN before the CRS:

- The considerable length of time needed to cleanse data and allocated UPRNs should not be underestimated and could put the implementation of the CRS at risk;
- Introducing a new data item, the UPRN, in an attempt to cleanse data, could upset the current status of data and have a detrimental effect on data migration;
- As it has not yet been agreed that the CRS will use the UPRN, mandating it in existing registration systems could result in wasted resources and costs;
- There is still a considerable amount of work to do in order to be confident that the UPRN will address new connections and switching issues and, given that the 'Moving to reliable next day switching' programme will require a thorough investigation of industry processes, it would be preferable to include any analysis of UPRNs in the Ofgem programme;
- The costs of maintaining address data are ultimately funded by consumers through distribution and transportation charges. A centrally procured and controlled use of the UPRN by the CRS could reduce industry costs, including a reduction in the licensing costs;
- Sharing UPRNs with the wider industry would work best, if a central data registration point were responsible for validating and managing attempts to change the address. This would lend itself to implementation as part of the CRS;
- As the most substantial benefits accrue to dual fuel customers, it would be more cost-effective to administer the use of the UPRN through the CRS, once in place, as the DCC will be able to interface between the two energy sectors; and
- The introduction of the UPRN by the CRS would prevent the duplication of costs that would arise from developing separate gas and electricity solutions. As such, mandating the use of the UPRN ahead of the CRS would not be cost effective.

One respondent suggested that the creation of the CRS should not be delayed by the failure of any Distribution Business or GT to append UPRNs, as this is an address management function that the CRS operator should be able to undertake.

It is not expected that any mandates to use the UPRN in the gas market will be introduced before the implementation of Project Nexus in October 2016. This will prove a window of opportunity to implement changes ahead of the CRS in 2019, if required. It also allows time for Ofgem to provide more clarity on the potential CRS design, following the initial stages of its 'Moving to Reliable Next Day Switching' programme.

The ADWG had mixed views on the timing of any address remedies.

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9. CONCLUSIONS AND RECOMMENDATIONS

9.1 Conclusions

The ADWG has considered the high-level costs, benefits, impacts and risks of introducing a mandate for Gas Transporters, Independent Gas Transporters and electricity Distribution Businesses to populate registration systems with UPRNs for new connections and all existing Supply Points/Meter Points. The UPRN would be used in conjunction with local authority and Royal Mail data to improve the quality of the address data held in the registration systems.

Although there was minority support among consultation respondents for adopting UPRNs, other respondents and the ADWG were cautious about benefits realisation in a number of areas, including:

- whether the allocation of UPRNs in the new-build process would occur early enough to resolve plot-to-postal issues;
- whether UPRNs would resolve the complexities of many-to-many relationships with the MPAN/UPRN; and
- the potential for additional confusion as a result of introducing a new identifier and the risk of false positives.

There were also concerns about the disproportionate costs of AddressBase licences for IGTs and IDNOs and the high costs of allocating UPRNs to the residual pot of MPAN/MPRNs where automated matching is not possible.

It is currently too early to establish any firm benefits in relation to the use of the UPRN in the proposed CRS. The 'Moving to Reliable Next Day Switching' programme is in its early stages and the UPRN may not prove to be the eventual method selected by Ofgem and the DCC to link electricity MPANs and gas MPRNs in the CRS. Even if the UPRN is used by the CRS, there is no conclusive evidence at this stage that pre-populating the UPRN in existing electricity and gas registration systems should be a pre-requisite of the CRS transition arrangements.

As such, the ADWG is not recommending an industry-wide mandate at this point in time. However, the ADWG notes that Distribution Businesses have begun to populate their registration systems with UPRNs and are utilising Ordnance Survey's AddressBase product to varying degrees to help cleanse their address data. The drivers for adopting the UPRN have been delivering improvements in network management and asset management, as Distribution Business have no direct interest in the switching process. UNC Modification 0468 and IGT UNC Modification 0056 are already in progress in the gas market, where the uptake of UPRNs has been slower.

The ADWG has also considered whether the use of UPRNs should be extended to the wider industry (Suppliers, agents and, potentially, switching sites). Distribution Businesses and GTs could share the UPRN with Suppliers/Shippers, ECOES/DES and the DCC under a shared AddressBase licence and this could be considered further once there is more clarity about the CRS design. In terms of industry-wide adoption of AddressBase in all industry systems, the ADWG and consultation respondents broadly agreed that the multi-million pound costs could not be justified by the small incremental benefits the additional checks and balances would bring. Licensing and system costs were likely to be prohibitive for new entrants, smaller players and switching sites, creating a barrier to competition.

The ADWG has considered Ofgem's question about the benefits in using the UPRN in the switching process itself. There was very little support for using the UPRN to drive dual fuel transfers and section 8.4 shows the strength of arguments against it.

Appendix D provides a mapping of the solution options described in Section 7 to the table of address-related issues in Section 6. It is clear from this mapping that there is no 'one size fits all' solution to address all data quality issues.

The ADWG noted that the industry had been active in resolving address data quality issues over the past 15 years and that the residual issues were the most complicated and difficult to resolve.

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Consultation respondents note that there is a small legacy issue of incomplete addresses that could not be easily matched to Royal Mail or Ordnance Survey data. In general, though, the quality of address data is not considered to be poor. Rather, the problems in the switching process, including Erroneous Transfers, arise for a number of reasons:

- plot-to-postal issues caused by the timing of data provision from local authorities and the Royal Mail, coupled with the fact that a large proportion of customers who switch Supplier are moving into new homes (see also Section 6.1 Ref. 4);
- difficulties in keeping pace with the high numbers of address life-cycle changes (e.g. property reconfigurations, building/street renaming and renumbering) across a distributed system architecture (see also Section 6.1 Ref. 5);
- delays in disseminating address changes across multiple parties – the Royal Mail, local authorities, developers, network operator registration databases, Supplier systems, third party intermediaries and switching/price comparison websites (see also Section 6.1 Ref. 5); and
- customers providing incorrect details, inadvertently switching, or being unable to distinguish between very similar address choices (see also Section 6.1 Refs. 8 and 9).

Some types of address, for example in multi-occupancy premises and rural areas, are intrinsically prone to ambiguity. So an address does not readily lend itself to the job of uniquely identifying an electricity or gas supply for the purposes of customer switching. A UPRN, as a persistent key, is perhaps preferable to an address as an identifier. However, as a spatial identifier, it does not uniquely identify an electricity/gas connection point. The MPAN/MPRN offers the safest way to avoid Erroneous Transfers and, as such, the ADWG is recommending that Suppliers should explore ways in which to promote the use of the MPAN/MPRN in the switching process.

Whilst the UPRN will help to resolve plot-to-postal issues, this needs to be coupled with improved new connections processes and encouraging local authorities and developers to provide UPRNs and plot-to-postal mappings at an early stage of development projects.

In terms of the dissemination of registration data, there would be benefit in re-assessing how to make data more readily available to switching sites using ECOES and the DES, whilst meeting the data protection requirements of the ICO.

9.2 Recommendations

The ADWG recommends that:

- a) there should be no harmonisation of address format for gas and electricity at this time, as there are no tangible improvements in address data quality;
- b) no cross-fuel mandate of UPRNs should be introduced at this time, based on the assessment of benefits and costs obtained from the consultation. This is pending clarity on whether the CRS will include the UPRN and, if so, whether it needs to be pre-populated in current registration systems;
- c) Ofgem assesses the arguments for and against mandating the UPRN contained within this report when undertaking the Significant Code Review of next day switching and the design of the CRS;
- d) Ofgem monitors the benefits of the implementation of UNC Modification 0468 and IGT UNC Modification 0056 (if approved) and the voluntary uptake of UPRNs by electricity Distribution Businesses;
- e) Ofgem sponsors the following investigations:
 - i) how data is currently made available to switching services/price comparison websites using Royal Mail and third party intermediaries and whether the timeliness could be improved by providing

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access (subject to a review of the data protection implications) to central industry databases for the validation of customer addresses (see also Section 7.4.3);

- ii) how PAF addresses are used by switching services/price comparison websites (see also Section 7.4.3);
- iii) a review of the benefits and implications of promoting the use of the MPAN/MPRN in the switching process to mitigate against the risk of ambiguities in address data matching (see also Section 7.4.2);
- iv) a review of the new connections process, including the timing of issuing MPAN/MPRNs and how to promote improved plot-to-postal mappings, noting that an improved new connections process is key to the success of the CRS (see also Section 7.4.4).

9.3 Panel feedback

ADWG members presented the key conclusions and recommendations of this report to the relevant industry panels and committees in October and November 2015. Feedback from the panels is described below.

9.3.1 SPAA Executive Committee

To follow.

9.3.2 MRA Executive Committee

To follow.

9.3.3 BSC Panel

To follow.

9.3.4 SEC Panel

To follow.

9.3.5 IGT UNC Panel

To follow.

9.3.6 UNC Committee

To follow.

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Appendix A Address Data Working Group Members

Group Member	Organisation (and role)	17/06/15	22/07/15	23/09/15
Justin Andrews	ELEXON (Meeting Chair)	✓	✓	✓
Jon Spence	ELEXON (BSC Advisor, report author)	✓	✓	✓
Nick Good	Gemserv (Technical Secretary)	✓	✓	✓
Adam Iles	British Gas	✓	✓	✗
Oorlagh Chapman	British Gas	✓	✓	✓
Conrad Steel	Citizens Advice Bureau	✓	✓	✗
Simon Quayle	Data & Communications Company	✗	✓	✓
Colette Baldwin	E.On	✗	✓	✓
Paul Gath	Electralink	✓	✗	✗
Sarah Jones	Electralink (SPAA Advisor)	✓	✗	✗
Ben Haworth	Electralink	✗	✓	✗
Ian Scougal	Electralink	✗	✗	✓
Katy Binch	ES Pipelines, Association of IGTs	✓	✓	✓
Jeremy Guard	First Utility	✗	✓	✗
Carl Whitehouse	First Utility	✗	✗	✓
Kevin Berwick	First Utility	✗	✗	✓
Glenn Sheern	Gemserv (MRA Advisor)	✓	✗	✓
Andy Knowles	Gemserv (MRA Advisor)	✗	✓	✗
Andy Clasper	National Grid	✓	✗	✗
Maitrayee Bhomwick-Jewkes	Npower	✗	✓	✓
Ciaran MacCann	Ofgem	✓	✓	✓
Peat Allan	Ordnance Survey	✓	✓	✓
Alex Ross-Shaw	Northern Gas Networks	✓	✗	✗
David Mitchell	Scottish Gas Networks	✓	✓	✓
Victoria Burkett	Scottish and Southern Energy	✓	✗	✗
Anne Jackson	Scottish and Southern Energy	✗	✓	✓
Paul Carman	Scottish Power	✗	✗	✓
Jonathan Purdy	UK Power Networks	✗	✓	✓
Jane Jones	Western Power Distribution	✗	✓	✓
David Addison	Xoserve	✓	✓	✓

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Emma Lyndon	Xoserve	x	✓	x
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ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Appendix B Glossary

Abbreviation / Term	Name / Definition
ADWG	Address Data Working Group. A cross fuel group tasked with reporting to Ofgem on options for improving address data quality in the context of the proposed CRS.
BLPU	Basic Land and Property Unit. An area of land, property or structure of fixed location having uniform occupation, ownership or function.
BSC	Balancing and Settlement Code
CAG	Corporate Address Gazetteer
COSEG	Change of Supplier Expert Group
CRS	Centralised Registration Service
CSV	Comma Separated Values
DCC	Data and Communications Company
DES	Data Enquiry Service
DCUSA	Distribution Connection and Use of System Agreement
DQWG	Data Quality Working Groups. Two cross-code groups convened in 2014 to report to Ofgem on data quality in the gas and electricity markets respectively.
ECOES	Electricity Central Online Enquiry Service
ECV	Emergency Control Valve
ET	Erroneous Transfer
GT	Gas Transporter
HAN	Home Area Network
ICO	Information Commissioner's Office
ICP	Independent Connections Provider
IGT	Independent Gas Transporter
LLPG	Local Land and Property Gazetteer
MEC	MRA Executive Committee
MPAD	Meter Point Administration Data
MPAN	Meter Point Administration Number
MPAS	Meter Point Administration Service
MPRN	Meter Point Reference Number
MRA	Master Registration Agreement
MSN	Meter Serial Number
OWPA	Objects Without Postal Addresses

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Abbreviation / Term	Name / Definition
P2P	Plot to Postal
PAF	Postcode Address File [®] . Also defined in the MRA as Post Office Address Format to distinguish the address structure from the licensed data file.
PSMA	Public Sector Mapping Agreement
PSR	Priority Services Register
SAF	Standard Address Format
SCOGES	Single Centralised On-Line Gas Enquiry Service (SCOGES), a precursor to the Data Enquiry Service (DES) and still commonly used as an equivalent term.
SPAA	Supply Point Administration Agreement
TOM	Target Operating Model
TPI	Third Party Intermediary
TRAS	Theft Risk Assessment Service
UDPRN	Unique Delivery Point Reference Number. This is an 8-digit code that can be used instead of the current address keys on PAF. A new UDPRN is assigned to each new delivery point added to the PAF. It is unlikely to be used when an address expires.
UIP	Utility Infrastructure Provider
UNC	Uniform Network Code
UPRN	Unique Property Reference Number
VOA	Valuation Office Agency
XML	Extensible Markup Language

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Appendix C Address formats

The table below shows the SAF and PAF address formats and highlights the difference between the two formats.

PAF			SAF				
Element	Field Name	Max length	Line	Data Item	Description	length	Notes
Organisation	Organisation Name	60	1	Metering Point Address Line 1	Free Text	40	Contains 'Unmetered Supply' where relevant. May contain an organisation name.
	Department Name	60					
Premises	Sub building name	30	2	Metering Point Address Line 2	Sub-building Name/Number	40	
	Building Name	50	3	Metering Point Address Line 3	Building Name/Number	40	SAF Address Line 3 concatenates two PAF fields in the form [building name];[building number]
	Building Number	4					
Thoroughfare	Dependent Thoroughfare Name	60	4	Metering Point Address Line 4	Dependent Thoroughfare	40	
	Dependent Thoroughfare Descriptor	20	5	Metering Point Address Line 5	Thoroughfare	40	
	Thoroughfare Name	60					
	Thoroughfare Descriptor	20					
Locality	Double Dependent Locality (small villages)	35	6	Metering Point Address Line 6	Double Dependent Locality	40	
	Dependent Locality	35	7	Metering Point Address Line	Dependent Locality	40	

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

PAF			SAF				
Element	Field Name	Max length	Line	Data Item	Description	length	Notes
				7			
	Post Town	30	8	Metering Point Address Line 8	Locality (Post Town)	40	
			9	Metering Point Address Line 9	County	40	An optional non-PAF element
Postcode	Postcode	7	10	Meter Point Postcode	Postcode	10	
PO Box	PO Box	6					

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Appendix D Problem-Solution cross-reference

Please note that 'yes' indicates that the solution option will contribute to the resolution of the issue to varying degrees. Consultation respondents have indicated the extent to which they believe solution options in Section 7 will resolve the issues in Section 6. See Section 7 for further detail.

Problem/solution	Option A UPRN adopted by network operators	Option B shared UPRNs	Option B industry-wide adoption of address products	Option B UPRN in switching process
Inconsistent gas/electricity formats	No	No	No	No
Inconsistent gas/electricity address contents	Yes (if UPRNs allocated consistently across fuels)	Yes (and identifies where UPRN applied inconsistently across fuels)	Yes (and allows Supplier investigation where UPRN applied inconsistently across fuels)	No
Incomplete address data	Yes (to the extent that data needs to be cleansed to assign UPRN)	Yes (to the extent that data needs to be cleansed to assign UPRN)	Yes (to the extent that data needs to be cleansed to assign UPRN)	No
Plot-to-postal issues	Yes (subject to timing of local authority /AddressBase updates)	Yes (subject to timing of local authority /AddressBase updates)	Yes (subject to timing of local authority / AddressBase updates)	Possibly (where customer knows UPRN)
Historical churn	Yes (subject to postal address/supply point disjoins)	Yes (subject to postal address/supply point disjoins)	Yes (subject to postal address/supply point disjoins)	Possibly (where customer knows UPRN)
Timing of Updates	No	No	No	No
Crossed meters	Yes (plot-to-postal related) no (shared meter room)	Yes (plot-to-postal related) no (shared meter room)	Yes (plot-to-postal related) no (shared meter room)	Possibly (where customer knows UPRN)
Use of multiple addresses	Yes (allows a link across systems)	Yes (allows a link across systems)	Yes (allows a link across systems)	Yes (where customer knows UPRN)
Poor quality data provided by the customer, switching site or sales agent	No	No	No	No

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Problem/solution	Option A UPRN adopted by network operators	Option B shared UPRNs	Option B industry-wide adoption of address products	Option B UPRN in switching process
Ambiguous address data	Yes	Yes	Yes	Yes (where customer knows UPRN)
Supplier address updates	Yes	Yes	Yes (Suppliers and registration systems will have a shared reference point)	Yes (Suppliers and registration systems will have a shared reference point)
Multiple Meter Points	No	No	No	No

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Problem/solution	Alternative Key	Promoting the MPAN/MPRN in switching process	Switching site access to data	Improvements to the new connection process	Labelling the ECV/cut-out	Data Cleansing	Standard address format	Address validation
Inconsistent gas/electricity formats	no	mitigates risk	no	no	no	no	yes	no
Inconsistent gas/electricity address contents	yes	mitigates risk	yes	no	no	possibly depending on scope	could help automated matching	possibly depending on scope
Incomplete address data	no	mitigates risk	no	no	no	yes	no	yes
Plot-to-postal issues	no	mitigates risk, where known to customer	no	yes	no	legacy only	no	no
Historical churn	no	mitigates risk		no	no	no	no	no
Timing of updates	no	mitigates risk	yes	yes	no	no	no	no
Crossed meters	no	No	no	yes (for P2P issues)	yes	no	no	no
Use of multiple addresses	no	mitigates risk	no	no	no	no	no	no
Poor quality data provided by the customer, switching site or sales agent	no	possibly	no	no	no	no	no	no

ADDRESS DATA QUALITY: GAS AND ELECTRICITY

Problem/solution	Alternative Key	Promoting the MPAN/MPRN in switching process	Switching site access to data	Improvements to the new connection process	Labelling the ECV/cut-out	Data Cleansing	Standard address format	Address validation
Ambiguous address data	no	mitigates risk	no	no	no	no	no	no
Supplier address updates	no	No	no	no	no	no	no	no
Multiple Meter Points	no	Yes	possibly (depending on available data)	no	yes	no	no	no