

Data Protection Impact Assessment

ESB Networks – Smart Metering: 24 Hour Cumulative
Register Data

September 2020

DPIA541

The below approvers confirm that all required sections in this document have been completed accurately.

Approved By	Date
Process Owner	07 September 2020
Data Owner	07 September 2020
Data Protection Officer	09 September 2020

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Glossary

Abbreviation	Meaning
AMI	Advanced Metering Infrastructure
BPD	Business Process Design
CoLE	Change of Legal Entity
CoS	Change of Supplier
CRU	Commission for Regulation of Utilities
DB	Data Base
DSO	Distribution Service Operator
ESM	Electricity Smart Meter
HES	Head End System
IPS	Intrusion Protection System
KMS	Key Management System
MDMS	Meter Data Management System
MID	Measuring Instruments Directive
MPRN	Meter Point Registration Number (MPRN)
NSMP	National Smart Metering Programme

1. Background and Risks to the Data Subject

Section 1 and Section 2 constitute an Initial DPIA.

For the complete list of values for Data Subject Categories etc., please refer to the Records of Processing.

	Background Information
Business Unit	ESB Networks
Business Area	Smart Metering Project
Process Name	Recording and Collection of 24-hr Cumulative Register Data
RoP Process Reference	ROP N.SM.08
Process Owner	Manager of the Smart Metering Programme
Process Purpose	<p>ESBN has an obligation under Condition 3 (Operation agreements) and Condition 9 (Provision of Metering and Data Services) of the Distribution System Operator (DSO) licence (See Appendix - item 3) issued by the CRU to collect energy usage readings from the installed meter base.</p> <p>ESBN will collect three data items by default from every Electricity Smart Meter (ESM) every day. These are the 24-hr Cumulative Active Import Register, the 24-hr Cumulative Active Export Register and the Max Demand Register. These are used to manage customer billing, microgen and security and quality of service.</p>
Data Subject Categories	Customers
Name of Controller / Joint Controller	ESB Networks

	Background Information
Name of Processor	ESB Networks
Estimated Frequency of Process	The ESM is recording the 24-hr Cumulative Registers and Maximum Demand Register continuously (see list of registers recorded below). Snapshots of these registers are taken at midnight each day and stored on the ESM. They are stored in a circular buffer on the meter and are overwritten as the buffer wraps around.
High Level Description of the Flow of data	<p>There are a number of 24-hr Cumulative Registers recorded by the ESM. A snapshot of each of these Cumulative Registers is taken daily (at midnight) and monthly (on the first day of the month) and is stored on the ESM for up to 175 days (daily snapshots) or 36 iterations (monthly snapshots) in a first-in, first-out circular buffer.</p> <p>The following 24-hr Cumulative Registers are recorded on every ESM:</p> <ul style="list-style-type: none"> • 24-hr Cumulative Active Import Register (KWh) - This is the energy consumed from the grid at the premise measured in kilowatt-hours (kWh). • 24-hr Cumulative Active Export Register (KWh) - This is the energy exported to the grid from the premise measured in kilowatt-hours (kWh). Only customers with micro-generation equipment installed have the potential to export active energy to the grid. • 24-hr Cumulative Reactive Import Register (KVARh) - This is the reactive energy consumed from the grid at the premise measured in kilovar-hours (kVARh). It is usually consumed if inductive motors or other reactive loads are installed at the premise. • 24-hr Cumulative Reactive Export Register (KVARh) - This is the reactive energy exported to the grid from the premise measured in kilovar-hours (kVARh). It is

	Background Information
	<p>usually generated if capacitive loads such as synchronous motors or rotating generators are installed at the premise.</p> <p>All four 24-hr Cumulative Registers are viewable on the ESM display.</p> <p>The Maximum Demand Register is a measure of the maximum power demand at the premise and is only updated by the ESM when the power demand at the premise exceeds the highest previous value. It is automatically reset to zero by the ESM every month. It is measured in kilowatts (KW).</p> <p>The midnight snapshots for the 24-hr Cumulative Active Import Register, the 24-Hr Cumulative Active Export Register and the Max Demand Register are automatically packaged by the ESM into an encrypted data package just after midnight each day and pushed to the HES.</p> <p>The HES decrypts the data package, extracts the register values and pushes them to the MDMS. The MDMS validates the register values and stores them.</p> <p>The 24-hr Cumulative Active Import Register required to support supplier billing, Change of Supplier (CoS), Change of Legal Entity (CoLE), ESNB DUoS Billing and Market settlement aggregation will be provided from the MDMS upon request to ESNB Market Systems. The processes which operate on the data once it enters ESNB Market Systems are consistent to the processes which applied before Electricity Smart Meters were installed, except that, the meter reading is being provided by the MDMS instead of the manual meter reading service.</p> <p>The appropriate midnight snapshot register value for the billing date will be provided to the Supplier with whom the MPRN is currently registered via the Retail Energy Market Systems. This is identical to the process which applied before Electricity Smart Meters were installed.</p>
Data Fields	<u>Recorded on the ESM:</u>

	Background Information
	<p>Midnight snapshots taken daily and monthly for the four 24-hr Cumulative Registers and the Maximum Demand Register.</p> <p><u>Collected from the ESM:</u></p> <p>Daily midnight snapshots for the 24-hr Cumulative Active Import Register, the 24-hr Cumulative Active Export Register and the midnight snapshot of the Max Demand Register.</p>

Please complete the following questions as instructed. Please see Appendix Document [Number 1](#) for definitions.

Risks to the Data Subject Questions	Responses
<p>1. Does the process involve the use of sensitive personal data, or highly personal data relating to criminal convictions or offences?</p>	<p><u>No</u></p> <p>The process does not collect any sensitive personal data.</p>
<p>2. Does the process involve large amounts of personal data, either considered by the number of data subjects concerned, the volume of data processed, the duration of the process or the geographic spread?</p>	<p><u>Yes</u></p> <p>The process will involve the daily recording of 24-hr Cumulative Register data for all installed ESMs.</p>
<p>3. Does the process involve evaluating or scoring, including profiling or prediction, of data subjects, from personal data concerning performance at work, economic situation, health, location or movements?</p>	<p><u>No</u></p> <p>The 24-hr Cumulative Register and the Monthly Cumulative Register Data will be recorded on the ESM and transferred to the HES and the MDMS.</p> <p>Limited amounts of this data will be transferred to market systems and Suppliers to facilitate customer billing and market settlement. However, this is identical to the existing processes and does not change as a result of ESM deployment and is not considered in this DPIA.</p>
<p>4. Does the process include automated decision making with legal or similar significant effects, e.g. does the processing lead to the exclusion of, or discrimination against, data subjects?</p>	<p><u>No</u></p> <p>There is no automated decision making based on this data.</p>

Risks to the Data Subject Questions	Responses
5. Does the process include systematic monitoring / processing used to observe, monitor or control data subjects, such as data collected through "a systematic monitoring of a publicly accessible area"?	<p><u>No</u></p> <p>There is no automated monitoring based on this data.</p>
6. Are datasets combined or matched within this process (from multiple controllers or multiple processes) in a way that would exceed the reasonable expectations of the data subject?	<p><u>No</u></p> <p>The data use in ESNB Market Systems is consistent with the current use and is not changing as a result of ESM rollout.</p>
7. Is personal data about data subjects that could be considered vulnerable (including children) processed?	<p><u>No</u></p> <p>The data use in ESNB Market Systems is consistent with the current use and is not changing as a result of ESM rollout, so is not considered in this DPIA.</p>
8. Does the process use innovative technological or organisational solutions for personal data processing that are new to ESB?	<p><u>Yes</u></p> <p>Snapshots of the 24-hr Cumulative Register Data will be recorded on the ESM on a daily basis.</p>
9. Does the process prevent data subjects from using an ESB service or exercising any of their rights mandated by GDPR?	<p><u>No</u></p> <p>This does not prevent customers from using any ESB service and they can exercise all of their GDPR rights with respect to data stored and processed in ESNB IT systems.</p>



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Risks to the Data Subject Questions	Responses
<p>10. Does the process involve data transfers across borders outside the EU (note that this includes access by people based outside the EU)?</p>	<p><u>No</u></p> <p>The data will not be processed outside the EU/EEA.</p>

2. DPIA Outcome

The below outlines whether a “full” DPIA is required. If a “full” DPIA is required, please complete the remaining Sections.

DPIA Requirement Questions	Response
Has “Yes” been answered to at least two questions in Section 1?	<u>Yes</u>
Has there been a DPIA previously completed where the nature, scope, context and purposes of the processing are very similar to the processing for this process?	<u>No</u>
Has the process previously been checked by the Data Protection Commission and found not to be high risk?	<u>No</u>
Is there any other reason why a DPIA is not required?	<u>No</u> (If “Yes”, please provide further details to justify the response)
Based on the above, a full DPIA is:	<u>Required</u>

If a full DPIA is **not required**, the following sections do not have to be completed.

3. Scope and Description of Processing

Please provide a detailed description of the process and the lawful basis for the process in the table below.

Main Processing Activity	
<ul style="list-style-type: none">• Snapshot recording on the ESM of the daily cumulative registers and monthly cumulative registers and maximum demand register.• Daily collection into the ESN MDMS of three of those registers.	<p>Legal obligation</p> <p>ESBN process the data in accordance with Condition 3 (Operation agreements) and Condition 9 (Provision of Metering and Data Services) of the DSO Licence provisions as the Meter Operator (See Appendix – Item 3).</p>

If sub-processing activities are involved which rely on a different lawful basis for processing, please elaborate in the table below.

Sub-Processing Activity/Activities	
N/A	

3.1 Personal Information

Please complete the following table outlining the different types of personal and sensitive personal data which is processed. For the complete list of values for each category, please refer to the Registry of Processing.

Personal Data	Sensitive Personal Data or Data of a Highly Personal Nature
Personal Data <ul style="list-style-type: none">• Daily snapshot of 24-hr Cumulative Register Data• MPRN details for premise where ESM is installed• Premise address• Ordinance Survey X-Y co-ordinates for premise	Sensitive Personal Data <ul style="list-style-type: none">• N/A Children's Data <ul style="list-style-type: none">• N/A Criminal Convictions or Offences <ul style="list-style-type: none">• N/A

3.2 Recipients and Retention Period

Please complete the following table to describe who receives the data, and the retention period that applies in each instance.

Internal Recipients	Retention Period
<ul style="list-style-type: none"> MDMS (Cumulative data, MPRN, Premise Address and X-Y co-ordinates) 	<ul style="list-style-type: none"> Up to 7 years (period driven by Meter Code)
<ul style="list-style-type: none"> HES (Cumulative register data only) 	<ul style="list-style-type: none"> Up to 15 days (to cope with MDMS outages)
<ul style="list-style-type: none"> ESM (Cumulative register data only) 	<ul style="list-style-type: none"> Up to 175 days (24-hr cumulative register data) Up to 36 months (monthly cumulative register data)

External Recipients	Retention Period
Registered Energy Suppliers <ul style="list-style-type: none"> Suppliers will receive one register reading value every two months for the MPRNs for which they are registered, to support their customer billing. This is consistent with the current arrangement and is not considered in this DPIA. Change of Suppliers (COS) / Change of Legal Entity (COLE) processes require the data reads to be available so these can be executed in near real time. Collection of the 24-hr Cumulative Registers will allow for improved accuracy in the execution of these services. 	N/A

3.3 Assets on Which Personal Data is Stored

Please complete the following table to describe the assets on which personal data relies and the associated Access Rights and Technical Security measures.

Assets on which personal data relies				
Storage Type	Location	Descriptions	Access Rights	Technical Security Measures
ESM	Flash Storage on ESM	<p>The 24-hr Cumulative Register Data is contained in daily logs which store a daily snapshot of each cumulative register.</p> <p>The Monthly Cumulative Register data is contained in monthly logs which store a snapshot of the cumulative register value every month.</p>	<p>Accessible remotely by the HES only or locally via the ESM Optical Port.</p> <p>The four Cumulative Registers are also viewable on the ESM display to support manual meter reading for non-communicating ESMs.</p> <p>(Local access via the ESM Optical port requires use of a Local Meter Operations Tool with appropriate cryptographic credentials).</p>	<p>Access to the data stored on the meter requires possession of one or more encryption keys which are unique to each ESM. The encryption algorithm used is AES-128.</p> <p>Local access via the ESM Optical Port to the data stored on the meter requires possession of one or more encryption keys which are unique to each ESM. The encryption algorithm used is AES-128.</p> <p>Data packets sent to the HES are encrypted by the ESM using a key which is unique to the ESM and can only be decrypted by the HES. The encryption algorithm used is AES-128.</p>
HES	Mongo-DB and	Mongo-DB provides temporary storage for all encrypted data	No end user access is permitted to the HES application or to either of its databases.	Access to the HES application and its databases is controlled by Role Based Access Controls (RBAC) which are

Assets on which personal data relies				
Storage Type	Location	Descriptions	Access Rights	Technical Security Measures
	SQLServer DB	<p>packets received from the ESM while they are awaiting decryption. They reside in this DB for only minutes normally.</p> <p>SQLServer-DB provides temporary storage for the ESM data after it has been decrypted while it is waiting for the MDMS to collect and store it. Again, the data generally remains in the DB for only minutes but could remain there for up to 15 days if the MDMS is unavailable in a disaster scenario.</p>	<p>Access is restricted to the HES Application jobs that process the data prior to transferring it to the MDMS.</p> <p>Role based access with logging, monitoring and auditing is provided to Database Administration and HES Maintenance Accounts.</p> <p>All backups of the databases are encrypted.</p>	<p>implemented via dedicated Active Directory accounts, unique to each user and system service. A dedicated and isolated Active Directory Forest is implemented for the Smart Metering Operational Technology (OT) services including the HES.</p> <p>Formal logging and monitoring of activity is carried out.</p>
MDMS	Oracle DB	<p>The Oracle DB in the MDMS stores register data received from the HES.</p> <p>It also stores master data for the premise</p>	<p>The MDMS is the main end-user system for managing the ESM estate and the register data collected from the ESMs.</p> <p>ESBN administrators access the application via a web browser-based GUI. Database</p>	<p>Access to the MDMS application and its database utilises Role Based Access Controls (RBAC) and is implemented via dedicated Active Directory accounts which are unique to each user and system service. A dedicated and isolated</p>

Assets on which personal data relies				
Storage Type	Location	Descriptions	Access Rights	Technical Security Measures
		including the MPRN, premise address and X-Y co-ordinates.	<p>administrators and application support staff utilise management tools installed in the isolated OT domain.</p> <p>Role based access with logging, monitoring and auditing is utilised for all user and system accounts.</p> <p>All backups of the databases are encrypted.</p>	<p>Active Directory Forest is implemented for the Smart Metering Operational Technology (OT) services including the MDMS.</p> <p>Formal logging and monitoring of activity is carried out.</p>

3.4 Policies and Procedures

Please complete the following table to describe the internal policies and procedures that were consulted during the design of this process and any exception that may apply to each policy.

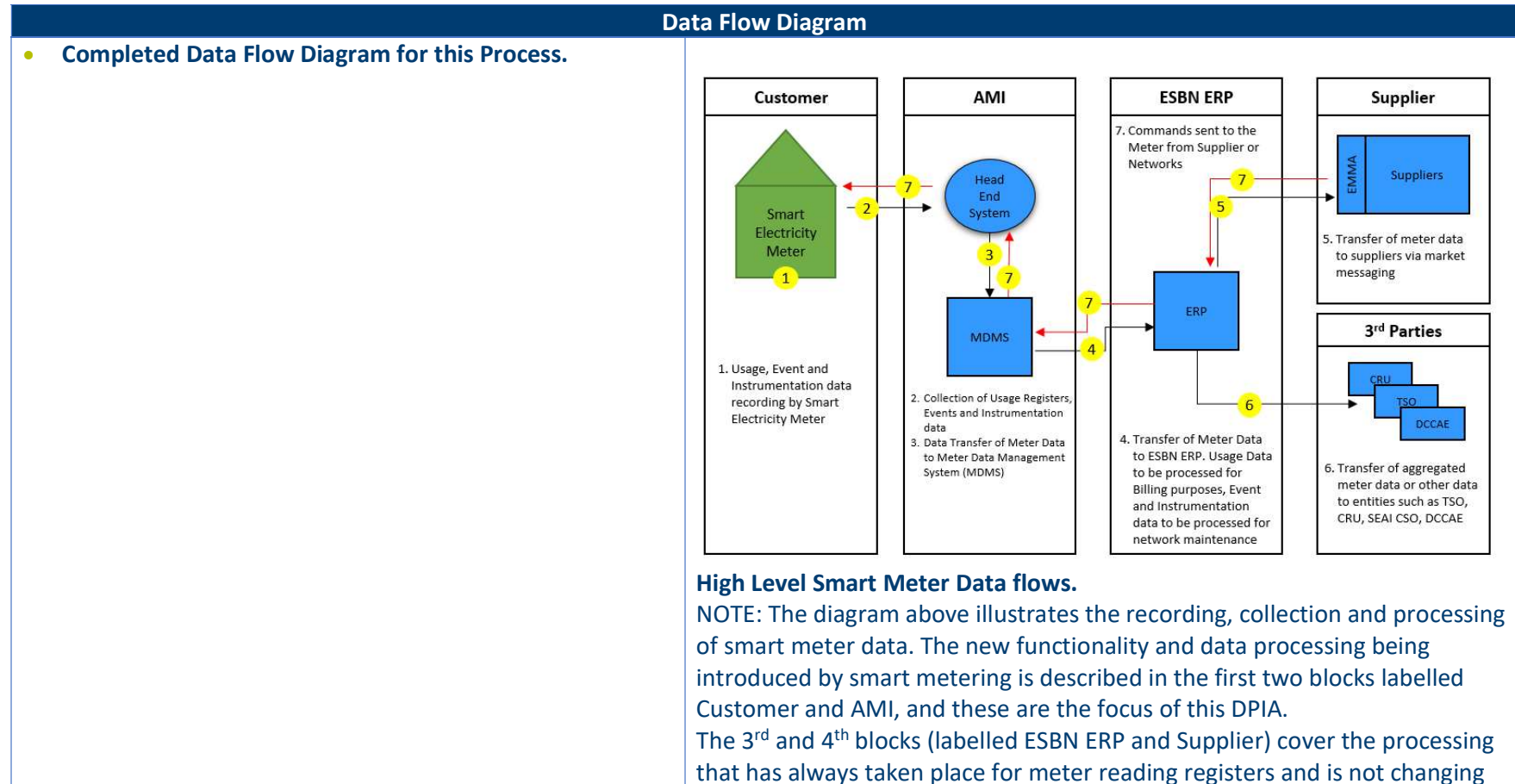
Policy or Procedure	Document Date and Version	Exception to Policy (if applicable)
CE16 - ESB Data Protection Policy	25/05/2018 v5.0	Right to erase not fully complied with
CE10 Corporate Policy on Cybersecurity	20/12/18 v3.0	None
ICTP 36 - Information Management	07/09/2016 v1.4	None
GP-004 Risk Management Policy & Governance Framework	17/04/2018 v8.0	None

For each exception listed above, please justify the reason why the exception is required.

Exception to Policy (if applicable)	Justification
Not fully compliant with right to erase	An exception to this policy applies for technical reasons, as the snapshots of the 24-hr Cumulative Register Data will remain on the ESM for a period of up to 175 days, and 36 iterations of the monthly cumulative registers before the buffer wraps and overwrites the old data. It is not technically possible to erase these buffers.

3.5 Data Flow Diagram

Following the instructions and using the template below, please complete and attach a Data Flow Diagram:





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	as a result of ESM rollout. Hence, these processes are not considered in this DPIA.
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4. Necessity, Proportionality & Risk Assessment

Please complete the table below to describe the process risks and associated mitigations.

The risks noted in this section are considered from the perspective of the data subject. The risks have the potential to cause physical, material or non-material damage to the data subject in areas such as identity theft, fraud, financial loss, and reputational damage, loss of confidentiality or privacy related to sensitive categories of data, being deprived of their rights and freedoms or prevented from exercising control over their personal data. The risk rating criteria can be found in the Appendix in Section 9.

Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
R1	Are there measures to ensure data collected is specified, explicit and legitimate in purpose?	Risk of data being collected for unspecified and/ or illegitimate purposes	ROP N.SM.08.01	The services and functions ESB Networks is required to provide are set out in its DSO Licence. Register Data will only be used to meet its Licence obligations.	1	1	1	The Register data being recorded is directly related to the operation of the ESM and is being collected to meet Condition 9 (Refer No.4 in the Appendix) of its DSO Licence.	Risk eliminated
R2	Are there measures to ensure data is processed lawfully ? (If consent is the basis to process personal data, are there measures to demonstrate consent and deal with	Risk of unlawful processing of personal data	ROP N.SM.08.02	Customers receiving ESM devices will be fully advised of the data that is being recorded on and collected from the ESM.	1	1	1	24-hr Cumulative Register data is collected under the obligations outlined in Condition 9 of the of the DSO Licence issued by the CRU (See Section 9 – Appendix, Item 3).	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
	withheld or withdrawn consent?)							The data is required to ensure accuracy in the Change of Supplier (CoS) and Change of Legal Entity (CoLE) market processes.	
R3	Are there measures to ensure data is not further processed in a manner that is incompatible with the original purpose(s)?	Risk of unlawful and/or undesired further processing/modification of personal data	ROP N.SM.08.03	<p>A single cumulative register snapshot will be provided to ESBN Market Systems on a bi-monthly basis to satisfy market processes. This processing is consistent with existing register data processing and is not changing as a result of ESM rollout.</p> <p>Logging and auditing on the MDMS system will identify any unauthorised or unusual data requests emanating from the ESBN Market Systems.</p> <p>Internal firewall and IPS devices isolate the AMI Infrastructure from corporate network.</p>	1	1	1	This data will be contained within the secured AMI infrastructure, designed specifically for processing this data. Only the single bi-monthly value required for Retail Market Systems will be released in line with existing processes.	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
R4	Are there measures to ensure data is adequate, relevant and limited to necessary data points ?	Risk of inadequate, irrelevant, and/ or excessive personal data being gathered	ROP N.SM.08.04	24-hr Cumulative Register is collected to ensure accuracy in the Change of Supplier (CoS) and Change of Legal Entity (CoLE) market processes.	1	1	1	Data collected from the meters under this process, is limited to the 24-hr Cumulative Register. No unnecessary data is collected from the meter, and thus cannot be processed.	Risk eliminated
R5	Are there measures to ensure data is accurate and, where relevant, kept up to date	Risk of inaccurate and/or erroneous personal data being processed	ROP N.SM.08.05	<p>All the cumulative register data recorded on the ESM is accurate, as the ESM is a MID certified measuring device.</p> <p>Validation of the data received in the MDMS is another control for ensuring the accuracy of the data received from the ESM.</p>	1	1	1	The accurate records stored on the MID certified meter are collected into the HES and onto the MDMS. Any modification of the data in the HES or MDMS is logged and audited. Processing is limited to the purpose-built AMI smart metering solution.	Risk eliminated
R6	Are there measures to ensure data is kept for no longer than is necessary for the purposes for which it is processed (limited storage duration of data)?	Risk of personal data being held for longer than is necessary and/or inappropriate destruction/ loss of personal data	ROP N.SM.08.06	<p>All Cumulative Register Data will be securely stored on the meter for either 175 days (for 24-hr register data) or 36 months (for monthly register data).</p> <p>This is an inherent function of the data loggers on the ESM and</p>	1	1	1	The Cumulative Register data contained in the ESM will be overwritten with new data as it is recorded in a first-in, first-out circular buffer.	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
				<p>consists of a wraparound buffer configured within the limited flash memory of the device.</p> <p>The data collected into the MDMS will be stored for 7 years as legally required in compliance with the Meter Code.</p>				<p>Data stored in the HES is retained for a maximum of 15 days.</p> <p>Data in the MDMS will be stored for 7 years as legally required in compliance with the Meter Code.</p>	
R7	Are there measures to provide relevant information (per GDPR Articles 12, 13, 14) to the data subjects?	Risk of insufficient information and/ or a lack of transparency related to the processing of personal data by the data controller	ROP N.SM.08.07	As part of the rollout and activation of ESMs customers will be fully informed about the data being recorded on the ESM and collected from it.	1	1	1	24-hr Cumulative Register is collected to ensure accuracy in the change of Supplier (CoS) and Change of Legal Entity (CoLE) market processes.	Risk eliminated
R8	Are there measures to ensure right of access and portability ?	Risk of inappropriate and/or untimely response to requests to access/ transport personal data	ROP N.SM.08.08	<p>The solution allows for the extraction of Cumulative Register data in the case of a SAR request.</p> <p>Portability is not relevant as ESBN is the only DSO in the Irish Electricity Market.</p>	2	1	2	The capability to extract the Cumulative Register data has been included in the solution.	Risk reduced
R9	Are there measures to ensure a right to rectify, erase, object	Risk of inappropriate and/or untimely response to requests to rectify, erase,	ROP N.SM.08.09	All of the rights (rectify, erase, object and restrict processing) can be exercised in respect	1	1	1	There will be no change to the existing Retail Electricity Market processes.	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
	and restrict processing?	object and restrict processing of personal data		<p>of the data being collected from the ESMs. Register Data is retained for 7 years in line with the Meter Code and as a requirement for billing purposes.</p> <p>Because of the way in which ESMs record their data, it is not possible to delete registers from the ESM. However, requests to rectify, erase, object and restrict processing can be fulfilled at a later stage in the process.</p>					
R10	Are there measures in place to protect the rights of the data subject where data has been or will be disclosed to other recipients including the notification obligation (Article 19)?	Risk of inappropriate disclosure of personal data	ROP N.SM.08.10	<p>The data collected in the MDMS will only be shared with the Registered Supplier of the end user.</p> <p>The single bi-monthly data value provided to the ESBN Market Systems for each ESM is processed under the existing Market System solutions and the control measures are already in place to</p>	1	1	1	In the event of inappropriate disclosure, existing standard ESBN procedures for notification of relevant data subjects will be enacted.	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
				protect the data subject rights.					
R11	Are there measures in place to protect the rights of the data subject by the processor, where processing is carried out on behalf of the processor (sub-processing) ?	Risk of inappropriate access to, modification of and/or destruction/ loss of personal data processed by a third-party service provider	ROP N.SM.08.11	The data recorded on the ESM and collected into ESNB systems is processed solely by ESNB. No sub-processors are involved.	1	1	1	Data processing will only be carried out by ESNB in ESNB owned and operated systems. No data will be transferring to any external data processor. No new third-party processors are being introduced as part of this project and existing privacy arrangements are in place describing the obligations of a sub-contractor operating with ESNB data.	Risk eliminated
R12	Are there technical and organisational measures in place against unauthorised access to and/or processing of personal data?	Risk of inappropriate access to, modification of and/or destruction/ loss of personal data	ROP N.SM.08.12	Cumulative Register Data on the ESM is only accessible via an encrypted connection from the HES system or from an authorised encrypted local connection. Each meter is configured with a unique set of cryptographic keys that enable AES128 encrypted messages to and from the ESM. The AMI infrastructure (encompassing the HES	1	1	1	The AMI infrastructure has been isolated from the main ESNB Network specifically to protect against authorised access to the data contained therein. Existing market system protections ensure the confidentiality of the Cumulative Register data after it is	Risk eliminated

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
				<p>and MDMS) is isolated from the corporate environment through the use of firewalls, IPS Devices and Separation of Services.</p> <p>Access is not available to the data in the ESM without the appropriate authentication and encryption keys. These keys are only available in the ESNB Key Management System and are stored in a secure database.</p> <p>The AMI infrastructure employs a dedicated IAM solution, ensuring that only authorised individuals are able to access personal data.</p> <p>Role based access control mechanisms are in place on the MDMS to limit access to only those ESNB staff who require it.</p> <p>All data access is logged and audited.</p>				transferred to market systems.	

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Risk No.	Considerations	Risk to Individuals/ Data Subject	RoP Process Reference	Current Measures to Address Risk	Probability Score	Impact Score	Risk Rating	Justification for Risk Rating	Result of Current Measures (Risk Eliminated, Reduced, Accepted, Gap)
R13	Are there measures to safeguard international transfers (outside EU/EEA) ?	Inappropriate transfer of personal data to a country or international organisation where enforceable data subject rights and legal remedies are not available	ROP N.SM.08.13	Data will only be processed by ESBN and Electricity Suppliers in the ROI.	1	1	1	Access to the data is restricted to ESBN and registered market participants.	Risk eliminated

5. Actions to Integrate the DPIA Findings into the Process

Following the identification of the Risks in section 5, please complete the table below listing any recommended actions for each risk identified. These should be integrated into the process to incorporate DPIA findings.

Risk No.	Risk to Individuals/ Data Subject	Action No.	Action	Responsible	Completed Yes/No	Sign off
R1	Risk of data being collected for unspecified and/ or illegitimate purposes	N/A	No identified action.		Not Applicable	
R2	Risk of unlawful processing of personal data	N/A	No identified action.		Not Applicable	
R3	Risk of unlawful and/ or undesired further processing/ modification of personal data	N/A	No identified action.		Not Applicable	
R4	Risk of inadequate,	N/A	No identified action.		Not Applicable	

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Risk No.	Risk to Individuals/ Data Subject	Action No.	Action	Responsible	Completed Yes/No	Sign off
	irrelevant, and/ or excessive personal data being gathered					
R5	Risk of inaccurate and/or erroneous personal data being processed	N/A	No identified action.		Not Applicable	
R6	Risk of personal data being held for longer than is necessary and/or	N/A	No identified action.		Not Applicable	

Risk No.	Risk to Individuals/ Data Subject	Action No.	Action	Responsible	Completed Yes/No	Sign off
	inappropriate destruction/ loss of personal data					
R7	Risk of insufficient information and/ or a lack of transparency related to the processing of personal data by the data controller	N/A	No identified action.		Not Applicable	
R8	Risk of inappropriate and/or untimely response to requests to access/ transport personal data	N/A	The mechanisms to gather the supporting elements of a SAR request, required for the enduring solution have been implemented as part of the AMI solution delivery.	AMI Team	Yes	
R9	Risk of inappropriate and/or	N/A	No identified action.		Not Applicable	

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Risk No.	Risk to Individuals/ Data Subject	Action No.	Action	Responsible	Completed Yes/No	Sign off
	untimely response to requests to rectify, erase, object and restrict processing of personal data					
R10	Risk of inappropriate disclosure of personal data	N/A	No identified action.		Not Applicable	
R11	Risk of inappropriate access to, modification of and/or destruction/ loss of personal data processed by a third-party service provider	N/A	No identified action.		Not Applicable	
R12	Risk of inappropriate access to,	N/A	No identified action.		Not Applicable	

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Risk No.	Risk to Individuals/ Data Subject	Action No.	Action	Responsible	Completed Yes/No	Sign off
	modification of and/or destruction/ loss of personal data					
R13	Inappropriate transfer of personal data to a country or international organisation where enforceable data subject rights and legal remedies are not available	N/A	No identified action.		Not Applicable	

6. Residual Risks

Following the completion of the Risk Assessment (Section 5) and the execution of the recommended actions (Section 6), please fill in the table below to describe any residual risks.

Residual risks that have been rated as high or very high risk must be reported to the Data Protection Commissioner.

Risk No.	Risk to Individuals/ Data Subject	Residual Risk Description	Justification for Residual Risk	Risk Owner
R8	Risk of inappropriate and/or untimely response to requests to access/transport personal data	Low	Mechanisms to collect the data required for a SAR request have been included as part of the AMI solution delivered in Drop 4.	ESBN Smart Metering

7. Consultations

Please complete the table below to describe the parties consulted in preparing this DPIA and summarises their comments and input.

Consultation Group	Consulted (Y/N)	Detail
Data Protection Officer	Y	The DPO and ESB legal department have been engaged proactively by the project to advise and guide the project on their compliance obligations throughout the course of the project lifetime.
Views of Data subjects or representatives of data subjects, where appropriate	Y	As part of NSMP consultations with the CRU.
Data Protection Commission	Y	Initial discussions on the ESN Smart Metering project approach.
Others (Please Describe)	Y	Electricity Association of Ireland. DCCAE.

8. Recommended Controls

Following the completion of the Risk Assessment (Section 5) and the execution of the recommended actions (Section 6) as well as the identification of any Residual Risks (Section 7), please see below a list of recommended controls.

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
R1	Risk of data being collected for unspecified and/ or illegitimate purposes	C.01.01	Documentation of Process Designs. Implementation of process to match documentation. Role based access to data and logging/ auditing of data transfers.	As part of the project the management of all data flows has been drawn up in Business Process Design (BPD) documents. A specific BPD has been drawn up for register data outlining how the data is to be processed at each stage through the AMI infrastructure.	ESBN Smart Metering Project	Ongoing
R2	Risk of unlawful processing of personal data	C.02.02	Collection of the 24-hr Cumulative Register will be completed under the obligations outlined in the DSO Licence to provide meter and data services to the market. Implementation of process to match documentation.	Condition 9 of the Distribution System Operator Licence requires that ESNB provide metering and data services to the Market. The one bi-monthly transfer of the Cumulative Active Import Register to ESNB Market Systems matches existing billing register processing and is tightly controlled, logged and audited	ESBN Smart Metering Project	Ongoing

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
			Role based access to data and logging/ auditing of data transfers.	for any unauthorised or unusual activities.		
R3	Risk of unlawful and/ or undesired further processing/ modification of personal data	C.03.03	Collection of the 24-hr Cumulative Register will be completed under the obligations outlined in the DSO Licence to provide meter and data services to the market.	Market agreements with Suppliers govern the use of data through the market system.	ESBN Smart Metering Project	Ongoing
R4	Risk of inadequate, irrelevant, and/ or excessive personal data being gathered	C.04.04	Solution Design Documents and Business Process Design documents created to define precisely what data is transferred from the meter to the HES and on to the MDMS and how the single bi-monthly reading is provided to the ESBN market systems.	Collection of energy usage data from the ESM will be limited to collection of the 24-hr and monthly Cumulative Register data. Provision of the single bi-monthly meter reading to the ESBN market systems matches existing data processing for billing.	ESBN Smart Metering Project	Ongoing
R5	Risk of inaccurate and/ or erroneous personal data	C.05.05	Meter is MID certified to ensure accurate recording. Time is regularly synchronised on the meter to ensure it	MID certificate and test results are available for every meter.	ESBN Smart Metering Project	Ongoing

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
	being processed		records meter data with valid date and time stamps.	Time synchronisation events are logged and collected from every meter. MDMS validation of meter data received further ensures that any inaccurate or erroneous data is quickly identified.		
R6	Risk of personal data being held for longer than is necessary and/or inappropriate destruction/ loss of personal data	C.06.06	Solution Design Documents, as well as Data Inventory Catalogues, identify the lifecycle of the data on the individual components.	Project documentation records this information.	ESBN Smart Metering Project	Ongoing
R7	Risk of insufficient information and/ or a lack of transparency related to the processing of	C.07.07	As part of the ESM rollout communications process, the customer will be informed about 24-hr Cumulative Register data being recorded by the ESM and the basis on which it will be collected by ESN.	Content in ESM customer communications and in FAQs on ESN Smart Metering website.	ESBN Smart Metering Project	Ongoing

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
	personal data by the data controller					
R8	Risk of inappropriate and/or untimely response to requests to access/ transport personal data	C.08.08	Existing procedures in place for fulfilling SAR requests.	Existing corporate processes and procedures.	ESBN Smart Metering Project	Ongoing
R9	Risk of inappropriate and/or untimely response to requests to rectify, erase, object and restrict processing of personal data	C.09.09	Data cannot be modified or deleted in the MDMS. Facilities within MDMS to support requests to rectify, erase, object and restrict processing of personal data.	ESM automatically implements control as part of inherent data recording operation.	ESBN Smart Metering Project	Ongoing
R10	Risk of inappropriate disclosure of personal data	C.10.10	Data collected from the ESMs will be stored in the MDMS. The MDMS is installed in a dedicated isolated	Dedicated OT environment implemented for AMI systems.	ESBN Smart Metering Project	Ongoing

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
			<p>environment and uses a dedicated User Access Management System.</p> <p>Internal firewall and IPS device to isolate AMI Infrastructure from corporate network.</p> <p>Separate IAM solution (from corporate network) for users who need to access to the AMI infrastructure.</p> <p>Data cannot leave the MDMS without intervention by an authorised user who is trained in handling personal data.</p>	<p>Firewall rules provide explicit control over, and logging of, any communication into and out of this environment.</p> <p>Role based access restricts data transport to authorised and trained individual(s).</p>		
R11	Risk of inappropriate access to, modification of and/or destruction/ loss of personal data processed by a third-party	C.11.11	There are no third-party service providers involved in the processing of meter data. Data is fully encrypted while traversing the AMI communications network.	NA	NA	NA

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Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
	service provider					
R12	Risk of inappropriate access to, modification of and/or destruction/ loss of personal data	C.12.12	<p>Data on the ESM cannot be modified or deleted.</p> <p>Data stored in the MDMS is protected by the underlying infrastructure. The MDMS is installed in a dedicated isolated environment and uses a dedicated User Access Management System.</p> <p>Internal firewall and IPS device to isolate AMI Infrastructure from corporate network.</p> <p>Separate IAM solution (from corporate network) for users who need to access to the AMI infrastructure.</p> <p>Encryption technology employed for data transfer from meter to back end OT systems.</p>	<p>Dedicated OT environment implemented for AMI systems.</p> <p>Firewall rules provide explicit control over, and logging of, any communication into and out of this environment.</p> <p>Data encryption cannot be disabled for communication over the AMI network.</p> <p>Role based access, restricts enablement of remote communications to the ESM as well as access to the MDMS.</p> <p>Secure solution architecture.</p> <p>Data sharing agreements.</p>	ESBN Smart Metering Project	Ongoing

Risk No.	Risk to Individuals/ Data Subject	Control No.	Control Description	Evidence of Control Existence	Control Owner	Control Frequency
			Data shared with Suppliers is regulated by the Market Data Sharing Agreements.			
R13	Inappropriate transfer of personal data to a country or international organisation where enforceable data subject rights and legal remedies are not available	C.13.13	<p>All AMI data processing activities occur in ESNB data centres located in Ireland.</p> <p>Data will only be processed by ESNB and Electricity Suppliers in the ROI.</p>	<p>Data sharing agreements.</p> <p>Dedicated OT environment implemented for AMI systems.</p> <p>Firewall rules provide explicit control over, and logging of, any communication into and out of this environment.</p> <p>Role based access restricts data transport to authorised and trained individual(s).</p>	ESNB Smart Metering Project	Ongoing

9. Appendix

Document Number	Document Name	Detail
1.	Definitions	 ESB DPIA Definitions.pptx
2.	Risk Rating Criteria	 ESB DPIA Risk Rating Criteria.pptx
3.	Distribution System Operator Licence (DSO)	https://www.esbnetworks.ie/docs/default-source/publications/distribution-system-operator-license-(dso).pdf?sfvrsn=4
4.	Legislation/Regulatory Framework Mandating Smart Metering	Directive 2012/27/EU on Energy Efficiency S.I. No. 426 of 2014 (European Union (Energy Efficiency) Regulations 2014 CER/12/008 Decision on the National Rollout of Electricity & Gas Smart Metering CER/14/046 National Smart Metering Programme High Level Design
5.	Trade and Settlement Code	https://www.sem-o.com/rules-and-modifications/balancing-market-modifications/market-rules/
6.	Metering Code	https://www.cru.ie/wp-content/uploads/2013/07/CER-Metering-Code-CER13281.pdf