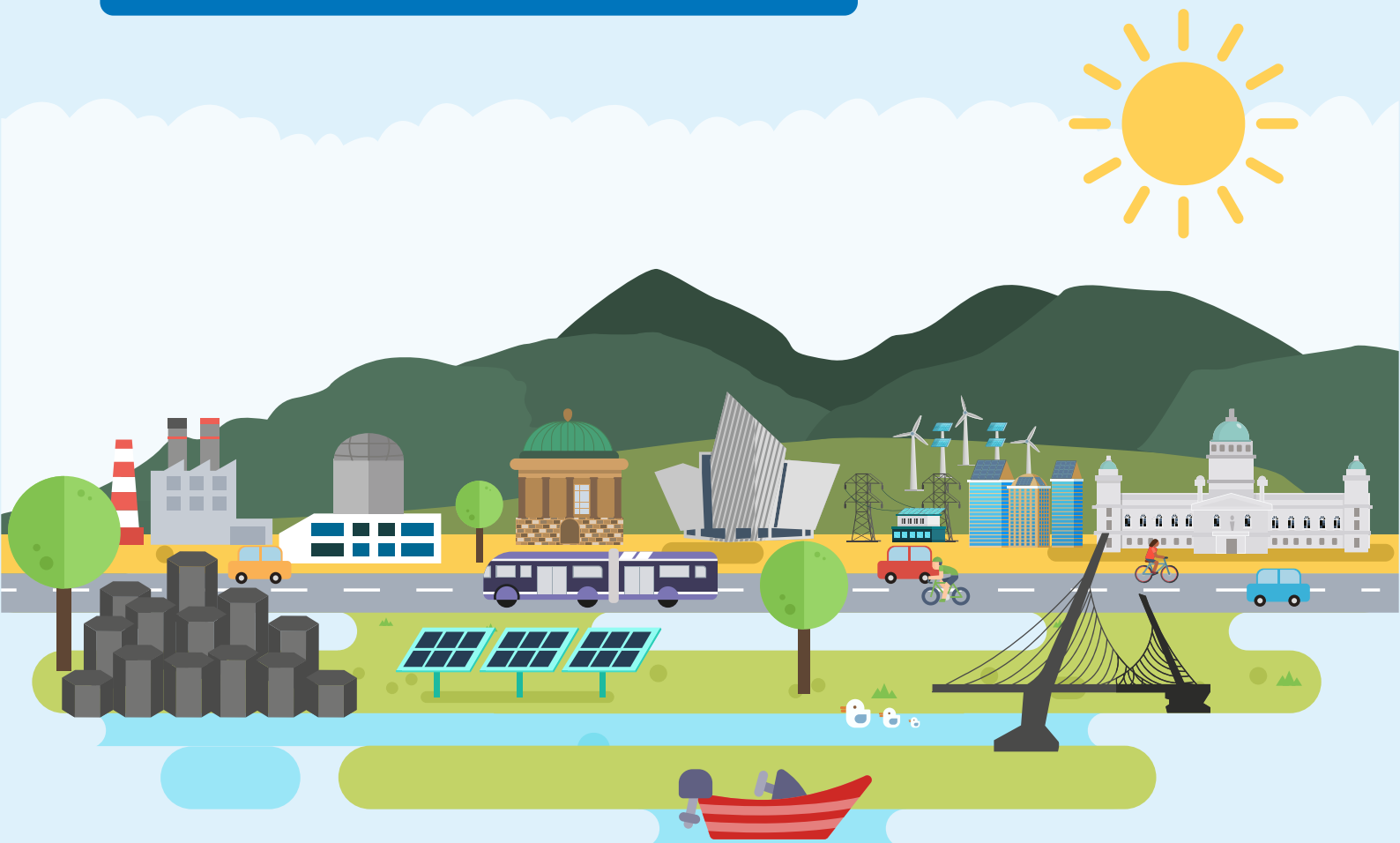
Department for the Economy
An Roinn Geilleagair
www.economy-ni.gov.uk

CONSULTATION ON THE DESIGN PLAN FOR THE ROLL-OUT OF SMART ELECTRICITY METERS IN NORTHERN IRELAND



OCTOBER 2024

Contents

Ministerial Foreword

At the beginning of this year, I set out four key objectives as part of a new Economic Mission. These were to increase the number of working-age people in **Good Jobs, to promote Regional Balance, raise Productivity and to reduce carbon emissions.**

The transition to net zero carbon emissions by 2050 is essential to fulfil our legislative requirements through the Climate Change Act (Northern Ireland) 2022. I will ensure that there is a just transition for energy consumers from fossil fuels to renewable energy. In addition, the energy transition will fuel a greener and more sustainable economy that generates more prosperity and better health opportunities for all.

We aim to become self-sufficient in affordable renewable energy. We have the resources including wind, biomethane and geothermal to do this. We will urgently reduce our dependency on imported fossil fuels and break the link with global energy commodity prices which have caused such financial hardship in recent years. We must ensure that people and businesses here pay a fair price for locally produced renewable energy.

Smart meters allow consumers to take control of their energy usage and bills. They will give consumers a better understanding of their electricity use day to day, empowering people to play an active role in becoming more energy efficient and help us meet our climate change goals. Smart meters can help us unlock the benefits of renewables by enabling a flexible electricity system that supports the security of our electricity supply and allowing us to use greener energy sources.

This is a very important major programme which needs to be completed as urgently as possible. We are committed to installing smart meters in all homes and businesses. This will involve visits to nearly 920,000 homes and businesses. To make the most of the opportunity to maximise benefits for consumers, we need the active support of a wide range of stakeholders. This major programme represents a cornerstone of the Executive's energy strategy and must be prioritised in order to secure the many potential benefits as quickly as possible.

CONOR MURPHY MLA
Minister for the Economy

Purpose and Scope

The Department for the Economy in Northern Ireland (DfE, or the Department) has responsibility for energy policy.

The Department published the Executive's Energy Strategy for Northern Ireland in December 2021. The Strategy sets out how we will achieve net zero carbon and affordable energy by 2050. The Energy Strategy set a target of 70% of electricity consumption to be from a diverse mix of renewable sources by 2030. This target has since increased to 80% through the Climate Change Act (Northern Ireland) 2022 (CCA).

Smart meters were proposed as a tool in the Energy Strategy to enable the development of an accessible and digitalised energy system where data provides value for consumers and a more efficient system operation – effectively supporting the delivery of dynamic balancing of supply with demand.

A cost benefit analysis (CBA) on electricity and gas smart meters[1], commissioned by DfE in 2022, concluded there is a sound economic basis for proceeding with an electricity smart meter roll-out.

Roll-out represents a significant investment and economic opportunity for Northern Ireland that involves providing meter installations in around 920,000 electricity consumer premises and a communication strategy to ensure that consumers understand and access the smart metering opportunities.

Consumers will benefit from the introduction of smart metering. The main benefit is that consumers will have near real-time information and more controllability of usage. In the future, consumers will be offered flexible and time of use tariffs which will help smooth out demand in the system and by incentivising the consumer to choose the cheapest time of the day to carry out household requirements such as running the washing machine, charging electric vehicles and other household items.

Smart meters provide the opportunity for the electricity system operator to run the system more efficiently thus lowering cost for electricity consumers.

Real-time information will give more visibility to the network operator to help monitor the operation of the network and respond quickly when issues arise . Other benefits include more transparent operation of the energy system, allowing the network operator to operate the system more flexibly.

1 Smart meters cost/benefit analysis report | Department for the Economy (economy-ni.gov.uk)

DfE is working with the Utility Regulator (UR) to develop the implementation plan for electricity smart meters and systems. The Department commissioned a detailed review of implementation programmes in other countries from energy metering experts LCP Delta to understand the key risks and barriers to implementation and consolidate knowledge on best practice. This is available on the DfE website and can be read alongside this consultation. The findings and recommendations from this review helped form this design plan for smart meter deployment here that is tailored to the needs of our electricity market and consumers. It should be noted that while LCP made a range of recommendations, the Department is not minded to take them all forward at this stage and therefore they are not all included for discussion in this consultation paper. They may however be considered at a later date during a more detailed phase of smart metering implementation One of our objectives is to avoid any potential mistakes in the roll-out and ensure consumers get value for money stemming from putting the customer in control of their usage and a better managed electricity system through improved data.

This design plan for the roll-out of electricity smart meters covers roles and responsibilities, including for procurement, deployment, data management systems, consumer protection, consumer education, and how consumers will pay for smart metering systems.

There are already developed and well-functioning structures for electricity metering, consumer advice and protection here. We expect all those involved to progress the smart meter roll-out as rapidly as possible as a necessary enabler for energy decarbonisation and delivering a just transition for society here. As part of achieving this, we are setting up an Oversight Group to ensure that rapid progress is made.

Procurement and testing of systems and communications will progress on a co-design basis, with consumer representatives playing a role at an early stage.

Since the publication of the CBA, DfE has worked to plan the fundamental steps for smart metering by engaging with stakeholders, completing an analysis of roll-outs across Europe, with a deep dive and understanding of the issues that arose in Great Britain, Ireland and Italy. A number of recommendations have been made and it's now important that firm proposals for the smart metering design plan here are taken forward to better support consumers to reach the goals for decarbonisation which have been set out.

This consultation is an important part of the stakeholder engagement process to gather more feedback on the key principles for the roll-out in the future.

The paper will be of interest to consumers, consumer representative bodies energy industry, regulators and those with an interest in smart data management.

Background

Smart meters are a modern type of electricity meter. Unlike traditional meters, which register a running total of energy used, smart meters can record half-hourly price and consumption data and provide automatic meter readings to energy suppliers. When linked to in-home displays and/or smartphone apps, smart meters also provide households with real time information on their energy usage and costs. Smart meters give consumers the opportunity to reduce their energy usage, as they pay more attention to the energy they use, and reduce the costs of supplying energy due to, for example, less need for manual meter reading.

Smart meters also lead to wider benefits, by enabling an electricity system that uses information and communications technology to help dynamically balance electricity generation and supply, to provide a more reliable and cost-effective electricity system. Smart metering is a critical feature of an efficient, decarbonised power system as it can be used to encourage consumption patterns that are more aligned with an energy generation mix that increasingly draws on intermittent renewable power sources such as wind and solar.

Smart meters are already part of everyday life in many countries across the world and in the majority of European countries. A lessons learned exercise on roll-outs completed across Europe, Ireland and Britain has been conducted by LCP Delta for the Department, helping to reduce risks in our smart meter delivery and harness opportunities from the outset to make sure the smart metering benefits are realised early on.

Achieving net zero depends on the move away from fossil fuels to using clean energy. This requires harnessing energy from low carbon sources to power our homes, businesses, and vehicles. To meet this challenge, millions of low carbon appliances – including solar panels, battery storage, heat pumps and electric vehicles – will need to be seamlessly integrated onto our electricity networks.

Variable renewable electricity from the sun and wind will need to be balanced, second-by-second, with demand from our heating systems and cars. Smart technologies such as battery storage and smart heating systems will be deployed so that low carbon power is available in the right places and at the right times to meet our energy needs.

Smart Meters are needed to support and encourage consumers to take control of their energy usage and obtain maximum benefits from low carbon technologies such as heat pumps and electric vehicles.

Consumers (domestic and non-domestic) will be at the heart of this system. They will need to be provided with the right information and support (implementation stage and ongoing support) so that they can understand their energy consumption and choose the right tariffs and services that help optimise their bills whilst helping the overall system decarbonise. Information, education and clarity on options available for smart meter use will be key to enable and motivate positive consumer outcomes. Consumers will continue to be protected in relation to how data is managed. It is important at this stage to understand fully the issues around data sharing and data protection in order to provide appropriate protection for consumers while enabling those consumers who wish to actively participate in the market to do so.

Smart metering will help consumers to actively participate in the energy market, including selling energy generated from their rooftops or using smart controls to shift their demand to periods of the day when prices are lower.

Section 1: Methodology for evidence gathering

1.1 DfE commissioned LCP Delta to undertake a lessons learned review of smart meter implementation strategies elsewhere to inform the roll-out for Northern Ireland.

1.2 The report highlights key risks associated with the roll-out in Northern Ireland. It also brings forward a number of recommendations for the themes listed below:

- Roles and responsibilities
- Consumer protection
- Data
- Functional and technical requirements
- Barriers to consumer buy-in
- Roll-out strategy

1.3 The contents of the report are based on analysis of information gathered via a literature review and stakeholder engagement.

1.4 A literature review was conducted across a range of relevant publications. LCP Delta considered the whole of Europe at a high level then Britain (GB) and Ireland in more depth.

1.5 Insights and feedback were gathered from a number of stakeholder engagement workshops. A diverse range of participants from Northern Ireland, Ireland and Britain including government, electricity suppliers and network operators, consumer representation organisations etc. were represented at workshops.

1.6 The recommendations formed after this research and analysis and subsequently documented within the LCP Delta report have informed the proposals and questions contained within this consultation.

Section 2: Recommendations

Summary of Recommendations

2.1 There are a series of recommendations which can be considered to form the basis for the smart meter roll-out. These have been developed by LCP Delta through its extensive stakeholder engagement and research phase earlier this year:

a. Northern Ireland Electricity Networks (NIE Networks) is best placed to procure and install smart meters and to develop a new data system for storage and management of the data.
b. Consumer protection is paramount, and consumers should have a say in who can access their personal meter data.
c. Systems should be designed with the help of consumers using a co-design process; and time of use/flexible tariffs should be developed.
d. A consumer communications approach and campaign should be designed, with one organisation to take the lead and others to provide support.
e. Further advice should be sought on cyber security provisions.
f. There should be no unnecessary barriers to providing data to improve the electricity system and products on offer.
g. An oversight group comprising the Department, the Utility Regulator and other consumer protection representation to be established to oversee deployment, ensure the necessary legislation and regulation is in place, set metrics, undertake research, and evaluate the programme as it evolves.
h. Consumers should continue to pay for smart meters in the same way as existing meters through the existing monopoly network regulated price control mechanism.

Guiding Principles for the smart metering programme

2.2 We have established a set of principles that are intended to guide the design and implementation of the smart metering programme, and to help decision-making when difficult decisions are required.

2.3 Consumers will be at the heart of smart metering.

2.4 Significant consumer benefits will be realised through smart metering, but several of these can only be delivered through consumer engagement, participation, and supporting consumers' behavioural change – decisions must consider the impact on consumers and how they can be engaged and supported. Success will enable them to participate in the energy market, have the potential to save money, enable a personal green transition, support the adoption of consumer low carbon technologies, and maximise the benefit of renewable energy resources.

2.5 Consumers will have a say in who can access their personal data.

2.6 Consumers must have a simple method of gaining access to their personal data and providing access to (subsets of) that data to third parties, setting out the purposes for which the data can be used. It should also be simple for a consumer to see who has been granted access to the data and to challenge this.

2.7 It should be recognised that not all data is personal, that some data is required for electricity system purposes, and that processes such as anonymisation have the potential to offer wider consumer benefits without compromising any personal data.

2.8 Currently the networks company (NIE Networks) is responsible for reading meters and provides meter data to the consumer's nominated supplier who then uses that data to prepare individual bills. This will not change in the future system except that the data will arrive electronically in real-time and therefore be more accurate and timely. Data which is not classed as personal data will be needed to enrich the system to deliver the flexibility goals set out in the Energy Strategy. Separate to this, consumers will have a choice and be able to nominate advisors or third parties to have access to their data so they can get advice or more tailored product offerings to suit their needs.

Smart Metering installation and operation will be secure and safe

2.9 The installation should be planned, training provided, and due care and attention during the installation process to ensure the safety and security of consumers and installers.

Smart metering will support the low carbon transition

2.10 The overall smart metering solution must be designed to facilitate the transition to a low carbon energy system and economy. This will include how data and system digitalisation will enable individual consumers to participate in, and benefit from, the smart metering programme and the changes it enables.

Smart Metering will be future-proofed as far as technically reasonable

2.11 Choices affecting the selection, design, and implementation of smart metering need to consider future proofing to ensure that early obsolescence does not erode the benefits or incur unnecessary extra early costs. This will encompass the meters, communications, central IT, security, and privacy, among other things.

Value for money will be factored into decision-making

2.12 Functional requirements should consider the trade-off between benefit and risk. Decisions regarding the scope and completeness of roll-out should consider marginal cost of introducing new technologies and solutions to avoid erosion of benefits, but alternative arrangements for consumers may need to be considered. The solution should enable suppliers, distributors and third parties to innovate to deliver additional business and customer benefits.

Smart metering programme costs and benefits should be fair, transparent and equitable

2.13 The costs of the smart metering programme should be transparent to ensure the trust of consumers. Costs should be apportioned and allocated based on those who can benefit, and smart metering should enable all consumers, including the vulnerable, to participate and benefit.

Questions

1. **Do you agree with the guiding principles for the programme? Yes/No and why**
2. **Do you have any further suggestions?**

Section 3: Roles and responsibilities for the roll-out of the new system

3.1 Establishing clear roles and responsibilities for industry, government, and the Utility Regulator is critical to clarifying the responsibilities and expectations for each stakeholder, reducing confusion, and enhancing accountability throughout the roll-out process. Done well, parties will be able to streamline operations and improve the overall effectiveness of the roll-out. Cooperation and coordination among stakeholders, will be crucial for overcoming challenges of the smart meter roll-out for consumers and the electricity system.

3.2 Meters are currently bought and installed by NIE Networks for all consumers. A range of alternative options relating to stakeholder responsibilities and activities were put forward during the stakeholder research period earlier this year, such as suppliers buy and install meters, or a new regulated company is established to look after the future data management set-up. However, these new options did not meet with the expectations of stakeholders and were therefore removed from further consideration.

3.3 Having considered consumer protection, education, the roles of Government and the regulator and data protection advice, it was also thought that current bodies carrying out similar duties could provide this support during the roll-out also.

3.4 Findings from the research phase for this plan indicated that DfE should leverage what has worked successfully before in other jurisdictions and in the North (e.g. the retail market opening for new electricity suppliers).

3.5 We propose the following roles for organisations:

- DfE along with the UR will set up an oversight group which will set guiding principles, metrics, review policy and legislation and evaluate the programme as it evolves. It will approve overall governance and oversee a range of sub-groups responsible for different work programmes that will contribute to the roll-out.
- NIE Networks will procure meters and systems and store and manage data. Before doing so, it will present a fully costed case to the Utility Regulator that is fair and appropriate for consumers; procurement stage to use co-design principles with consumer representative organisations nominated by the oversight group. NIE Networks will report progress to the oversight group.
- The Utility Regulator to approve design requirements, regulatory oversight and communicate on the costs, approve programme cost recovery through a regulated price control exercise.

- The consumer complaints process to remain as it currently is. That is, if consumers have a complaint about the meter or the installation process to contact NIE Networks, and billing issues are to be resolved with suppliers. If complaints remain unresolved, consumers can contact the Consumer Council. Where the Consumer Council has been unable to resolve billing complaints, they can be referred to the Utility Regulator.
- The Consumer Council will lead a sub-group on consumer protection and engagement which will propose core messaging and an engagement strategy to the oversight group for approval. It will also act as an advisor to the oversight group on all consumer protection issues ensuring that the consumer's voice is at the heart of all elements of the design and roll-out. Prior to roll-out, this group will deliver a communications and consumer education campaign in collaboration with the Consumer Council's network of partners and consumer advice organisations. As leaders of the consumer protection subgroup the Consumer Council will provide information and advice to the oversight group.
- Suppliers to develop phone apps and billing information, along with time of use and dynamic tariff product offerings that meet the needs of consumers. This work will be led by a sub-group and involve multiple stakeholders.
- The Information Commissioner's Office (ICO) who regulates the UK's data protection legislation, will be engaged from the start. This will ensure consumer data is protected and energy companies adhere to the highest standards of protection in relation to the processing of personal data.

Questions

3. **Do you agree with the overarching roles that have been set out for each of the organisations above? Yes/No and why/why not?**
4. **Are there other organisations not mentioned who will need to be assigned a role – please suggest?**

Section 4: Consumer Protection and Engagement

4.1 Consumer protection and engagement is a fundamental consideration for this programme of work and it will be led by our guiding principle that consumers will be at the heart of smart metering. Ensuring that consumer rights and needs (domestic and non-domestic) are safeguarded is essential to gaining widespread trust and adoption. There is a big opportunity for consumers to have more control over their energy consumption - both how much they use and when they use it.

4.2 There are various factors that influence consumers' willingness and ability to change their behaviour, including: Awareness – consumers need to be aware of smart metering, its potential benefits and, as a consequence, have an interest in engaging with smart metering; Confidence – consumers need to be confident that a meter and its installation will be safe and secure; and that they will be able to achieve potential benefits as a consequence; Information/ support – consumers will need to understand how to use information they have on new apps and what actions they can take to reconsider their energy consumption; and Opportunity – not all consumers have the same scope to change their consumption behaviour. Some consumers, particularly more vulnerable consumers, may have limited scope to cut down on their energy consumption or use energy at different times.

4.3 In addition to meeting the needs of domestic consumers, we will also look at the needs of small businesses and how best to install and provide a new service to them. Through our engagement to date, we understand that it may be more difficult to schedule appointments for this group and careful planning will be needed to allocate appointments which avoid peak business hours. Undoubtedly smart meters will provide new insight that businesses need and can use to their advantage.

4.4 For installation, we may consider the establishment of a centralised database to track installation progress to help with transparency and satisfaction. We will also consider what helpdesk support is needed.

4.5 The roll-out will need to be sensitive to the needs of different groups of consumers such as those with particular access needs or other vulnerabilities. To address these areas of specific concern, there will be requirements for additional, specific consumer protections and the Oversight Group will work on engaging with consumer representatives to ensure specific needs are recorded and taken into account.

4.6 Consumer representatives will be involved in the co-design of metering and data systems, particularly during the procurement phase in setting the list of requirements and then the testing phase to ensure the needs of all consumers, particularly vulnerable consumers who may have accessibility requirements, are addressed. It's important to note that consumers will bear the cost of new systems in the same way they do currently for any upgrades. Costs are recovered from all consumers collectively through the billing process. Consumers will not receive an individual bill for smart meter installation and the cost is recovered over multiple years, rather than up-front. Therefore options will need to be costed and carefully selected.

Time of Use and Dynamic Tariffs

4.7 A time-of-use tariff means the price of electricity consumption changes depending on the time of day. People tend to use more electricity during the daylight hours, typically from 8am to 10pm when they are awake. These are the peak hours when most households and businesses are active, and the demand for electricity is at its highest. While the Economy 7 tariff is a limited form of time of use tariff, having smart meters will mean that suppliers can start to offer new more dynamic and responsive time of use or flexible tariffs that haven't been available before. For example, on a windy day there may be lots of extra electricity generated which can be sold at a cheaper price and suppliers will be able to alert consumers via an app to let them know quickly.

4.8 It's expected that consumers in the future will be able to proactively manage their usage patterns to take advantage of times when there is high availability of cheap renewable electricity and low electricity demand. This will be particularly useful for maximising the consumer benefit from things like solar panels, heat pumps, batteries and electric vehicle chargers. Consumers will also be able to schedule the start time for the dishwasher, washing machine, or other appliances to operate when the lower tariffs are available. This is not to say that fixed rate tariffs as we know them will not exist in the future. Adequate protections must be put in place to ensure they will remain and be available for consumers who need them, so they have the option to pay the same flat rate for electricity, no matter what time it is. This simplicity can be appealing, as it means energy prices are consistent since there is just one single rate. But it does not offer the potential savings that could be had by using some electricity during off-peak hours instead.

4.9 We propose that in time, suppliers (working with wider industry) will develop well-structured time of use tariffs and offer them to consumers who will be able to take advantage of the savings. This will require consumers to be engaged and assistance will need to be available to help them decide on the most suitable tariff. It is an important element of the consumer protection workstream that consumers should not suffer detriment as a result of their tariff choices.

4.10 Work with the Oversight Group will cover aspects of consumer protection in the following areas as a minimum:

- Setting standards of consumer protection for all consumers.
- Identifying and managing options for vulnerable consumers.
- Ensuring the right framework is in place so that consumers have access to their data.
- Determining how consumers will be supported through installation and setup of new systems and afterwards for support when required and setting clear protocols.
- Developing the policy on switching from credit to prepayment mode.
- How to help those consumers who are already in debt or may fall into debt.
- Consider how time of use tariffs might be structured and offered to consumers who can take advantage.

Consumer buy-in

4.11 Buy-in from consumers is critical at the early stages to reduce any misunderstanding or misinformation or the risk of resistance. We will want consumers to understand the benefits for their own homes and businesses and for the decarbonisation of the wider electricity system by reducing the amount of fossil fuel generated electricity in use and reducing peak load on the networks at particular times of the day.

4.12 To build trust, the Oversight Group will work with consumer representatives and experts to:

- Communicate the benefits associated with the roll-out and the part that consumers will play.
- Engage with consumers in a tailored manner through familiar channels such as digital portals and print media to provide information.
- Use case studies, videos and other promotional material to help consumers prepare.
- Map out the consumer engagement journey from installation, doorstep protocols, and longer-term engagement.
- Alleviate concerns such as higher bills, rural connectivity issues and cyber security questions.

4.13 It is recognised that communication will rest with a number of bodies including the Department, Utility Regulator, suppliers, NIE Networks, the Consumer Council and other consumer and advice organisations. It will be important for an independent body to provide impartial advice. There will be one co-ordinated plan to deliver this support from initial engagement through to post installation support. In relation to the consumer protection and communication workstream, we propose the Consumer Council should lead a sub-group and co-ordinate a plan to meet with needs of consumers from early engagement to full deployment.

Questions:

5. **Do you agree that consumer representatives should be involved in the design of the requirements for the new systems and procurement as part of a co-design group? Yes/No - please comment.**
6. **Do you agree that the language used in this initiative should be reviewed by consumers, and are there titles other than 'smart metering programme' that should be considered for the roll-out?**
7. **Do you agree that the roll-out needs to be sensitive to the needs of different groups and that the Oversight Group along with consumer representatives should review all aspects of consumer protection to ensure needs are met? Yes/No – please comment.**
8. **Do you agree that some consumers may have limited scope to cut down on energy consumption or use a smart meter? Yes/No – please comment and if so do you have any recommendations to help support these consumers - yes/no – please comment.**
9. **Do you have any comments on the plan to review the needs of small businesses in order to consider installation and longer-term support for this group? Yes/No – please comment.**
10. **Do you agree that suppliers (working with wider industry) should develop time of use or dynamic tariffs so that consumers can take advantage of lower prices at certain times of the day or when there is an abundance of renewable energy in the system? Yes/No - please comment.**
11. **Do you agree that a coordinated plan is needed to allow trusted organisations to deliver consumer information, advice and support at appropriate points throughout the consumer journey? Yes/No – please comment.**

Data management and privacy

4.14 Proper data management is essential for ensuring secure and efficient data flow. Data privacy and protection is paramount and will be underpinned by rigorous cyber security protocols to ensure safety.

4.15 Smart metering will result in a huge and exciting change in the amount of data available from electricity meters. Sending fully encrypted data from the meter to a highly protected and secure cloud-based platform will enable energy consumption to be analysed in more detail (e.g. half-hourly). Smart meters will allow consumers to view their consumption history and compare usage over different periods, for example through an IHD or internet applications. We believe it is essential that consumers can readily access the information available from their meters. They should be free to share this information with third parties, for example, to seek tailored advice on energy efficiency or which supplier or tariff is best for them.

4.16 The frequency with which meters are read and the level of detail of data to be extracted will vary in line with the type of tariff the consumer has chosen. For example, as now, suppliers will need regular meter readings to provide accurate bills. Where suppliers offer innovative tariffs, such as those based on time of use, they will need more detailed consumption information.

4.17 We recognise that having a system with new data sets holding consumers' energy usage could raise privacy concerns for individuals. We will take a rigorous and systematic approach to assessing and managing the important issues of data privacy for the planning of the new system. The Oversight Group will look to build on safeguards already in place, notably UK GDPR and the Data Protection Act 2018. A sub-group will develop a privacy policy and access code for smart metering data. The group will also work with the Information Commissioner's Office to ensure the highest standards are met.

4.18 Examples of data moving from the meter to the cloud-based platform/system will include:

- Consumer real-time usage information – accessed through a phone app or IHD.
- Near real-time network information which identifies outages and faults quickly
- Historical network information – Aggregated and anonymised for network planning purposes.
- Historical usage data - This data, typically accessed by the consumer, can be extended to third parties if the consumer provides permission. This data does not need to be high-frequency or high-resolution. Proper authentication mechanisms must be in place for this, especially for third-party access, to protect consumer privacy.
- Supplier billing data – This is crucial to enable suppliers to bill customers.

4.19 To protect data privacy and ensure robust data protection measures, the following considerations are examples of the issues to be explored by the Oversight Group:

- Anonymisation and Aggregation: Implementing anonymisation and aggregation techniques to mask individual consumer identities and behaviours when required.
- Consent Mechanisms: Establish clear and transparent consent mechanisms for data collection, ensuring that consumers are fully informed about the types of data being collected, how it will be used, and who will have access to it.
- Access Controls: strict controls to limit access to smart meter data only to authorised personnel or entities with a legitimate need, in line with UK GDPR's principle of data minimisation.
- Data Encryption: Strong protocols to protect data both in transit and at rest, safeguarding it from unauthorised access or interception.
- Privacy by Design: Embedding privacy and data protection considerations into the design and implementation of the technology from the outset.
- Data Retention Policies: Establishing clear policies for data retention and deletion, ensuring that data is not retained for longer than necessary and is securely disposed of when no longer needed.
- Data Security Measures: Robust cybersecurity measures to protect smart meter infrastructure from cyber threats and breaches, including regular security audits, vulnerability assessments, and intrusion detection systems.

- Consumer Rights Awareness: Educate consumers about their rights regarding their personal data collected by smart meters, including the right to access, rectify, and delete their data, as stipulated by UK GDPR.

Cyber Security

4.20 Ensuring robust cybersecurity measures is crucial in the deployment of smart meter technology. While smart meters offer valuable insights into energy consumption patterns, they also collect sensitive data that could compromise consumer privacy if breached.

4.21 The Oversight Group will develop a work package to ensure cyber security measures are fully considered and implemented in the roll-out strategy. The key considerations include:

- **Network Segmentation:** Partition of the smart meter network into separate segments to limit access and mitigate the impact of potential breaches on the entire network.
- **Intrusion Detection Systems (IDS):** Deploy IDS to monitor network traffic and detect any suspicious activity or unauthorised access attempts.
- **Endpoint Security:** Implement robust security measures on smart meter endpoints to prevent malware infections and unauthorised access.
- **Encryption:** Encrypt data both in transit and at rest to protect it from interception or tampering by unauthorised parties.
- **Authentication Mechanisms:** Use strong authentication methods, such as multi-factor authentication, to verify the identity of users accessing the smart meter network.
- **Regular Security Audits:** Conduct regular security audits and assessments to identify vulnerabilities and address them proactively.
- **Incident Response Plan:** Develop and implement an incident response plan to effectively respond to and mitigate cybersecurity incidents in a timely manner.
- **Employee Training:** Provide cybersecurity awareness training to employees to educate them about potential threats and best practices for mitigating risks.
- **Vendor Risk Management:** Evaluate and manage the cybersecurity risks posed by third-party vendors involved in the smart meter ecosystem, such as meter manufacturers and software providers.
- **Compliance with Regulations:** Ensure compliance with relevant cybersecurity regulations and standards, such as the Information Security Management ISO/IEC 27001, to maintain the security of smart meter systems with advice from the National Cyber Security Centre.

Consumer consent

4.22 With an increasingly decentralised energy system, consumers need more empowerment and need to trust the way they share their data is safe and secure.

4.23 Data which is not classed as personal data will be needed to enrich the system to deliver the flexibility goals set out in the Energy Strategy. However, there are a range of instances when third parties will have a legitimate need to access personal data, for example, the networks company will collect meter data and share with suppliers to allow accurate billing.

4.24 In other areas, access to the data should be subject to customer consent. For example, consumers will have a choice and be able to nominate advisors or third parties to have access to their data so they can get advice or more tailored product offerings to suit their needs. In this specific instance, we recognise the important principle that data control rests with the consumer. We will work to make sure that consumers have control over their own energy data, this includes the ability to securely share their energy data with trusted market participants. This means that market participants can provide consumers with services such as lower bills, greener energy or a more efficient and hassle-free energy experience.

4.25 The Oversight Group will ensure that the industry seeks advice before processing personal data in line with the data protection principles set out under the UK GDPR as follows:

- Lawfulness, fairness and transparency
- Purpose limitation
- Data minimisation
- Accuracy
- Storage limitation
- Integrity and confidentiality (security)
- Accountability

4.26 We will implement a data protection by design and default approach when rolling out smart metering to protect personal data. In essence, this means integrating or 'baking in' data protection into any processing activities and business practices, from the design stage right through the lifecycle.

4.27 To support our work in this crucial area, we intend that the Oversight Group establishes a Data Management work package and will invite the Information Commissioner's Office and other key agencies, to provide expert advice to the programme. We will continue to expand and deepen our engagement with stakeholders on these issues. Once data becomes available, an effective data governance forum at a market level for new and existing players will be formed to accelerate collaboration.

4.28 In order to guarantee data privacy in line with regulations, it is imperative the smart metering system is secure. Privacy and security issues across the end-to-end metering system will be analysed and risks assessed, which will then be reflected in the technical specifications that the industry will be required to adopt.

Capturing energy data opportunities

4.29 Aggregated and anonymised data may be made available to trusted organisations for lawful purposes, according to defined rules and in a way which is complaint with data protection law.

4.30 Energy data will be the cornerstone in establishing a stable, secure future power supply. Unlocking and distributing this interoperable data to market participants in a uniform, transparent way should be a top priority to maximise the vast opportunities in energy data.

4.31 We will be undertaking further analysis to establish the different potential data requirements of industry participants and whether such data collected needs to be personal, aggregated or anonymised, helping to map out when and where data can be shared lawfully, and in line with data protection legislation.

Questions:

12. **Do you have any comments on our overall approach to data privacy and consumer consent?**
13. **Do you have any comments on the proposal to allow trusted organisations to have access to aggregated and anonymised data for lawful purposes?**
14. **Are there any other specific organisations who should be included to give advice to the data management workstream?**

Section 5: Functional and technical requirements

5.1 Setting the minimum functional and technical requirements for smart meters is critical in the early stages of the roll-out design. This is to reduce the risk of technical issues and increased costs. It will also enhance consumer satisfaction and allow ease of use.

5.2 Agreement on a set of common functional requirements (what the system must do) and technical specifications (how will the system do it) are essential to provide the interoperability that is needed to ensure that all consumers find it easy to switch supplier if they wish.

5.3 There are a number of items to consider in terms of the metering equipment, sending data to a cloud-based platform and sharing near real-time information with consumers.

Prepayment meters:

5.4 With prepayment meters being a common choice for consumers currently, it is essential this will continue to be a significant option for consumers who wish to pay in advance for the service they use. It allows ease of use and the ability to take control of budgeting for energy bills.

5.5 The system will need to support emergency credit, overnight credit, friendly credit, debt recovery and all the safeguards that are supported currently.

5.6 Stakeholder engagement sessions on functional requirements strongly suggested that a 'thin' meter which focuses on a centralised data management system for processing and storage is a better long-term option than a meter that processes data and stores it physically within the meter, 'thick meter'. Over the long term this can be lower cost, lower maintenance and increase security because of the ability to run more frequent software and security updates. For these reasons the Oversight Group and industry will explore how the new meters can best deliver the service to consumers who choose prepayment functionality.

5.7 We propose the Oversight Group leads a work package on setting functional requirements along with industry and consumer representatives.

5.8 This will explore and set standards and requirements for meters and communications technology.

5.9 For example, the following should be available on an internet based application such as a phone app, there will be accommodations for those who are digitally excluded to ensure they have equal access to information:

- Storage of half hourly data to make it easier for consumers to access their own historical consumption data.
- The presentation and values (units, price) of data for consumers and the values used.

- Accurate account balance information (amount in credit or debit); Local time; and Status of communication link.

Other examples of proposed functionality are:

- Re-enabling supply. A key functional requirement for safety reasons, is that the consumer is present in the premises and acknowledges that certain criteria are met (e.g. appliances are off) when the supply is re-enabled after self or remote disconnection (which are distinct from outages due to supply faults).
- Remote disablement of the meter will be explored, however, given that disconnections are extremely low, it may be more efficient to send out an engineer to disconnect meters when required and there are also existing codes of practice in place to protect consumers which the Oversight Group will want to maintain to at least the same high standards.
- An alert that can reach suppliers and the network company if the supply is interrupted.
- We recognise that smart metering requirements will develop over time. A key requirement is therefore that the meters and communications equipment will be able to be upgraded remotely. This requirement predominantly reflects the international experience where upgrade problems required the replacement of meters. We would also plan that as few technology permutations should be introduced as possible, which would reduce complexity and reduce risk.
- The setting of a minimum life requirement for meters to be circa 20 years.
- Basic service data will be downloaded at agreed frequencies. This will be determined by the tariffs and services consumers opt for from a range of products offered by suppliers and third parties. Similarly, the network operator will be able, within the constraints of data privacy obligations, to receive information more frequently.
- There are a range of data communications technologies available that have worked elsewhere. These range from commercial mobile networks, private radio frequency, power line communication and Broadband. Linking smart meters up within a building to in home displays and other smart appliances can be done through technologies such as Wi-Fi, Bluetooth or ZigBee. Again these will be explored as a work package to create the functional requirements.

5.10 To take this forward, the Oversight Group will work with industry to help develop the details and reflect the requirements in the regulatory arrangements. It will look to industry to develop the more detailed technical specifications under appropriate governance structures that will ensure interoperability across industry and technologies. It will encourage participants to submit specifications for consideration with appropriate security measures.

5.11 Designing a bespoke system is likely to be expensive and unnecessary, therefore we propose using tried and tested off the shelf meters and systems which have been successful elsewhere.

Questions:

15. **Do you agree that the Oversight Group should develop a list of functional requirements for the meters and data systems to be discussed with industry and consumer representatives? Yes/No- please give further detail**
16. **Can you suggest any improvements to the current payment system for both credit and prepayment meters that should be requirements for the procurement process?**
17. **Commercial mobile networks, private radio frequency, power line communication and Broadband will be explored as potential communications methods to transfer smart meter data. Do you agree these are the main methods and are you aware of any other ways this can be done? Yes/No- please give further detail.**

Section 6: Roll-out strategy

6.1 A well-planned strategy for the roll-out will minimise risk, reduce logistical challenges and cost, to ensure installation and adoption of smart meters goes smoothly.

6.2 A huge effort will be required to get things moving from recruiting, training and sending out staff to install meters, to procuring and integrating new systems, testing and piloting.

6.3 Recognising the diversity of consumers, particularly fuel poor households or areas with communications challenges will be important. Consumers are central to the success of the smart metering roll-out. They need to be willing to make time for the installation of a smart meter; willing to let the installer into their home; and willing and able to optimise their household energy consumption as a consequence of the information provided by smart metering. The same applies to business consumers who may also have specific needs for installation. It's been suggested in LCP Delta's stakeholder engagement that it may be more difficult to schedule appointments for this group and careful planning will be needed to allocate appointments which avoid peak business hours.

6.4 The roll-out will need to be sensitive to the needs of different groups of consumers such as those with particular access needs or other vulnerabilities. To address these areas of specific concern, there will be requirements for additional, specific consumer protections during the roll-out.

6.5 The aim is to ensure that as close as possible to one hundred per cent of consumers are provided with a smart meter, subject to technical feasibility.

6.6 With regards to prioritising the roll-out there will also be consideration of various approaches. These include:

- Consumer segment – for example prioritising prepayment meter users first, or early adaptors of low carbon technologies, or small businesses or vulnerable populations as it will be important for these groups to have access to the benefits.
- Geographical- identify regions where there is a pressing need for infrastructure upgrades areas which would yield greatest benefits first.
- Immediate benefit – prioritise those who have high energy consumption, those who have low carbon technologies already installed or where there is a demand for energy-saving initiatives.
- Meter types – replacing meters near to or at end-of-life, or replacing prepayment ahead of credit meters.
- No prioritisation – tackling all areas and groups together.

6.7 We propose adopting a plan that secures a roll-out for all consumers and will set metrics in this respect. Given the adoption of smart meters across Europe and internationally, traditional meters are likely to become much less available for sale and the smart meter market will be much stronger and more competitive.

6.8 With regards to prioritising and sequencing when groups of consumers will receive smart meters, this will take careful planning. This will be managed by the Oversight Group who will work with industry and consumer representatives to secure the most workable solutions that provide the best outcomes for consumers.

6.9 We recognise there may be a small percentage of consumers and their properties where a smart meter will not be technically feasible, we expect this to be the exception. Solutions will be sought as the roll-out progresses.

6.10 The Oversight Group will also consider and agree how to monitor and report the pace of installation versus readiness of tested systems which can be switched on immediately or at a later date. The Oversight Group will set targets with metrics and monitor progress periodically, with a focus on both quality and quantity. The group will also develop reporting arrangements which will be clear and transparent.

6.11 An indicative timeline will be agreed by the Oversight Group when the software and systems are fully designed.

Questions

18. **Do you agree with the strategic goal that all consumers should have smart meters? Yes/No – please give reasons.**
19. **Do you have any comments on which groups of consumers might be prioritised at the outset to receive a smart meter and which groups should wait for longer or which approach might be most suitable? Please comment.**
20. **Would the same approach be appropriate for the non-domestic sector as for the domestic sector? Yes/No – please give reasons.**
21. **Do you agree that the Oversight Group should set targets and provide reporting at various stages? Yes/No and would you like to comment or provide information which may be relevant in relation to reporting or setting out a roadmap? Yes/No – please comment.**

Section 7: FAQs

What is a smart meter?

7.1 Smart meters are the new generation of electricity meters. Smart meters record your electricity usage in the same way as a traditional meter but then automatically send the readings at regular intervals to NIE Networks.

How do smart meters work?

7.2 Your smart meter records how much electricity you use and securely shares this with NIE Networks. You won't have to take any meter readings manually.

How could a smart meter help me?

7.3 Being able to see how much electricity you use can help you better understand your energy consumption. This can help with budgeting your electricity costs and potentially identify ways in which you can reduce your electricity usage.

Will a smart meter save me money?

7.4 Smart meters will not save money simply by being installed. Generally, you have to be proactive to reduce your electricity costs and lower your bills. It will allow you to keep track of how much electricity you're using and make changes to your usage based on this. In time, electricity suppliers will offer time of use tariffs. These tariffs offer different prices to encourage consumers to use electricity at off-peak times. They offer people cheaper electricity prices when demand and energy prices are at their lowest.

Is a smart meter accurate?

7.5 Smart meters are as accurate as traditional meters. By law all smart meters have to be approved by and certified by the Office of Product and Safety Standards to prove their accuracy.

Are smart meters safe?

7.6 Yes, smart meters are safe. They're covered by strict UK and EU product safety laws.

How is my personal data kept safe when I have a smart meter?

7.7 Personal details such as name, address and bank details are not stored on a smart meter. The meter simply records your electricity reading in the same way as your traditional meter.

What is the link between smart meters and clean air?

7.8 Smart meters will help to reduce our emissions as a collective group. Smart meters help to create a smart energy system. With a truly smart energy system we can try to better match electricity supply with demand and integrate more renewable energy sources such as wind and solar into the system. These forms of electricity generation create less air pollution and emit significant less CO_2 than electricity generation from fossil fuels.

Have other countries already got smart meters?

7.9 There are already over 335 million smart meters installed across the UK, Ireland, rest of Europe, USA, Canada and Australia, helping to keep electricity costs for consumers in those countries as low as possible.

Section 8: Questions

Guiding principles

1. Do you agree with the guiding principles for the programme? Yes/No - and why.
2. Do you have any further suggestions?

Roles and responsibilities

3. Do you agree with the overarching roles that have been set out for each of the organisations above? Yes/No and why/why not?
4. Are there other organisations not mentioned who will need to be assigned a role – please suggest?

Consumer protection and engagement

5. Do you agree that consumer representatives should be involved in the design of the requirements for the new systems and procurement as part of a co-design group? Yes/No - please comment.
6. Do you agree that the language used in this initiative should be reviewed by consumers, and are there titles other than 'smart metering programme' that should be considered for the roll-out?
7. Do you agree that the roll-out needs to be sensitive to the needs of different groups and that the Oversight Group along with consumer representatives should review all aspects of consumer protection to ensure needs are met? Yes/No – please comment.
8. Do you agree that some consumers may have limited scope to cut down on energy consumption or use a smart meter? Yes/No – please comment and if so do you have any recommendations to help support these consumers - yes/no – please comment.
9. Do you have any comments on the plan to review the needs of small businesses in order to consider installation and longer-term support for this group? Yes/No – please comment.
10. Do you agree that suppliers (working with wider industry) should develop time of use or dynamic tariffs so that consumers can take advantage of lower prices at certain times of the day or when there is an abundance of renewable energy in the system? Yes/No- please comment.
11. Do you agree that a coordinated plan is needed to allow trusted organisations to deliver consumer information, advice and support at appropriate points throughout the consumer journey? Yes/No – please comment.

Data management and privacy

12. Do you have any comments on our overall approach to data privacy and consumer consent?
13. Do you have any comments on the proposal to allow trusted organisations to have access to aggregated and anonymised data for lawful purposes?
14. Are there any other specific organisations who should be included to give advice to the data management workstream?

Functional and technical requirements

15. **Do you agree that the Oversight Group should develop a list of functional requirements for the meters and data systems to be discussed with industry and consumer representatives? Yes/No- please give further detail.**
16. **Can you suggest any improvements to the current payment system for both credit and prepayment meters that should be requirements for the procurement process?**
17. **Commercial mobile networks, private radio frequency, power line communication and Broadband will be explored as potential communications methods to transfer smart meter data. Do you agree these are the main methods and are you aware of any other ways this can be done? Yes/No- please give further detail.**

Roll-out strategy

18. **Do you agree with the strategic goal that all consumers should have smart meters? Yes/No – please give reasons.**
19. **Do you have any comments on which groups of consumers might be prioritised at the outset to receive a smart meter and which groups should wait for longer or which approach might be most suitable? Please comment.**
20. **Would the same approach be appropriate for the non-domestic sector as for the domestic sector? Yes/No – please give reasons.**
21. **Do you agree that the Oversight Group should set targets and provide reporting at various stages? Yes/No and would you like to comment or provide information which may be relevant in relation to reporting or setting out a roadmap? Yes/No – please comment.**

Section 9: How to respond

9.1 This consultation will be hosted online at the following website: NI Direct - Citizen Space. The Citizen Space website has been specially designed to be as user-friendly and welcoming as possible for those who wish to complete the consultation. It also allows DfE to rapidly collate results. For this reason, we would encourage anyone who is interested in responding to this consultation to utilise Citizen Space as the method of their response.

9.2 If this is not possible and you would prefer to provide a written response please email WholesaleElectricityNetworks@economy-ni.gov.uk

9.3 When responding via email or in writing, please state whether you are responding as an individual, or representing the views of an organisation (please state the name of the organisation). Please also quote the following reference in your response: “Smart Meters Design Plan Consultation”.

9.4 Responses must be received by 23:59 on **12 December 2024.**