



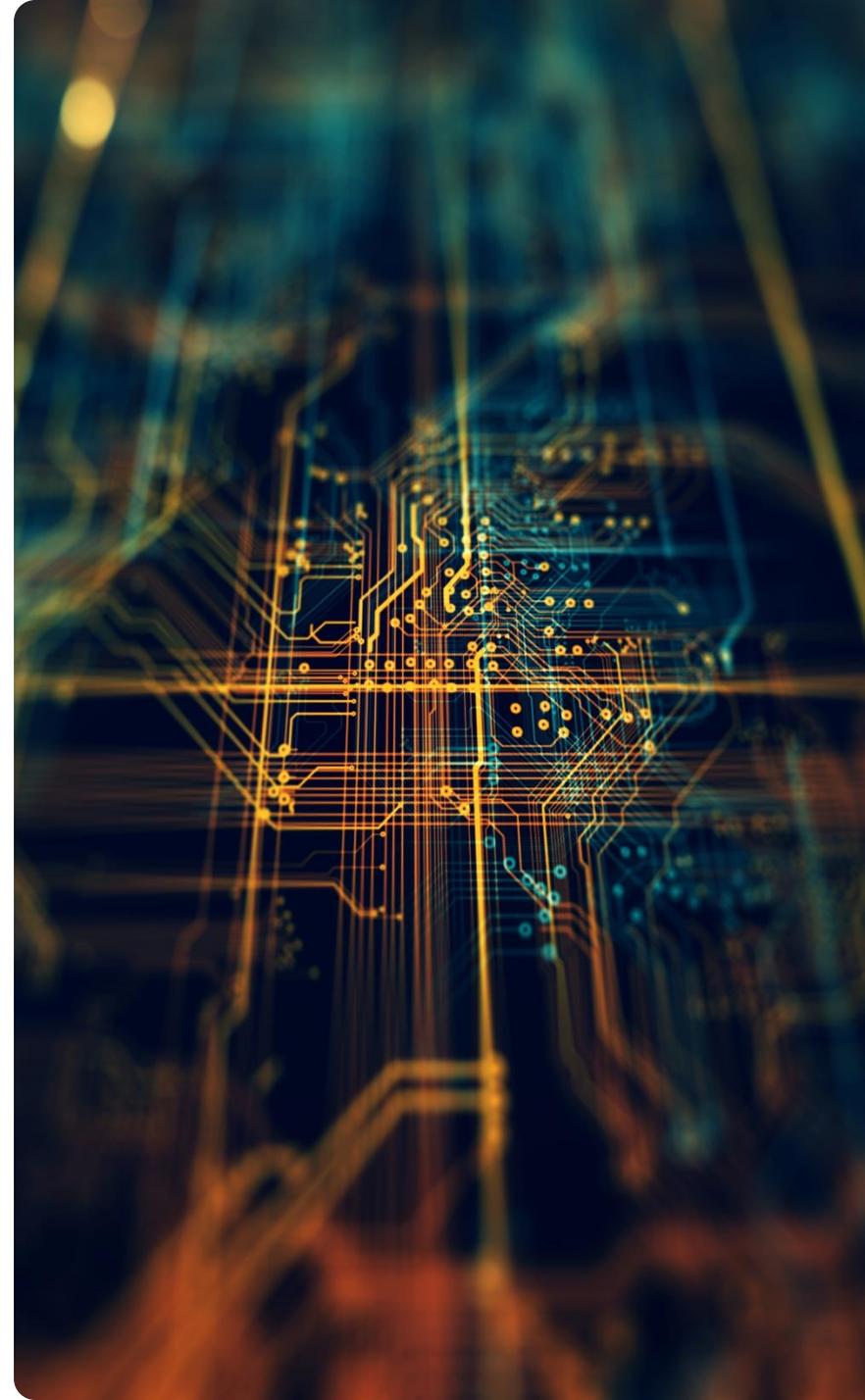
SIF Application AI solutions for consumer centric engagement

December 2025

Bringing Ingenuity to Life.
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Agenda

1. Introductions
2. Project outputs and lessons learnt
3. Work packages summary and how we have met the conditions imposed
4. Overcoming Key Risks and Barriers
5. Plans for Alpha and next steps



01

Project Outputs and Lessons Learned



Project Context and Situation: The near future comes with an unprecedented deployment of infrastructure



National Gas – 3 Molecule Strategy

National Gas is transitioning its infrastructure to accommodate **three types of gases**:

- **Natural Gas / Biomethane**
- **Hydrogen (H₂)**
- **Carbon Dioxide (CO₂)**

This shift involves **new builds and repurposing** of existing infrastructure at a scale not seen in over a decade.



NGET – Electricity Transmission Challenges

National Grid Electricity Transmission (NGET) is facing the challenge of scaling electricity transmission **at unprecedented rates** to integrate **new renewable energy**. This requires:

- Rapid infrastructure rollout.
- Improved public understanding and acceptance.
- Engagement strategies that reflect **local priorities** and build **trust**.

The Engagement Challenge

Traditional engagement methods, **leaflets, letters, town halls, consultations**, are no longer sufficient. They are:

- **Too slow** to match the pace of infrastructure rollout.
- **Resource-intensive**, limiting scalability.
- **Often ineffective** at reaching diverse and digitally excluded communities.

Without modern engagement, projects risk:

- Planning delays, increased objections, Cost overruns and reputational risk. Missed opportunities for inclusive participation.

The Need for AI-Driven Solutions

NG/NGET have **explored how AI can modernise engagement** by:

- Identifying and segmenting key pain points across stakeholders.
- Uncover key potential solutions that align to customer needs.
- Enable scalability of the solutions to have the intended effect.



Stakeholder engagement revealed 7 key themes regarding the primary pain points faced across consumer engagement

Too much to process in too little time.

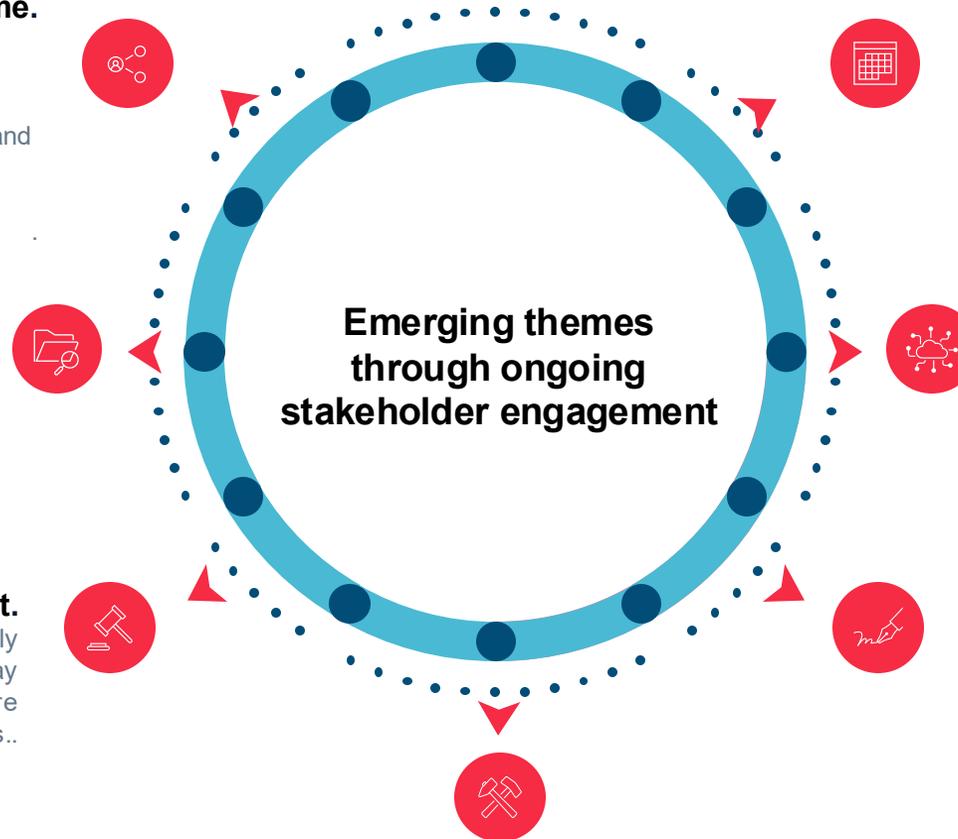
Big consultations create thousands of comments that must be logged, coded, analysed and evidenced. Inquiries (e.g. Environmental Information Regulations requests) must be answered in short periods of times and often need input from experts plus legal review.

EIRs and complaints used tactically.

Coordinated groups can send many similar information requests or duplicated consultation responses. Teams end up answering the same questions and waste time. Interviews suggest that such tactics are used to try to create meaningful delays on projects.

Answers aren't consistent.

There isn't one, internal searchable portal for previously agreed wording and responses. Different projects can say things slightly differently, which opponents then compare to find contradictions..



Information is hard to understand. Residents want a clear “what does this mean for me?” with simple language and property-specific maps or visuals. Long EIAs and technical reports are difficult to navigate and find direct, specific impacts

Operational time pressure. Overlapping projects shrink the time available for engagement. Venue checks for access, safety and translation still require in-person work.

Competing narratives spread fast. Myths such as “underground everything” drive queries and complaints unless teams reply quickly with consistent, referenced explanations of costs and trade-offs. When consumers can get quick responses through alternative channels such as social media they tend to trust and rely on them rather than engaging through the official channels.

Hard to reach the right mix of people.

Evening meetings and long PDFs mean young people, disabled people, rural residents and time-poor households are under-represented. Many websites and forms still fail basic accessibility checks, so people disengage.

Sources: CEE Consumer Insights Report

Driving engagement excellence by converting overload into accessible, trusted communication

Stakeholder Group	Main Pain Points
National Gas Internal Teams	<ul style="list-style-type: none"> • New complex projects mean engaging large, dispersed and diverse communities • Large volumes of feedback through multiple channels and consultation needs to be analysed and considered to inform planning • Technical information for public is hard to interpret, reducing clarity and trust. • No centralised portal for previously shared information leads to inconsistency across projects. • Different CRMs and usage hinders targeted outreach and centralised stakeholder information.
NGET Internal Teams	<ul style="list-style-type: none"> • Large delivery footprints generate high volumes of feedback, delaying insight integration. • Compressed timelines and overlapping outages reduce time available for engagement. • Lack of centralised response repository causes inconsistencies and planning risks. • Difficulty engaging youth due to inaccessible formats and traditional outreach methods.
Gas Distribution Networks	<ul style="list-style-type: none"> • Difficulty in receiving quick, accurate and legally checked answers with a lack of a central source of consolidated, referenceable information • Coordination of messages and timing with other utilities is difficult resulting in confusion • Big system ideas such as hydrogen feel abstract and far from consumer concerns
Consumer Advocacy Groups	<ul style="list-style-type: none"> • Many websites and forms fail accessibility standards (e.g., WCAG 2.2 AA), excluding disabled users. • Rigid call-centre scripts and technical manuals create dependency and safeguarding risks. • Digital-only engagement fails to persuade or reach vulnerable groups. • Need for plain-English, rights-based, easy-read information tailored to individual impacts.
Local Authorities/ Regional Partnerships	<ul style="list-style-type: none"> • Limited visibility into engagement workflows and response mechanisms. • Lack of tailored communication for commercial and renewable energy stakeholders. • Repetitive EIR queries and inconsistent messaging delay project understanding.
Academia	<ul style="list-style-type: none"> • Coordination challenges due to overlapping outages and compressed planning timelines. • Lack of localised engagement formats and trusted intermediaries. • Difficulty aligning infrastructure projects with community priorities.
Smaller Community Groups	<ul style="list-style-type: none"> • Limited access to granular, anonymised data for research and policy development. • Need for evidence-based engagement strategies to support infrastructure planning. • Barriers to collaboration due to data sharing constraints and lack of transparency.



Key AI guidance

Internal (NG/NGET Teams)

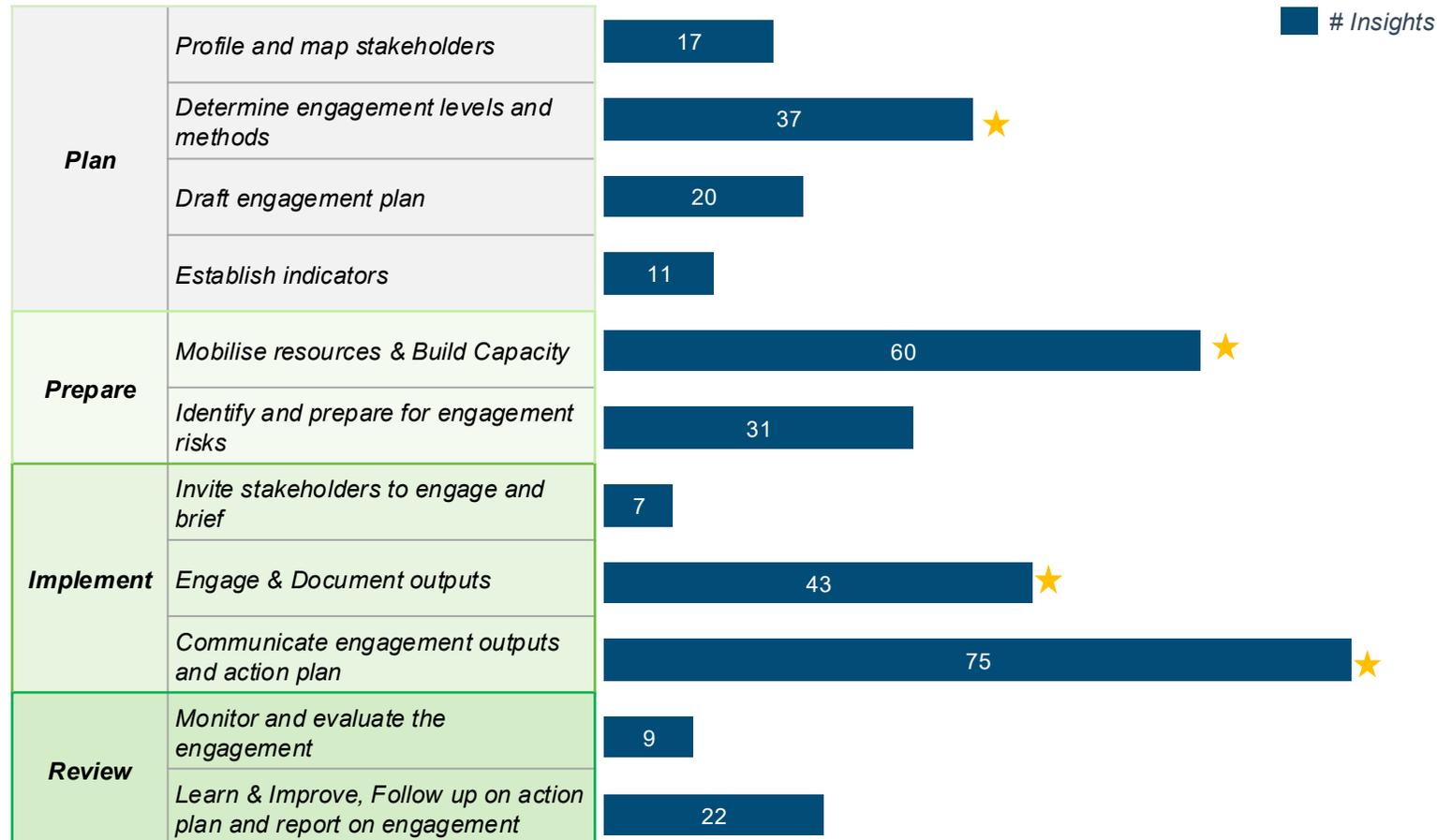
- AI for back-office acceleration: ingest, cluster, tag, and route feedback; automate evidence packs and regulatory submissions.
- AI-powered retrieval and consistency: central knowledge base, pre-populated responses, traceability, and version control.
- Automated triage and smart routing to SMEs; change-request tracking.
- Human-in-the-loop for all public-facing outputs; privacy and accessibility by design.

External (Community Stakeholders)

- AI for comprehension and access: plain-language summaries, accessible formats, translation, and personalised visualisations.
- Deep-linkable navigation, topic-led FAQs, and auditable “you said / we did” logs for transparency and feedback.
- Assisted channels by default; AI supports but does not replace in-person engagement.
- Privacy, accessibility, and human approval as non-negotiable guardrails.

Over 400 insights show planning and implementation dominate, with clear opportunities for AI to improve connection and efficiency

Number of insights by engagement theme

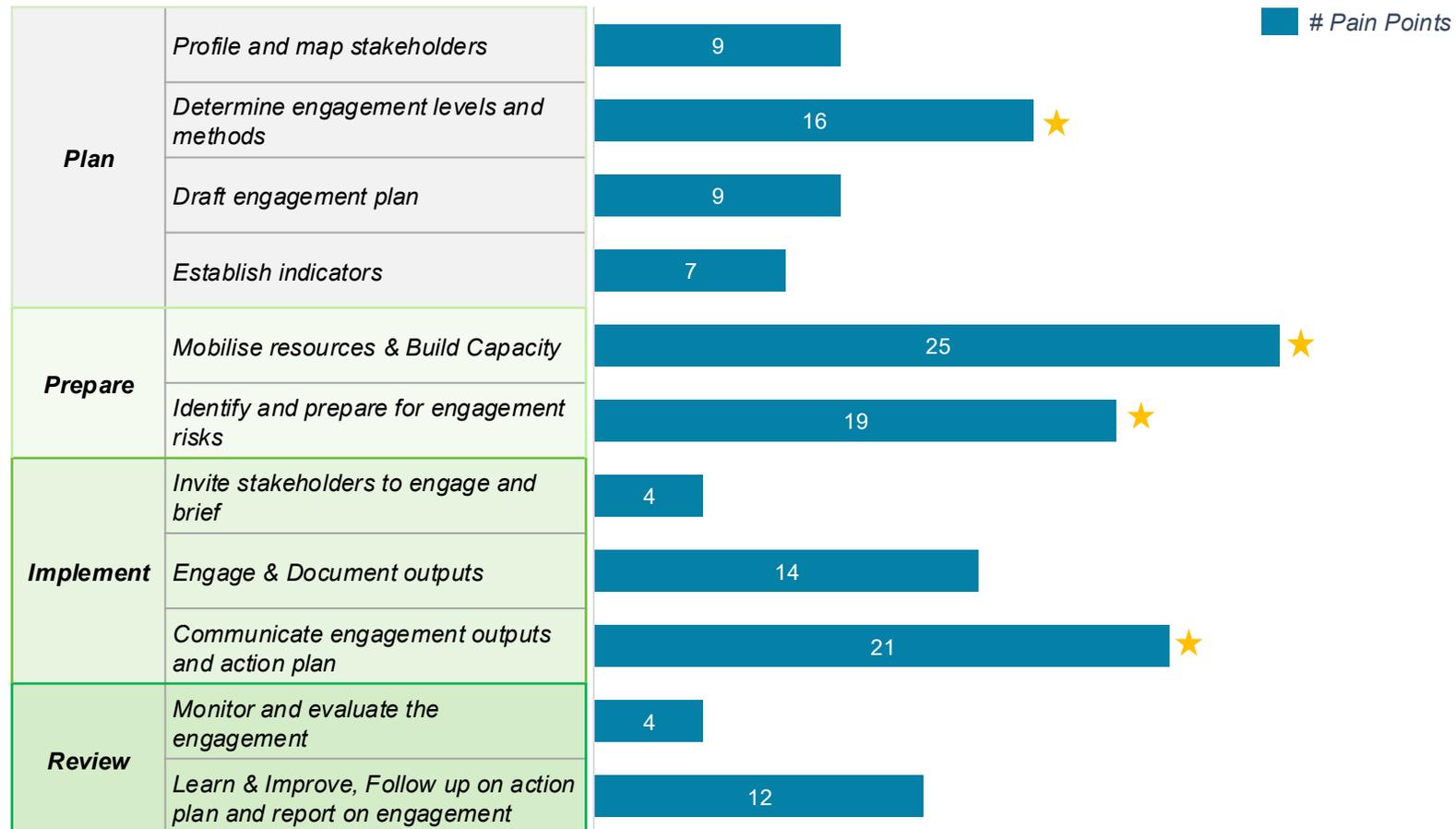


Highlights of analysis

- Implementation holds most insights, showing that day-to-day delivery and communication of engagement outputs remain the most resource-intensive areas. Many interviewees described heavy consultation workloads and “you said / we did” reporting cycles as slowing momentum.
- Planning shows strong analytical maturity, with stakeholders highlighting structured but time-consuming consultation design and compliance processes that could benefit from digital or AI-assisted support.
- Preparation themes point to operational bottlenecks, particularly around: resource mobilisation, risk readiness, and consistent accessibility standards across regions and demographics.
- Review remains relatively under-explored, echoing comments that post-engagement evaluation and evidence tracking are often ad-hoc and could be strengthened through automated analysis.

These insights have been consolidated into 140 distinct pain points and unmet needs demanded by internal NG/NGET teams and consumers

Number of pain points by engagement theme



Key pain points and unmet needs

There is an unmet need for further in person channels and requirement for in person engagement to be accessible for all diverse groups

- This unmet need was identified across 15 insights with consumers demanding more in person engagement, especially for those with diverse needs.

Publish auditable “you said / we did” with clear evidence, actions and quantified outcomes

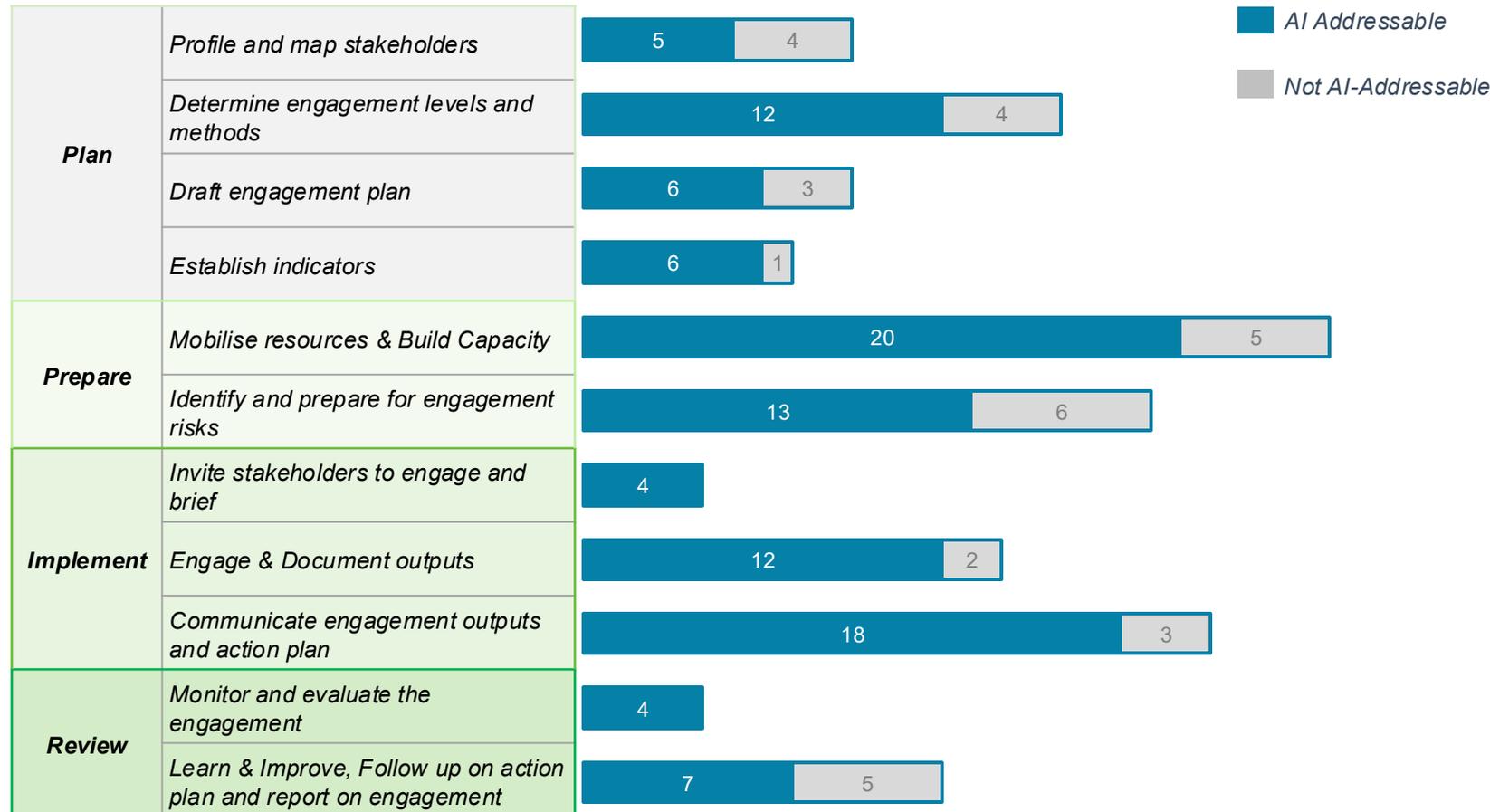
- This unmet need was identified across 11 insights with consumers demanding auditable evidence of actions and outcomes

Make consultation & evidence processes more efficient especially where large volumes of feedback strain resources

- This pain point was identified across 11 insights with internal teams demanding efficient processes to reduce resource strains

We have concluded that AI can address 79% of the overall sum of pain points and unmet needs we have discovered across findings

Number of pain points that are AI-addressable and Non-AI addressable by engagement theme



Key pain points and unmet needs

There is an unmet need for further in person channels and requirement for in person engagement to be accessible for all diverse groups

- Although AI may not solve this pain point directly, leverage of AI solutions will enable increased capacity which can be used for further in person engagement.

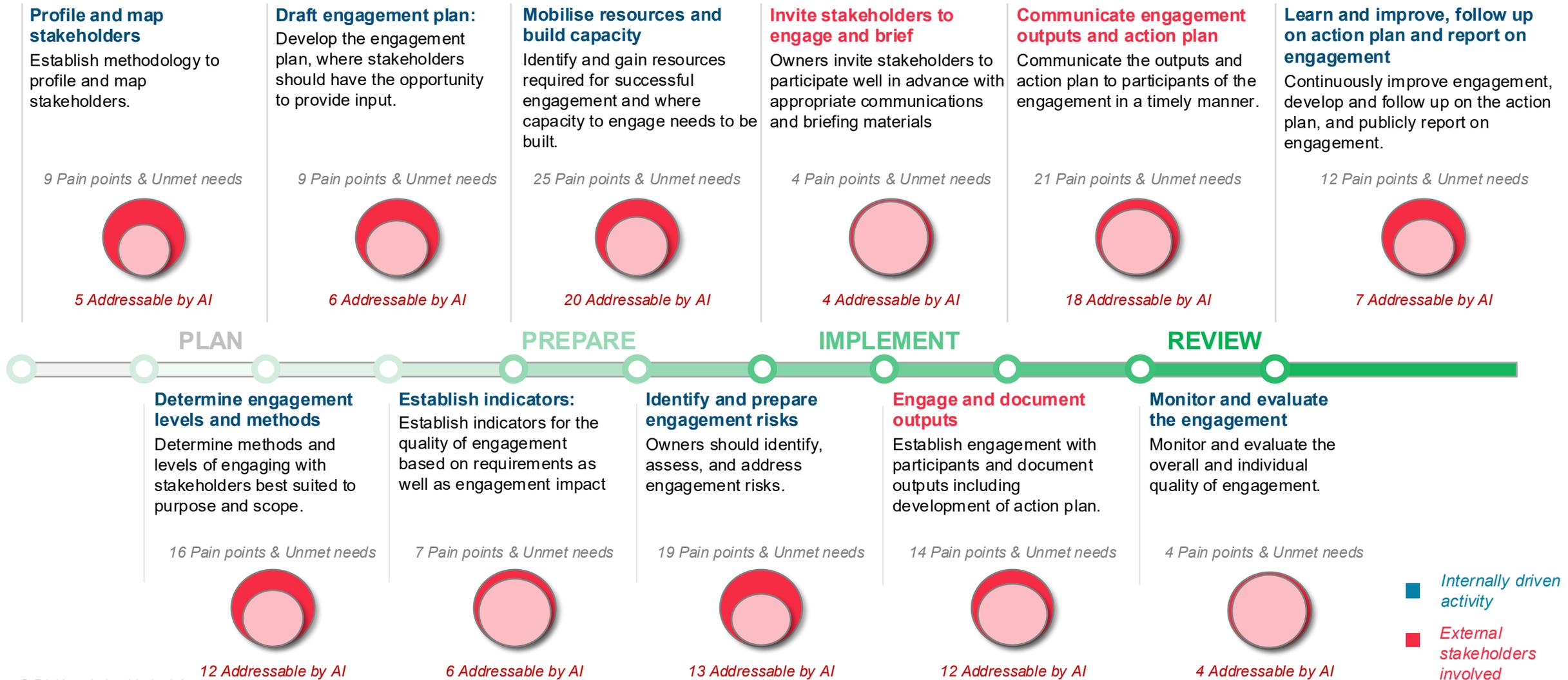
Publish auditable “you said / we did” with clear evidence, actions and quantified outcomes

- AI agents can support in content generation, reducing workload by prefilling templates and automating publication of output content

Make consultation & evidence processes more efficient especially where large volumes of feedback strain resources

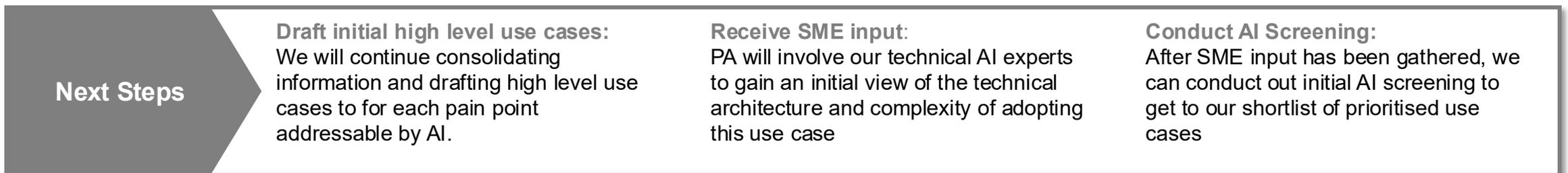
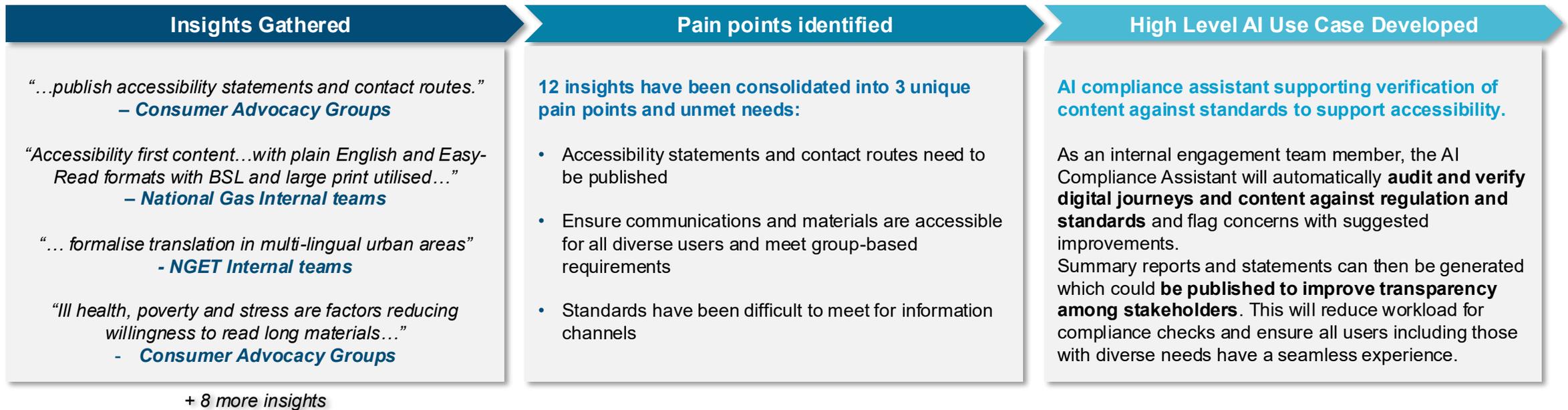
- AI agents can ingest large volumes of structured and unstructured data which enabling completion of previously manual and time burdensome activities

Plotting our insights and pain point identification against the AA1000 consumer engagement workflow standard



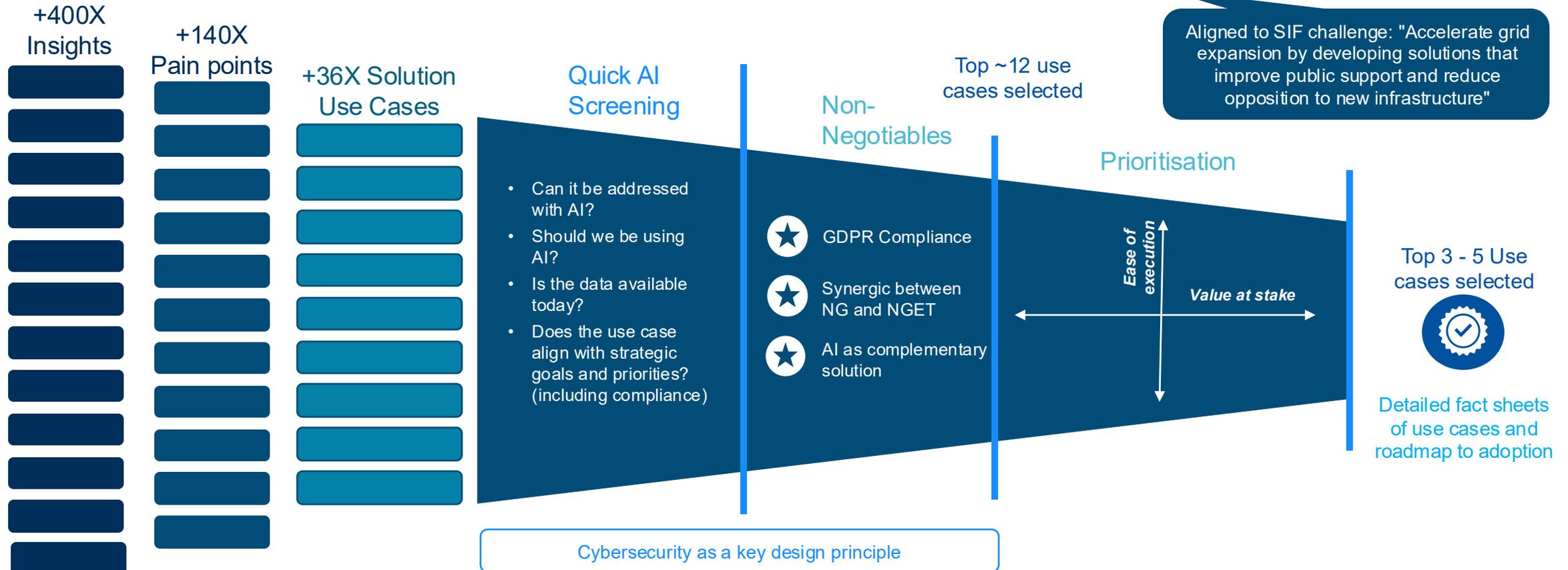
Insights were consolidated into key pain points, which were then translated into high-level AI use cases to address unmet needs

Example below of how insights were translated into high level AI use cases



We agreed on the discovery objective and outlined the methodology to be used

Key Objective: *What are the top three AI solutions that can make public engagement more efficient and improve consumer acceptance to infrastructure projects for National Gas and National Grid?*

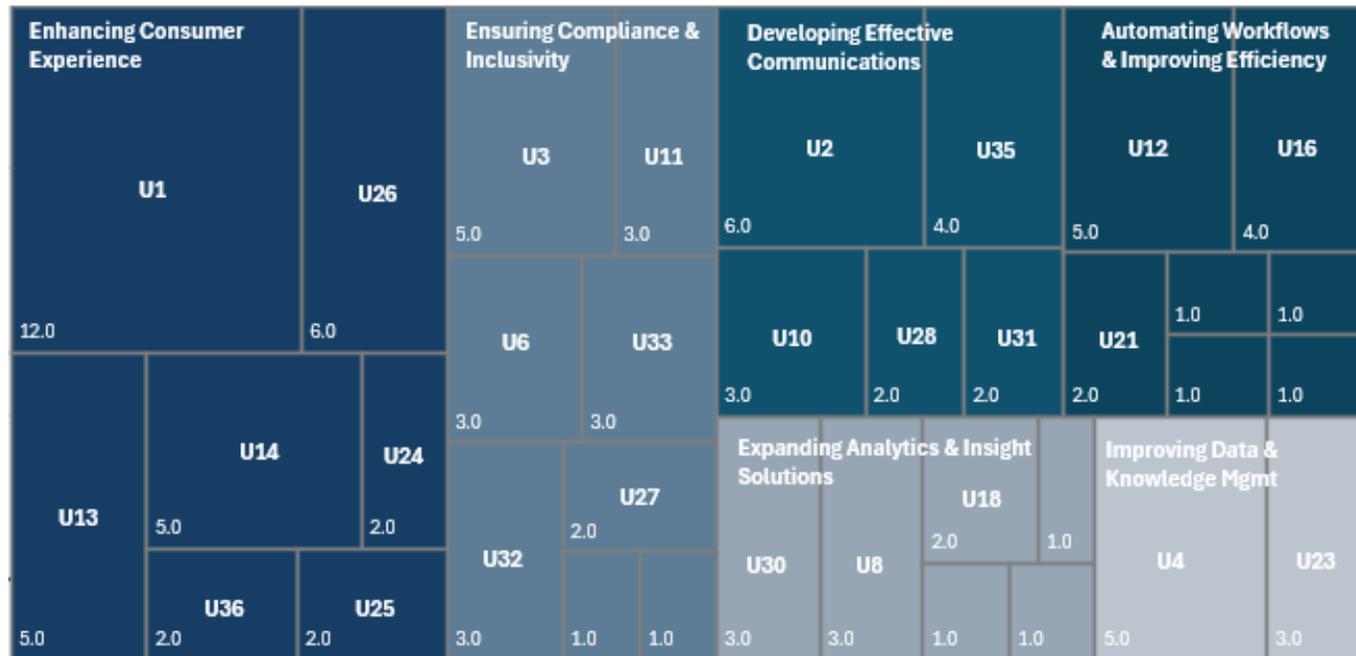


36 AI use cases were identified based on the unmet needs & pain points identified through stakeholder engagement

Use Cases organised by theme and number of mentions during stakeholder engagement

This diagram shows how the 36x AI use cases cluster into key business themes, with box size reflecting how often these insights were mentioned by stakeholders across reports.

This helps prioritise where AI can drive the greatest impact, ensuring we focus on the areas most aligned to business demand and operational priorities.

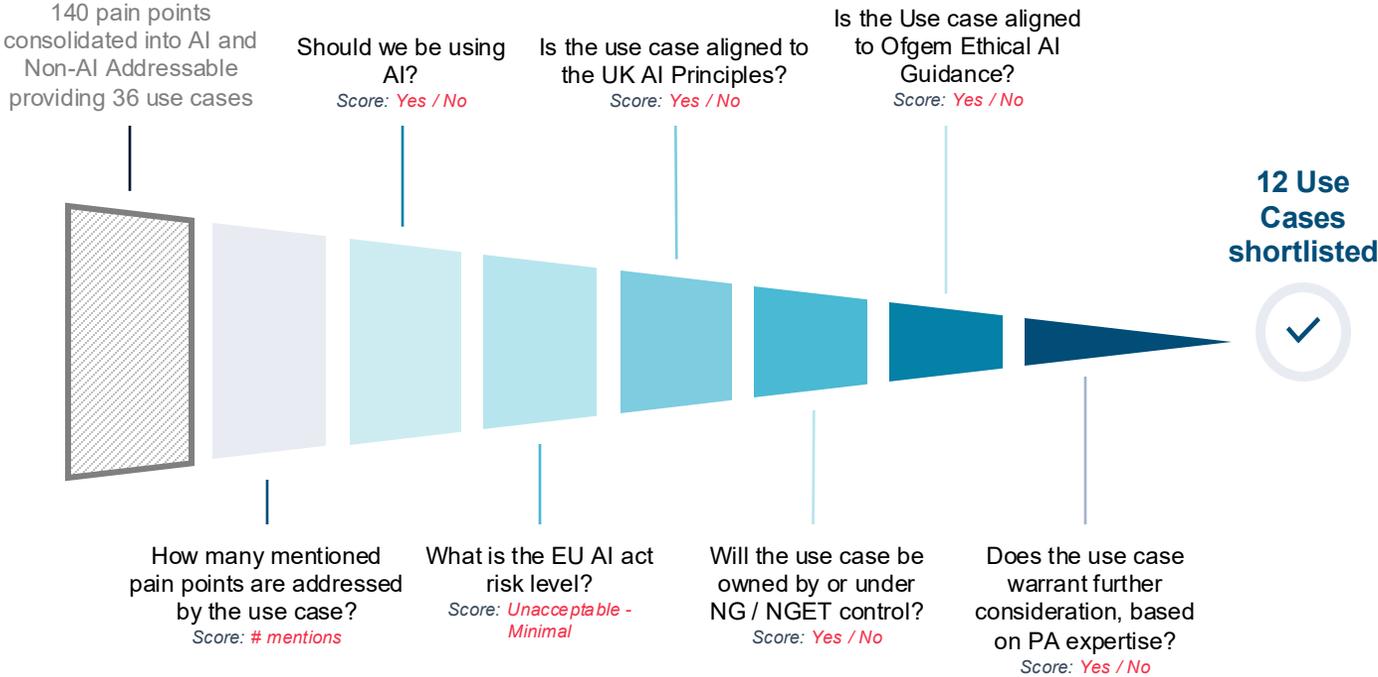


All 36x Use Cases identified in this engagement

- Hyra: AI Chat Assistant for inclusive and transparent engagement
- Luma: Adaptive Engagement solution for tailored communications
- AI compliance assistant
- AI driven central knowledge hub
- AI powered modelling agent
- AI powered risk sentinel
- AI-powered engagement chat assistant
- Benefits quantification solution
- Connection coordination AI for scheduling and preparing engagement
- Consistent communications assistant
- Data representation system to flag underrepresentation of groups
- Document & Response automation solution for template pre-population
- Eligibility & Funding Navigator
- Engagement planning optimisation tool
- Equity monitor to detect equity concerns
- Evidence generation assistant
- Forecasting tool for future grid connections
- Geospatial mapping studio to visualise project impact areas
- Horizon scanning assistant
- Installation coordination agent
- Installation hand over assistant
- Knowledge retrieval and answering system
- Multichannel data consolidation assistant
- Multi-format content renderer for accessibility
- Outage communications assistant
- Syncc: Community co-design toolkit for engagement processes
- Regulator coordination agent
- Retrofit upgrade bundle sign up booster
- Safeguarding monitor to flag exploitation risks from vulnerable individuals
- Sentiment analysis agent to identify perceptions of narratives
- Staff Training Copilot
- Standards and best practices operationalisation agent
- Standards and Principles evolution agent to improve existing practices
- Suggestive B2B tailoring agent
- Trusted channel optimisation agent
- Trusted Energy AI-powered channel

Through initial screening we have narrowed these down into 12 shortlisted use cases for prioritisation

Criteria used to prioritise use cases for further exploration



All 36x Use Cases Identified in this engagement

1. Hyra: AI Chat Assistant for inclusive and transparent engagement
2. Luma: Adaptive Engagement solution for tailored communications
3. AI compliance assistant
4. AI driven central knowledge hub
5. AI powered modelling agent
6. AI powered risk sentinel
7. AI-powered engagement chat assistant
8. Benefits quantification solution
9. Connection coordination AI for scheduling and preparing engagement
10. Consistent communications assistant
11. Data representation system to flag underrepresentation of groups
12. Document & Response automation solution for template pre-population
13. Eligibility & Funding Navigator
14. Engagement planning optimisation tool
15. Equity monitor to detect equity concerns
16. Evidence generation assistant
17. Forecasting tool for future grid connections
18. Geospatial mapping studio to visualise project impact areas
19. Horizon scanning assistant
20. Installation coordination agent
21. Installation hand over assistant
22. Knowledge retrieval and answering system
23. Multichannel data consolidation assistant
24. Multi-format content renderer for accessibility
25. Outage communications assistant
26. Syncc: Community co-design toolkit for engagement processes
27. Regulator coordination agent
28. Retrofit upgrade bundle sign up booster
29. Safeguarding monitor to flag exploitation risks from vulnerable individuals
30. Sentiment analysis agent to identify perceptions of narratives
31. Staff Training Copilot
32. Standards and best practices operationalisation agent
33. Standards and Principles evolution agent to improve existing practices
34. Suggestive B2B tailoring agent
35. Trusted channel optimisation agent
36. Trusted Energy AI-powered channel

The top 12 AI use cases drive both internal efficiencies and support external engagement processes, from access to trust

U1 Hyra: AI Chat Assistant that provides Inclusive and transparent engagement.

Goal: Accelerate digital engagement and understanding for consumers.

Focus: Accessibility-first triage to route users to relevant information or human support whilst providing clear, accessible project updates

How It Works: Identifies user needs, provides translations, and assists with event sign-ups. Triage for human interaction when necessary.

Value: Saves time for consumers. Ensures capacity for those requiring additional support and encourages informed engagement.

U2 Luma: Adaptive Engagement solution for personalisation to make communications accessible, relevant and inclusive

Goal: Enhance relevance and effectiveness of engagement communications.

Focus: Personalizing content for diverse audiences and local areas.

How It Works: Analyses historical engagement data. Generates tailored messages and tests effectiveness.

Value: Reduces manual content creation. Improves engagement quality and inclusivity.

U3 AI compliance assistant supporting verification of content against standards to support accessibility.

Goal: Maintain regulatory and standards compliance across digital journeys.

Focus: Automated auditing and improvement suggestions for content.

How It Works: Reviews content against compliance requirements. Generates summary reports for transparency.

Value: Reduces manual compliance workload. Ensures inclusive, seamless user experiences.

U9 Connection coordination AI that handles scheduling and prep so teams can focus on impactful conversations, not logistics.

Goal: Simplify coordination of stakeholder interactions.

Focus: Automating scheduling and preparation for meetings.

How It Works: Creates unified calendar views. Prioritises participants and generates reminders/prep notes.

Value: Reduces administrative burden. Enables more meaningful dialogue.

U12 Document and EIR request response automation solution to pre-populate responses and reduce admin workload

Goal: Streamline repetitive response drafting for consultations.

Focus: Pre-populating templates with accurate, consistent information.

How It Works: Uses historical responses, regulator Q&As, and stakeholder letters. Structures and organizes material for quick drafting.

Value: Cuts down manual rework. Speeds up response times and reduces risk of contradictions.

U14 Engagement planning optimisation tool to reduce sequencing barriers and misaligned engagement efforts

Goal: Maximize participation and resource efficiency.

Focus: Sequencing and timing of engagement activities.

How It Works: Models engagement stages and simulates scenarios. Recommends optimal cadence for interventions.

Value: Avoids planning bottlenecks. Improves consultations and KPI outcomes.

U16 Evidence generation assistant to reduce manual collation

Goal: Ensure transparency and accountability in stakeholder engagement.

Focus: Automating report generation that links feedback to actions with measurable outcomes.

How it works: Aggregates stakeholder feedback and matches it to organisational responses. Generates auditable reports with impact metrics and flags missing actions.

Value: Reduces manual collation time. Improves trust through credible, evidence-based reporting.

U17 Forecasting tool that turns connection data into proactive engagement strategies to prevent delays and build trust.

Goal: Enable proactive engagement planning for grid capacity challenges.

Focus: Predicting future connections and their impact on stakeholders.

How It Works: Analyses approved/pending requests and models capacity constraints. Flags risks and suggests engagement plans.

Value: Prevents reactive firefighting. Builds trust through early communication and transparency.

U23 Multichannel data consolidation assistant for reduced manual data processing and reporting inconsistencies

Goal: Deliver consistent insights across projects.

Focus: Aggregating and cleaning engagement data from multiple sources.

How It Works: Ingests structured/unstructured inputs (surveys, transcripts, analytics). Flags data gaps for remediation.

Value: Eliminates reporting inconsistencies. Strengthens evidence for engagement outcomes.

U26 Syncc: Community co-design toolkit for planning and reduced risk of exclusion / one-sided consultations

Goal: Ensure inclusive and fair engagement processes.

Focus: Co-designing engagement activities for diverse user groups.

How It Works: Runs polls and analyses group priorities. Suggests tailored engagement designs.

Value: Reduces exclusion risk. Improves decision-making and trust.

U30 Sentiment analysis agent to identify perception of narratives and monitor misinformation

Goal: Identify stakeholder perceptions and misinformation for early intervention

Focus: Use publicly available content to know how narratives are perceived.

How It Works: Identifies related online content including articles, social media etc. to identify negatively perceived narratives and misinformation.

Value: Identify where negativity and misinformation exist to intervene with updated communications

U35 Trusted channel optimisation agent for identification and improved effectiveness of communication channels

Goal: Increase credibility and reach among hard-to-engage groups.

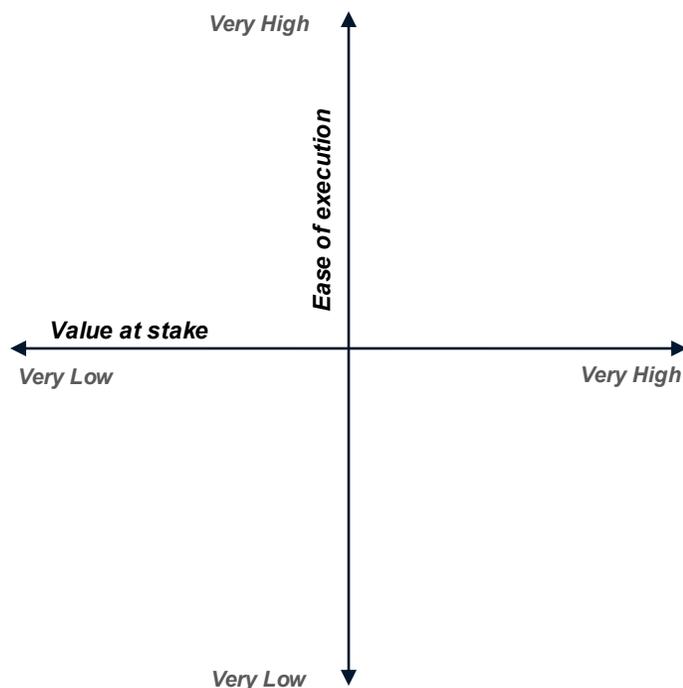
Focus: Optimizing channels and trusted messengers.

How It Works: Identifies underperforming channels. Suggests alternatives (e.g., schools, NHS) and adapts content.

Value: Reduces wasted outreach. Builds trust and boosts response rates.

We defined the deep prioritisation matrix and weighting scale to enable a comprehensive and aligned evaluation of the potential solutions

Use case prioritisation matrix



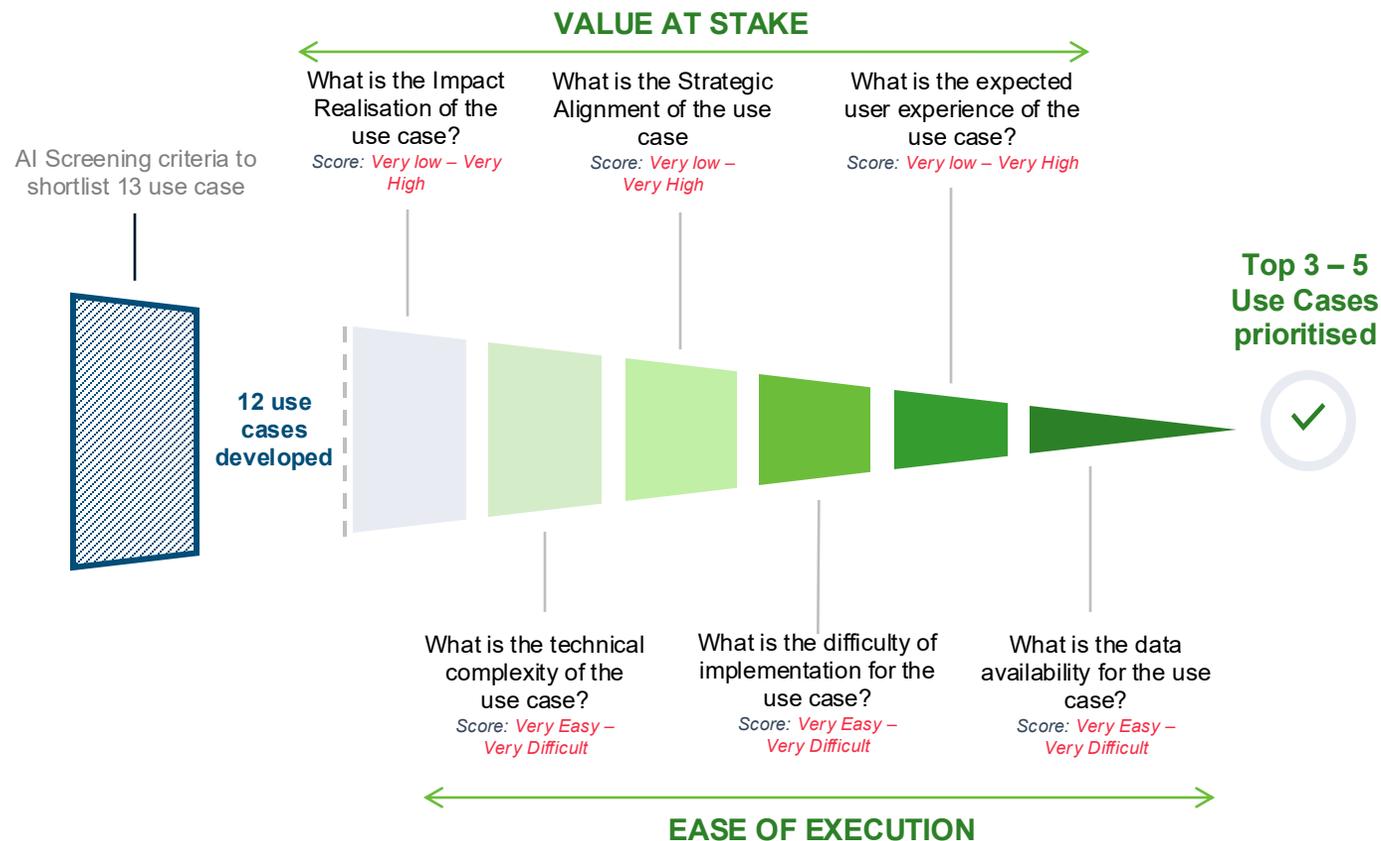
Once use cases are scored across each of the prioritisation criteria, they are visualised on a value / ease of execution matrix to identify priority use cases

'Value at Stake' and 'Ease of Execution' criteria used to score specific use cases

<i>Value at Stake: Prioritisation Criteria</i>		<i>Score</i>	<i>Weight</i>
Impact Realisation	How can the use case contribute to infrastructure deployment speed? How easily can value be measured? How quickly can the use case realise value?	Very High = 5 Very Low = 1	40%
Strategic Alignment	How well does the use case align with NG strategic direction? How well does the use case supports key priority groups?	Very High = 5 Very Low = 1	30%
User experience	Will the use case improve internal efficiency / productivity? Will the use case improve external engagement experience?	Very High = 5 Very Low = 1	30%
<i>Ease of Execution: Prioritisation Criteria</i>			
Technical complexity	How technically complex is the use case? Does the use case require specialised or advanced technical skills to develop / execute?	Very High = 5 Very Low = 1	40%
Implementation	How easy will it be to integrate the use case into current operations? How easily can the use case grow and scale with business needs? What is the level of copilot compatibility?	Very High = 5 Very Low = 1	30%
Data	Can NG/NGET access the data required to implement the use case? Is the required data of sufficient quality? To what extent will issues exist in alignment with CIA Triad framework?	Very High = 5 Very Low = 1	30%

We prioritized the 12 use cases by weighing Value at Stake against Ease of Execution, emphasizing innovation and consumer impact

Criteria used to prioritise use cases for prioritisation



SIF Innovation focus has remained being a priority

Due to the unique nature of requesting SIF funding rather than an internally driven decision for funding, it is important to ensure that the focus remains on what delivers the most positive impact for the consumers and distinguishing between the use cases that should be adopted as part of BAU by NG and those that are complex innovative AI solutions that require SIF funding for implementation.

Hence, we have additionally considered:

- **Build vs Hybrid vs Buy Solutions –**
We expect that low complexity solutions that can be obtained off the shelf with limited barriers to implementation should not be prioritised for innovation funding by SIF and instead be an option for internal NG/NGET investment. **This will ensure innovation is a fundamental criteria for prioritisation.**
- **Consumer led focus –**
We expect that AI solutions supporting external engagement processes for the consumer should be prioritised for innovation funding by SIF as opposed to AI use cases that primarily drive internal efficiencies within the organisation. **This will ensure the consumer remains at the heart of the benefit from this AI solution.**

Consistent with SIF guidelines, we excluded low-complexity off-the-shelf tools from innovation funding that could be directly procured

Recommendations for  Build,  Hybrid and  Buy solutions for each use case

Use Case	Recommendation		
U1: Hyra AI Chat Assistant that provides inclusive and transparent engagement.			
U2: Luma Adaptive Engagement solution for content personalisation to make energy project communications accessible, locally relevant, and inclusive for all audiences.			
U3: AI compliance assistant supporting verification of content against standards to support accessibility.			
U9: Connection coordination AI that handles scheduling and prep so teams can focus on impactful conversations, not logistics.			
U12: Document and EIR request response automation solution to pre-populate responses and reduce admin workload			
U14: Engagement planning optimisation tool to reduce sequencing barriers and misaligned engagement efforts			
U16: Evidence generation assistant to reduce manual collation and formatting time			
U17: Forecasting tool that turns connection data into proactive engagement strategies to prevent delays and build trust.			
U23: Multichannel data consolidation assistant for reduced manual data processing and reporting inconsistencies			
U26: Sync Participatory co-design toolkit for improved performance of planning and reduced risk of exclusion and one-sided consultations			
U30: Sentiment analysis agent to identify perception of narratives and monitor misinformation			
U35: Trusted channel optimisation agent for identification and improved effectiveness of communication channels			

Recommendation Rationale



Custom build solutions should be developed if technological requirements are very complex with multiple AI components. With ownership of data, regulatory compliance risks are minimal.



Hybrid build solutions should be adopted to accelerate development of complex models through API integrations. Data remains internal so regulatory compliance risks are minimal.



Off the shelf solutions should be considered with low complexity models where tools can be easily integrated to successfully complete tasks. However, third party use and ownership of data could cause issues with risk to compliance.

Note: Low complexity solutions that can be bought off the shelf will **not be prioritised for SIF funding use**, but should be considered for internal NG/NGET implementation

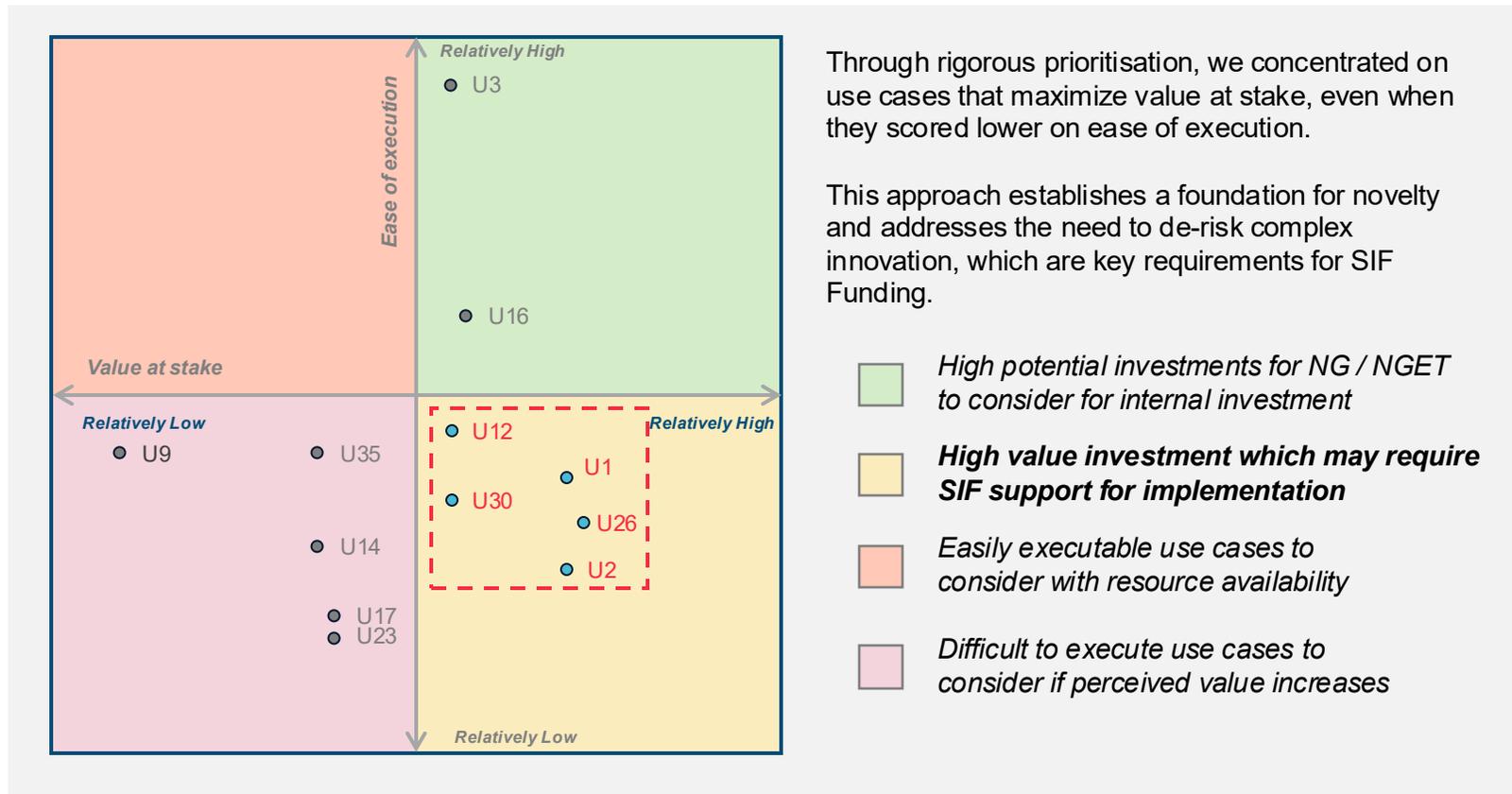
To maximize SIF funding alignment, we favoured use cases that drive external engagement over those solely improving internal processes

Comparison between internal efficiency and external engagement focused use cases

	Internal Efficiency Focused 	vs	 External Engagement Focused
<p>Throughout the shortlisting process we have ensured considering both use cases that are focused on driving internal efficiency and also those providing benefits for the consumer through supporting external engagement process.</p> <p>We have bucketed the use cases into the following groups, where in some cases, we have found these to provide benefits to both internal and external processes.</p> <p>With the expectation that SIF will likely prioritise investments which drive benefits for the consumer, we have scored use cases higher in prioritisation if the focus is benefitting the consumer (or both consumer and internal teams).</p>	<ul style="list-style-type: none">U3: AI compliance assistant supporting verification of content against standards to support accessibility.U9: Connection coordination AI that handles scheduling and prep so teams can focus on impactful conversations, not logistics.U16: Evidence generation assistant to reduce manual collation and formatting timeU17: Forecasting tool that turns connection data into proactive engagement strategies to prevent delays and build trust.U23: Multichannel data consolidation assistant for reduced manual data processing and reporting inconsistencies	<ul style="list-style-type: none">U1: Hyra - Accessibility first triage system to support self navigated digital journeysU2: Luma - Adaptive Engagement solution for content personalisation to make energy project communications accessible, locally relevant, and inclusive for all audiences.U12: Document and EIR request response automation solution to pre-populate responses and reduce admin workload	<ul style="list-style-type: none">U14: Engagement planning optimisation tool to reduce sequencing barriers and misaligned engagement effortsU26: Syncc - Participatory co-design toolkit for improved performance of planning and reduced risk of exclusion and one-sided consultationsU30: Sentiment analysis agent to identify perception of narratives and monitor misinformationU35: Trusted channel optimisation agent for identification and improved effectiveness of communication channels

We found 5 complex/high-impact candidates, requiring SIF funding to bridge the gap between potential impact and implementation difficulty

Use case prioritisation matrix and relative scoring comparison for leading use case identification



Prioritised Use Cases

- Hyra: AI Chat Assistant that provides Inclusive and transparent engagement.**
- Luma: Adaptive Engagement solution for personalised project communications that is accessible, locally relevant, and inclusive for all audiences**
- AI compliance assistant supporting verification of content against standards to support accessibility.
- Connection coordination AI that handles scheduling and prep so teams can focus on impactful conversations, not logistics.
- Document and EIR response automation solution to pre-populate responses and reduce admin workload**
- Engagement planning optimisation tool to reduce sequencing barriers and misaligned engagement efforts
- Evidence generation assistant to reduce manual collation and formatting time
- Forecasting tool that turns connection data into proactive engagement strategies to prevent delays and build trust.
- Multichannel data consolidation assistant for reduced manual data processing and reporting inconsistencies
- Syncc: Community co-design toolkit for improved performance of planning and reduced risk of exclusion and one-sided consultations**
- Sentiment analysis agent to identify perception of narratives and monitor misinformation**
- Trusted channel optimisation agent for identification and improved effectiveness of communication channels

From the 5 shortlisted AI solutions, we selected the top 3 based on Value at Stake, prioritizing those with the highest consumer impact

By consolidating 400+ insights into 140+ pain points, we identified 36 use cases during this engagement. These were aligned to real problems and assessed against AI compliance principles (EU AI Act, UK AI Principles, Ofgem criteria), then evaluated using a matrix considering value at stake (keeping consumer benefit at the core) and ease of execution. Off-the-shelf or low-complexity solutions were excluded, as SIF funding focuses on de-risking high-value, complex innovation.

Methodology



OVERALL SCORE: VALUE AT STAKE

U30 Sentiment analysis agent to identify perception of narratives and monitor misinformation

Goal: Identify stakeholder perceptions and misinformation for early intervention

Focus: Use publicly available content to know how narratives are perceived.

How It Works: Identifies related online content including articles, social media etc. to identify negatively perceived narratives and misinformation.

Value: Identify where negativity and misinformation exist to intervene with updated communications

U12 Document & EIR Request response automation solution to pre-populate responses and reduce admin workload

Goal: Streamline repetitive response drafting for consultations.

Focus: Pre-populating templates with accurate, consistent information.

How It Works: Uses historical responses, regulator Q&As, and stakeholder letters. Structures and organizes material for quick drafting.

Value: Cuts down manual rework. Speeds up response times and reduces risk of contradictions.

U2 LUMA Adaptive Engagement solution for personalisation to make communications accessible, locally relevant and inclusive

Goal: Enhance relevance and effectiveness of engagement communications.

Focus: Personalizing content for diverse audiences and local areas.

How It Works: Analyses historical engagement data. Generates tailored messages and tests effectiveness.

Value: Reduces manual content creation. Improves engagement quality and inclusivity.

U1 HYRA AI Chat Assistant that provides Inclusive & transparent engagement.

Goal: Accelerate digital engagement and understanding for consumers.

Focus: Accessibility-first triage to route users to relevant information or human support whilst providing clear, accessible project updates

How It Works: Identifies user needs, provides translations, and assists with event sign-ups. Triage for human interaction when necessary.

Value: Saves time for consumers. Ensures capacity for those requiring additional support and encourages informed engagement.

U26 SYNCC Community co-design toolkit for improved planning and reduced risk of exclusion / one-sided consultations

Goal: Ensure inclusive and fair engagement processes.

Focus: Co-designing engagement activities for diverse user groups.

How It Works: Runs polls and analyses group priorities. Suggests tailored engagement designs.

Value: Reduces exclusion risk. Improves decision-making and trust.

AI Powered Solutions for Community Engagement

This suite of three specialized AI-powered tools revolutionizes how organizations communicate with and involve the public. Each tool addresses a unique aspect of community engagement, from initial contact and information provision to collaborative design and targeted messaging.

HYRA – Harmonised Your Response Assistant

Your Intelligent First Point of Contact

An AI chat assistant providing clear information on infrastructure projects, via voice and text.



Adaptive & Accessible Communication Adjusts to individual needs, communication preferences, and accessibility requirements for every user.

Reduces Internal Workload & Builds Trust Frees up human teams by handling common queries and ensuring consistent, reassuring updates.

SYNCC – Synthesis for Community Co-Design

An AI Toolkit for Inclusive Co-Design

Empowers engagement teams with tools for participatory and fair community involvement.



Gathers Deep Community Insights Uses polls, sentiment analysis, and priority-setting exercises to understand diverse group needs.

Fosters Trusted, Data-Informed Decisions Improves input quality and reduces exclusion, leading to better planning outcomes.

LUMA – Localised Understanding & Messaging Alignment

Your AI Partner for Tailored Messaging

Generates group-specific communications that are accessible, inclusive, and locally relevant.



Creates Hyper-Localised Content Produces adapted visual explainers, short podcasts, and video snippets for different communities.

Maximises Engagement & Reduces Manual Effort Highlights what resonates with communities, providing media or misaligned communications.



SYNCC: Synthesis for Community Co-Design

Improving planning and reduced risk of exclusion / one-sided consultations

Summary

SYNCC provides engagement teams with an AI-driven participatory co-design toolkit that supports inclusive and fair engagement across all user groups. It runs co-design aids such as polls, sentiment analysis, and priority-setting exercises, and ingests information on the needs and preferences of different community groups. Using these inputs, SYNCC generates tailored engagement designs that reflect the requirements of each group and ensure that engagement processes work effectively for every consumer which can significantly improve the number of participants that are effectively engaged with. This reduces the risk of exclusion and one-sided consultations, improves the quality of input, and supports better-informed and more trusted decision-making throughout the planning process.

High Level Features

- Tailored Engagement Designs:** The toolkit generates engagement processes that reflect the needs and preferences of different community groups,
- Interactive Polls & Sentiment Analysis:** AI analyses group-level insights on participation in polls / exercises
- Inclusivity Monitoring:** Tracks participation across demographics and flags underrepresented groups
- Transparent Feedback Loops:** Provides auditable logs, so users see how their input shapes decisions

Key pain points supported

- Engagement designs supporting all groups**
Engagement processes need to consider each groups needs affecting their ability to engage.
- Taking a collaborative approach to engagement**
Existing engagement is one way rather than a collaboratively designed process
- Driving participation through toolkits**
There is an unmet need for participatory first toolkits

Legal, Cybersecurity & Ethical Considerations

Limited expected risk level in accordance with the EU AI Act:

- Article 50 transparency:** Must disclose it is an AI system unless obvious from context with outputs marked as AI generated
- Ofgem alignment:** Acceptable as participatory codesign improves inclusivity and reduces risk
- UK AI Principles:** No expected risk against alignment to UK AI Principles

Example scenario of future use

Scenario: National Gas is planning a large-scale pipeline upgrade across multiple cities, requiring input from multiple consumer groups.

Problem Statement: Top-down schedule-driven engagement leads to limited participation with risk of late and high impact objections

Presence of AI Use Case: The AI solution creates e.g. digital surveys on preferences (in person, digital, phone call etc.) from stakeholder groups. It then recommends engagement strategies tailored to each group's needs such as virtual town halls for remote communities, digital communications to younger generations and targeted workshops for environmental advocates.

Data, Technical & Implementation Challenges

- Moderate technical complexity:** This use case requires multiple AI components but are well established methods
- Moderate implementation challenges:** Key challenges include ingestion of varied group-level inputs
- Moderate Data Availability:** Dependency on gaining local consumer data to understand engagement design preferences

Impact

Value at Stake

Very High



Ease of Execution

Moderate



EU Risk Level

Limited



6 Pain points

+19
insights
addressed

++ Consumer Understanding
With increased uptake in participation.

+++ Engagement
With designs tailored to consumers

£6m - £10m Potential Savings*
Over 10 years

*Note potential savings are high level estimates, details in appendix

Stakeholders Impacted



National Gas & NGET Internal Teams



Local Council / Authorities



Community / Consumer Groups



Local Residents & Businesses



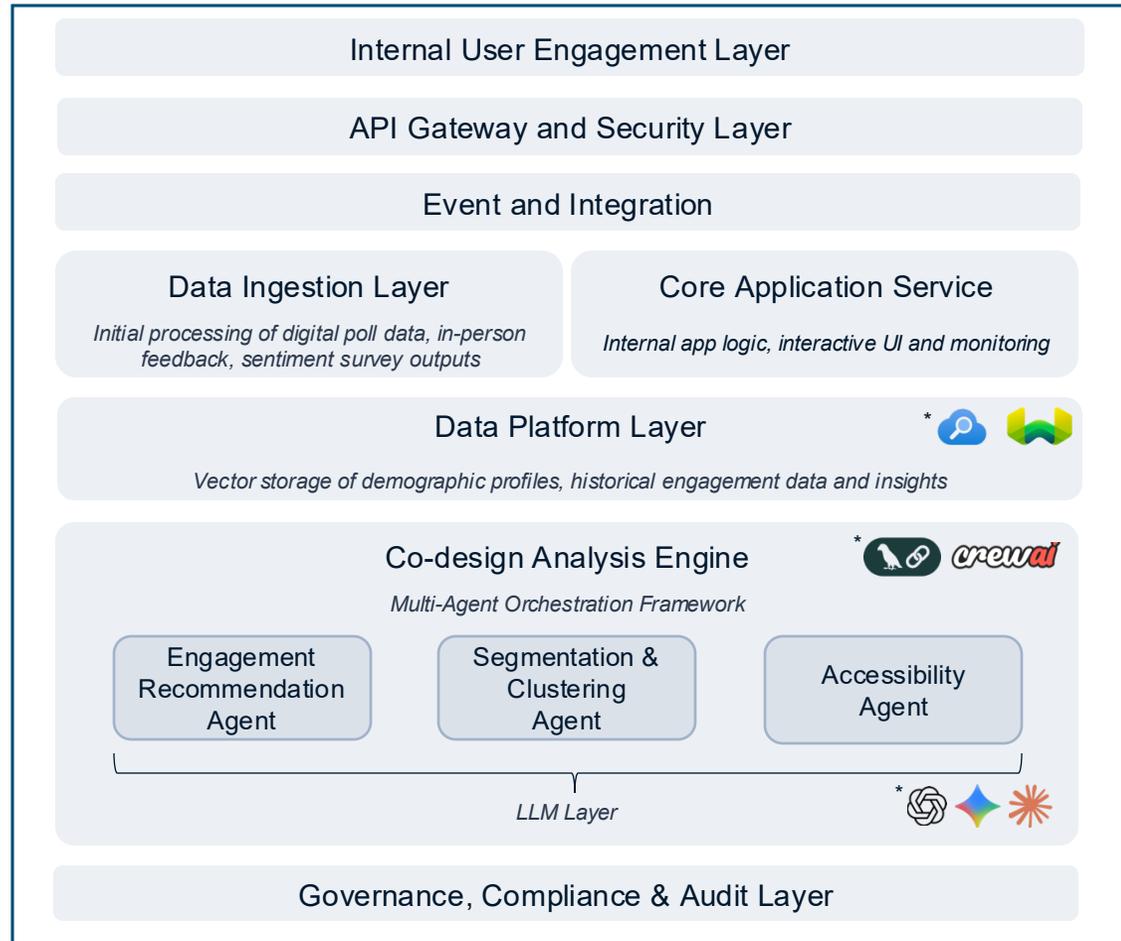
Vulnerable consumer groups (i.e. Time poor, Digitally excluded etc.)

- **Directly Impacted (i.e. Solution provides benefits for the user)**
- **Indirectly Impacted (i.e. Presence of solution provides benefits to stakeholder)**

SYNCC: Synthesis for Community Co-Design

Improving planning and reduced risk of exclusion / one-sided consultations

Technical architecture diagram



Potential **Off the shelf** products or tools for **Hybrid** solutions

We have identified a sample of solutions that could be considered to support in use case development: (Note this list is not exhaustive)



Copilot plugins can support the use case for development and review of data. However, the core co-design logic for the AI solution should be custom built.



Tools like SurveyMonkey could be leveraged and integrated as a polling tool for the hybrid AI solution.



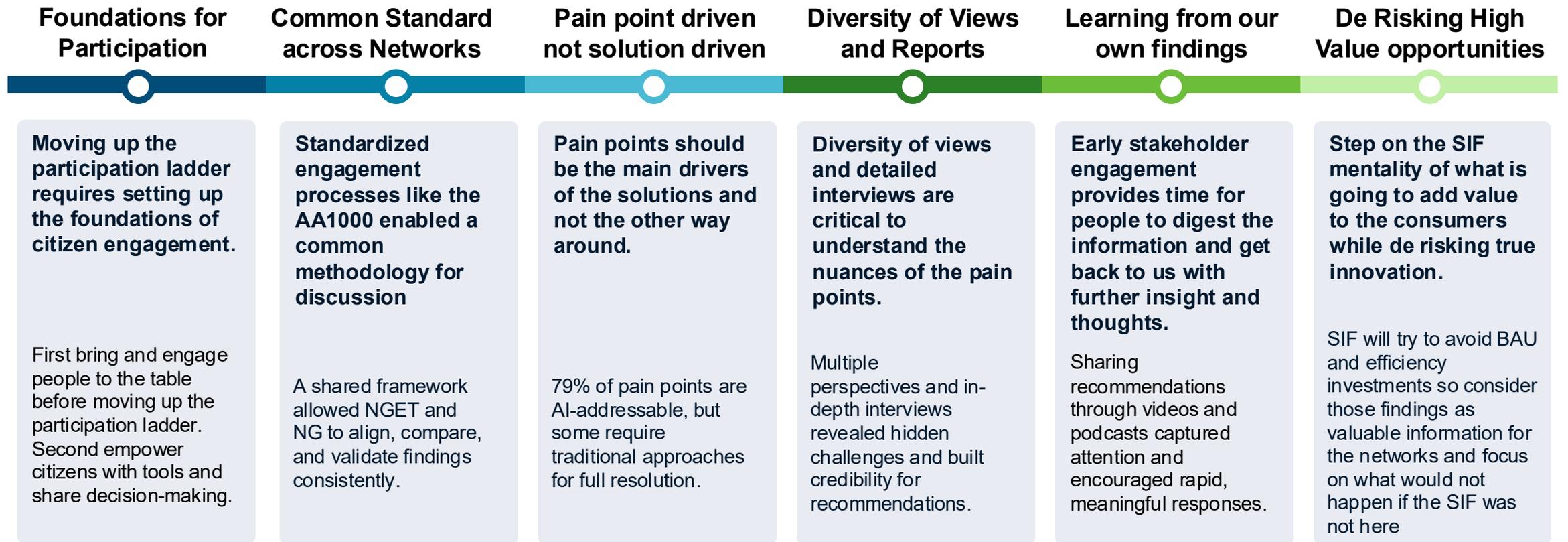
Govocal is a community engagement platform that supports API integration for a hybrid solution build. This also provides numerous relevant functions that can be used for accelerated development of this particular use case.



Social pinpoint is a community engagement platform that supports effective public participation by encouraging engagement through various tools.

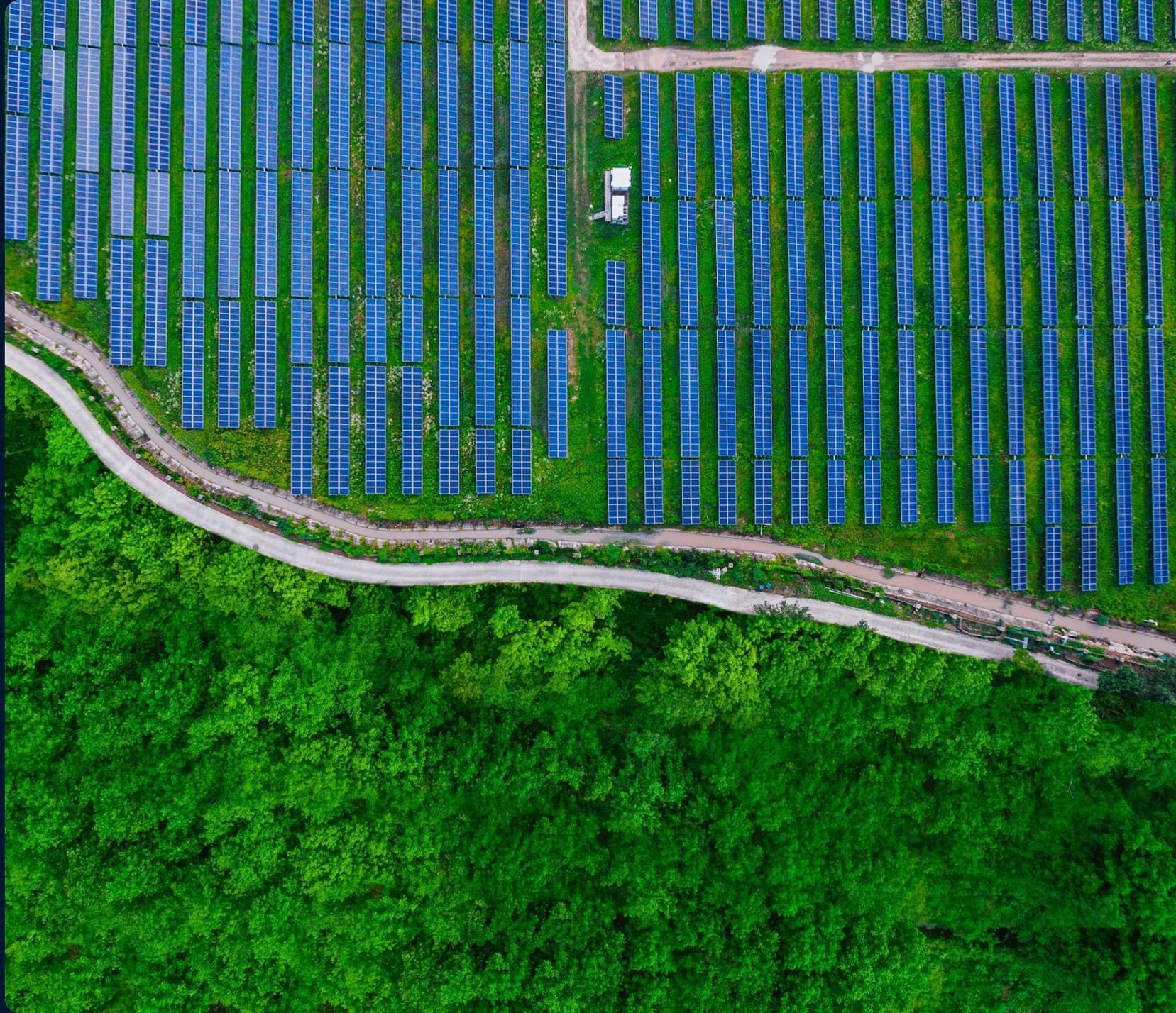
Key Lessons Learned

The SIF Discovery project identified and prioritized AI-driven solutions to address critical pain points in consumer engagement for infrastructure projects. By focusing on consumer value, compliance, and innovation, the project delivered actionable insights and a shortlist of high-impact use cases.



02

Summary of Each
Work package and
key conditions met



Work Package Summary and Key deliverables

Work Package	Summary	Key Deliverables (from Final Report)
WP1 – Project Management	Ensure effective coordination, governance, and oversight of the project. Manage timelines, resources, risks, and stakeholder communications to ensure successful delivery.	<ul style="list-style-type: none"> - Developed the Consumer Value Plan - Governance charter and project reporting - Data protection plan and risk register - Consortium & governance setup - Alpha and Beta phase planning and reporting
WP2 – Uncovering Consumer Needs	Build a robust, evidence-based understanding of key consumer groups, unmet needs, priorities, and challenges.	<ul style="list-style-type: none"> - Consumer insights report: <ul style="list-style-type: none"> - Delivered 22+ interviews and analysed 25 reports - Analysed stakeholder groups to engage and why - Consumer Advocacy Groups detailed engagement summary - Summarised the biggest pain points identified by stakeholder groups
WP3 – AI Use Case Identification	Identify and prioritize AI use cases by analyzing consumer needs, mapping AI solutions to business challenges, and validating feasibility.	<ul style="list-style-type: none"> - Identification of pain points and unmet needs for AI intervention - Mapping of 140+ pain points across the engagement process - Develop the first systematic mapping of pain points for engagement teams across a AA1000 engagement standard. - Identification of 36 AI-enabled use cases that would address the key pain points encountered - Rigorous assessment against EU AI Act, UK AI Principles, and Ofgem AI criteria - Off the shelf solutions assessment, consumer value assessment and novelty assessment. - Prioritization framework applied (consumer value, strategic alignment, feasibility, etc.)
WP4 – Use Case Evaluation, Prioritization & Roadmap Development	Evaluate and strategically prioritize AI use cases for implementation, develop a roadmap, and prepare for further investment.	<ul style="list-style-type: none"> - Shortlist of 12 use cases, with top 3 prioritized for Alpha stage assessment - Detailed factsheets for top 3 use cases (HYRA, SYNCC, LUMA) - Alpha deployment roadmap (from discovery to prototype and commercialization) - Initial economic modelling framework and value for money metrics - Final Discovery Phase report

03

Overcoming Key Risks and Barriers



Overcoming Key Risks and Barriers

As a Discovery project we were limited in the adoption and development risks, but key risks were mainly focused in engaging a truly diverse range of stakeholders, ensuring technical and regulatory feasibility, and aligning AI solutions with strategic priorities. Through inclusive outreach, early feasibility assessments, and a dual-lens evaluation framework, we overcame these challenges and delivered impactful, compliant outcomes.

Inclusive Stakeholder Engagement

Barrier: Risk of biased insights due to limited diversity in engagement.

Solution: Led inclusive outreach, co-created sessions, and partnered with community organizations to ensure broad representation.

Technical & Regulatory Feasibility

Barrier: Some outputs could be technically unfeasible or hard to scale within sector constraints.

Solution: Early feasibility assessments and SME mediation ensured alignment with technical and regulatory standards.

Strategic Alignment & Adoption

Barrier: AI solutions valued by consumers might not align with NG and NGET priorities.

Solution: Used a dual-lens evaluation framework to prioritize solutions with both customer value and business impact.

Compliance & Data

Barrier: Delays in accessing data, regulatory/ethical risks, and risk of stalled progress due to lack of information.

Solution: Established early data sharing clouds, engaged SMEs for compliance, and prioritized use cases based on potential data availability.

04

Alpha plan and next steps



Alpha Deployment Roadmap



Discovery Phase Findings

- Conducted 22+ interviews and reviewed 25 reports, extracting 400+ insights and mapping them to 140+ pain points across the AA1000 process.
- Identified 36 AI-enabled use cases and evaluated them against consumer value, strategic fit, complexity, feasibility, data readiness, ethics, and value for money.
- Delivered a stakeholder engagement report and a prioritization analysis highlighting the top five solutions.
- Produced three detailed factsheets for the highest-potential use cases, grounded in evidence and stakeholder input.



Discovery Value

- Delivered the first systematic mapping of infrastructure engagement pain points across the full engagement journey, ensuring a comprehensive diversity of voices.
- Ensured all proposed digital solutions targeted urgent challenges in engagement, prioritising innovative, high-value, and feasible options.
- Enabled early identification of consumer concerns, reducing the risk of costly re-consultations (~£500k) and judicial reviews (£250k-£1m).
- Through high level assessment we have identified potential value generation of £14.6m - £23.9m with investment into the 3 use cases.
- Shared actionable insights across the network to support further digital solutions and sector-wide improvements.



Alpha Key Activities Roadmap

Consortium & Governance Setup: Finalise agreements between National Gas, PA, and the local authority. Establish a project board and assign compliance and data protection roles.

- 1. Economic Value Assessment:** Develop a cost-benefit analysis framework, gather baseline data, and model expected consumer and system benefits for the top 3 use cases selected in discovery phase.
- 2. Use Case Selection:** Based on value for money and in-depth baseline data, select the main use case with the highest impact.
- 3. Prototype Design, Development and Testing:** Co-design prototype with stakeholders, ensuring accessibility, inclusivity, and compliance. Develop a functional prototype with technical documentation. Deploy the prototype in a controlled environment, collect user feedback, and measure performance against KPIs and assumptions. Quantify benefits using Beta-ready metrics, benchmark results against BAU and sector standards and iterate the solution to maximise value. See slide 51 for illustrative process example.
- 4. Commercialisation Plan Development:** Finalise stakeholders who will own the development and maintenance of the AI solution. Confirmation of IP ownership and licensing models to define commercialisation pathways.
- 5. Beta Preparation:** Synthesise Alpha findings, develop a robust Beta business case, identify regulatory/statutory requirements, and prepare knowledge dissemination materials for learning.

Alpha Roadmap



Alpha Output and Beta Considerations

- Consumer value evidence is central, with quantifiable consumer impact driving all decisions.
- Evidence-driven selection: The main use case is chosen based on real data, proven impact, and feasibility, maximizing the likelihood of Beta success.
- Stakeholder co-design guarantees accessibility, inclusivity, and buy-in.
- Rigorous prototype testing uses Beta-ready metrics and BAU benchmarks, with iterative improvement for scalability.
- Compliance, governance, and regulatory needs are addressed early.
- Knowledge sharing and a clear commercialisation roadmap support sector-wide adoption.

Alpha set up and detailed activities

Alpha Application Partners

Lead Partner



Secondary Partner



Technical Partner



Consumer Insights Partner



Proposed Local Authority

To be determined

Stage	Activity	Key Deliverables	Partner Roles
0. Consortium & Governance Setup	Establish governance structure, define roles, compliance, and risk management.	<ul style="list-style-type: none"> Governance charter and project board structure. Data protection plan and risk register. 	<p>National Gas: Governance lead and risk oversight.</p> <p>PA: Technical governance and cybersecurity compliance.</p> <p>CEE: Consumer engagement standards.</p> <p>Local Authority: Regulatory alignment and local representation.</p>
1. Economic Value Assessment	Build cost-benefit analysis framework, gather baseline data, and model consumer/system benefits for top 3 use cases.	<ul style="list-style-type: none"> Cost-benefit analysis framework. Baseline dataset and economic modelling outputs. 	<p>National Gas: Provide network data and cost baselines.</p> <p>PA: Lead modelling and analytics.</p> <p>CEE: Validate consumer impact and gather qualitative evidence for analysis.</p> <p>Local Authority: Supply local demographic and planning data.</p>
2. Use Case Selection	Apply prioritization matrix and select main use case for prototype based on value for money, feasibility, and consumer impact.	<ul style="list-style-type: none"> Prioritization matrix and selection report. Defined KPIs and success metrics. 	<p>National Gas: Ensure alignment with network priorities and prototype deployment approval.</p> <p>PA: Assess technical feasibility.</p> <p>Local Authority: Confirm local relevance.</p>
3. Prototype Design, Development & Testing	Co-design prototype with stakeholders, ensuring accessibility, inclusivity, and compliance. Develop prototype and documentation. Deploy prototype in controlled environment, collect feedback, measure KPIs, quantify benefits using Beta-ready metrics, benchmark vs BAU.	<ul style="list-style-type: none"> Prototype design specification and wireframes. Functional prototype and technical documentation. Prototype test report and quantified benefits model. Benchmarking analysis and Beta readiness checklist. 	<p>PA: Lead prototype design and development. Execute technical testing and benchmarking.</p> <p>National Gas: Provide operational requirements and provide operational test environment.</p> <p>CEE: Gather users/consumer feedback.</p> <p>Local Authority: Validate local engagement features and facilitate local stakeholder participation.</p>
4. Commercialisation plan development	Confirm ownership of activities required for commercialisation and identify effective pathways	<ul style="list-style-type: none"> Commercialisation strategy Stakeholder activities and deliverables ownership matrix 	<p>PA: Lead development of commercialisation routes</p> <p>National Gas: Confirm stakeholder ownership and pathways</p> <p>Local Authority: Confirm feasibility and relevance</p>
5. Beta Preparation	Synthesize Alpha findings, develop Beta business case, identify regulatory/statutory requirements, and prepare knowledge dissemination materials.	<ul style="list-style-type: none"> Beta business case and regulatory compliance roadmap. Knowledge dissemination pack and commercialisation roadmap. 	<p>National Gas: Lead Beta business case/regulatory compliance.</p> <p>PA: Provide technical roadmap and commercialisation strategy.</p> <p>CEE: Support consumer impact evidence.</p> <p>Local Authority: Validate regulatory and community considerations.</p>

Key Alpha Objectives

-  **Prove prototype value and de-risk innovation investment**
-  **Develop commercialisation pathway and data validation**
-  **Develop Beta application evidence for scale deployment**

Draft Communication Plan



Our Alpha roadmap has been developed based on PA's expertise in deploying AI tools for energy infrastructure and different industries

STRATEGY

- *What does AI mean for our business? What impact can AI realistically deliver?*

PA Delivery:

Evaluated AI use cases across 10+ portfolio companies for global PE firm, identifying 11% in operational savings and third-party cost reductions per company



Developed an AI Blueprint for FTSE100 global company to supercharge their commercial strategy and unlock \$4bn+ in enterprise value from potential AI use cases



Delivered strategic narrative for CEO of global video game industry services company to unlock ~\$67M of value in Art Services and 140% efficiency gain



Developed a GenAI blueprint to help leading defence engineering technology organisation streamline processes, improve productivity and address 200+ challenges



RESPONSIBLE AI

- *How do we ensure AI is adopted responsibly? How can we trust AI's results?*

PA Delivery:

Assessed AI risk maturity for an infrastructure organisation, pinpointed vulnerabilities, and delivered a threat model and roadmap for trustworthy, safe, resilient AI



Applied a Responsible AI framework to a public-sector knowledge retrieval assistant, embedding ethical principles across all lifecycle stages – from design to retirement



Reviewed B2B software compliance, ensuring privacy and ethics by design, updating policies, redesigning risk assessments, and automating risk and governance



Reviewed processes, governance, and tooling for a global pharma organisation, enhancing oversight of AI solution development and procurement



IMPLEMENTATION

- *How do we bring AI to life? How do we ensure our data is ready for AI? How do we successfully scale AI across the enterprise?*

AI applications which PA has built:

PA developed Sellafield's first AI virtual assistant; DANI2.0 to accelerate document authoring, verification and issue throughput by 300% ([click here](#))



PA launched customer facing AI chatbot for PostNord, Danish logistics company, to reduce cost of responding to millions of customer enquiries every year ([click here](#))



PA developed a generative AI survey analysis tool, utilising our Performance Driver Framework and NLP / GenAI to perform sentiment analysis across employees



Combining AI and Behavioural Science to understand the *why* behind incidents and drive recommendations to improve safety for a large transport organisation ([click here](#))



PA's D3AI toolset identifies mindsets and priorities driving behaviour, unifies fragmented people data, and delivers unbiased, quantified insights to prioritise what really matters most.



We reduced Sellafield's administrative burden of reviewing regulatory and legal text by 90% using AI, earning recognition through an NDA award ([click here](#))



Transformed a global supply chain with AI to reduce waste by 30%, improve delivery accuracy by 25% and forecast demand to optimise inventory levels across global markets



Used AI and digital twin technology to identify opportunities to cut steam production by 30%, and reduce CO₂ emissions by 100k tons/yr ([click here](#))



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Corporate Headquarters

10 Bressenden Place
London
SW1E 5DN
+44 20 7730 9000

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