

DECODE Corby

Local Industrial Decarbonisation Plan



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UK Government

Local Industrial Decarbonisation Plan (LIDP) for Corby

Executive Summary	5
From Strategy to Action: DECODE’s Three Implementation Pathways	5
Why This Transition Matters	6
Project Overview	7
The key objectives of the project include	7
Key Partners and Stakeholders	7
Electric Corby	7
North Northamptonshire Council (NN Council)	7
Marlec Engineering	8
Faradai	8
Slingshot Solutions.....	8
University of Liverpool.....	8
University of Northampton.....	8
Introduction	10
Background.....	10
Purpose and Rationale	10
Key Objectives of the LIDP -	10
Why Is the LIDP Necessary?	11
Expected Outcomes and Benefits -.....	11
Objectives and Goals.....	12
Objectives	12
Goals (inline with the overall LIDP programme)	12
Baseline Assessment.....	13
Current Emissions Profile	13
Data Collection Methodology.....	14
Existing Initiatives in Corby’s Industrial Decarbonisation Landscape	16
Decarbonisation Actions	23
Technological and Operational Interventions	23
Infrastructure Solutions.....	23
Modelling and Scenario Analysis	25
Digital Tools Development and Utilisation	25
DECODE Carbon Reduction Tool (Gopher Zero).....	25

DECODE Carbon Management Platform (Faradai).....	25
DECODE Digital Twin for Cluster-Wide Decarbonisation (SimAnalytica).....	25
Scenario Development and Pathway Formation	26
Stakeholder Feedback.....	27
Governance and Management	27
Governance Framework	28
Core Principles.....	28
Governance Structure	28
Roles and Responsibilities.....	28
Steering Group.....	29
Delivery Network	29
Working Groups	29
Community Forum.....	30
Utilising the Digital Twin Platform	30
Platform Functions	30
Monitoring and Evaluation Process.....	30
Collective Advocacy	30
Advocacy Objectives	31
Advocacy Strategies	31
Plan Development and Refinement	32
Draft Plan.....	32
Feedback and Iteration	32
Final Plan.....	33
The <i>First Final Plan</i>	33
Implementation and Monitoring.....	35
Implementation Strategy.....	36
Implementation Strategy	36
Monitoring and Evaluation Framework	36
Reporting Mechanisms	37
Knowledge Sharing and Dissemination	38
Dissemination Plan	38
Objectives	38
Dissemination Methods	38
Engagement Activities	38
Key Engagement Activities	39
Key Outputs & Communication Materials	39

National & International Dissemination.....	39
National-Level Dissemination	39
International Knowledge Exchange	40
Monitoring & Continuous Improvement	40
Continuous Improvement Measures	40
Conclusion	41
Appendices	42

Executive Summary

The Corby Local Industrial Decarbonisation Plan (LIDP) sets out a practical, action-focused strategy to support the industrial sector in transitioning toward net zero. With a long-standing history as a hub for manufacturing and logistics, Corby has made significant progress in reducing emissions—but further action is needed to overcome challenges such as grid constraints, energy costs, and decarbonisation investment barriers.

To shape the future of Corby's industrial decarbonisation, three high-level strategic pathways have emerged, each reflecting a distinct approach to how local businesses, policymakers, and energy stakeholders could pursue net-zero ambitions:

1. **Green the Grid** – This scenario assumes the UK's National Grid successfully delivers a zero-carbon electricity supply by 2030, reducing the need for extensive local renewable generation. Instead, efforts focus on industrial energy efficiency, process electrification, and material/resource efficiency.
2. **Fight for Power** – This pathway takes a more proactive approach to local energy independence, prioritising early investment in local renewable generation, storage, and grid upgrades to decarbonise industrial energy use ahead of national grid targets.
3. **Optimise and Share** – This strategy prioritises shared energy and infrastructure solutions, including community energy systems, industrial symbiosis models, and local flexibility markets to maximise resource efficiency and resilience.

While these pathways provide a strategic framework for decision-making, DECODE Corby serves as the mechanism for implementing real-world decarbonisation projects. Through stakeholder engagement, digital tools, and practical interventions, DECODE aligns these high-level scenarios with actionable, industry-led decarbonisation strategies.

From Strategy to Action: DECODE's Three Implementation Pathways

Building upon these strategic scenarios, the DECODE project has identified **three key implementation pathways**, designed to **translate ambition into deliverable projects**:

1. **Energy & Infrastructure**
 - Facilitates the integration of renewable energy, storage, and grid reinforcement solutions that align with either the Green the Grid or Fight for Power scenarios.
 - Enables businesses to optimise energy consumption, explore direct-wire agreements with renewable providers, and address grid constraints.
 - Supports community-led energy models and flexibility markets, aligning with the Optimise and Share pathway.
2. **Industrial Decarbonisation**
 - Provides data-driven tools and frameworks to support process efficiency, electrification, and emissions tracking, ensuring businesses can decarbonise operations regardless of the chosen energy scenario.

- Ensures industrial sites have the necessary insight and technologies to transition away from fossil fuels, particularly under Green the Grid and Fight for Power.
- 3. Circular Economy & Resource Efficiency**
- Encourages industrial clusters to reduce waste, share energy and materials, and explore low-carbon fuel alternatives, directly supporting the Optimise and Share approach.
 - Connects businesses within Corby’s industrial ecosystem to recover waste heat, utilise by-products, and implement shared logistics efficiencies.

Why This Transition Matters

The strategic pathways frame Corby’s long-term decarbonisation choices, but they require practical, industry-focused interventions to be realised. DECODE bridges this gap by providing the tools, insights, and collaborative models necessary to turn strategic ambitions into measurable outcomes.

Regardless of whether businesses align with Green the Grid, Fight for Power, or Optimise and Share, the DECODE pathways provide the means to act—helping businesses to reduce carbon, improve efficiency, and future-proof operations in a way that fits within the overarching decarbonisation strategy.

By aligning strategic direction with tangible projects, DECODE ensures that Corby’s industrial sector not only prepares for net zero but actively leads in the transition.

The single most important outcome is achieving decarbonisation without de-industrialisation

Project Overview

The DECODE Corby project is an ambitious initiative aimed at transforming Corby into a beacon of sustainable industrial practices, with a specific focus on reducing carbon emissions while fostering economic growth in the local steel, manufacturing and logistics sectors. Corby is tackling the dual challenges of decarbonising its industrial base and overcoming significant grid constraints.

The project brings together a consortium of key industrial players, low-carbon technology innovators, and the local authority to collaboratively create and implement a Local Industrial Decarbonisation Plan (LIDP).

A digital twin of Corby has been developed to simulate and explore different decarbonisation scenarios, allowing stakeholders to better understand their impacts and optimise the path toward net-zero carbon emissions.

The key objectives of the project include

- Developing a baseline assessment of current emissions across industrial operations in Corby.
- Identifying and testing technological interventions for reducing carbon emissions.
- Engaging local stakeholders and businesses to align them with the broader decarbonisation goals.
- Utilising cutting-edge digital twin technology to model and refine decarbonisation strategies.
- Building consent for a final decarbonisation plan to be championed by local authorities and businesses.

Key Partners and Stakeholders

The DECODE Corby project has built a strong partnership network to ensure the successful delivery of the LIDP. These stakeholders include a range of academic institutions, industrial entities, and technology providers

Electric Corby

Leading the project management and baseline assessment work package, Electric Corby is at the forefront of ensuring that all tasks are coordinated, and stakeholders are engaged effectively.

North Northamptonshire Council (NN Council)

The council plays a crucial role in stakeholder engagement, particularly with local manufacturers and industrial entities, and will be instrumental in the approval and long-term implementation of the decarbonisation plan.

Marlec Engineering

A key industrial partner contributing to stakeholder engagement and technology options, particularly in the area of energy efficiency solutions.

Faradai

Specialising in emissions monitoring and energy management, Faradai is responsible for deploying AI-powered carbon management software and providing data collection and analysis support.

Slingshot Solutions

Leading the modelling and optioneering work package, Slingshot is utilising a digital twin modelling platform to simulate different decarbonisation scenarios, allowing stakeholders to visualise and refine the strategies.

University of Liverpool

Providing world-class academic expertise in digital twin technology and scenario modelling, the university supports the data collection and modelling processes.

University of Northampton

Engaging with local businesses and industries, the university is key in coordinating stakeholder events and ensuring alignment between industrial goals and sustainability targets.

Stakeholders, as distinct from general business emitters, that have been engaged or approached include -

- **NGED** (National Grid Electricity Distribution): Engaged for strategic forecasts, planning, and current constraint challenges
- **Corby Power**: The 400 MW CCGT plant has been converted to run as a less CO₂e efficient OCGT plant, with a reduced maximum export limit of 225MW. However, its future remains uncertain
- **Tata Steel**: Involved as a steel processor and landowner for new industrial sites. They have sold 99 unused acres on the west side of their Corby tube-making works for a new logistics hub development
- **Anglian Water**: Engaged as an energy consumer, process emitter, and resource manager (effluent, heat). They have plans for becoming a net-zero carbon business by 2030⁴.
- **Encyclis**: Developing a 30 MW Energy from Waste facility with private wire network ambitions. While not specifically mentioned for Corby, they are constructing a similar facility in Walsall with a capacity of up to 49MW
- **AEGIS Energy**: Involved in providing hydrogen and other alternative fuels for HGVs and LGVs. They are planning to construct a clean energy hub in Corby as part of their initial five-station network, scheduled to open in early 2026
- **Lloyds Horizon Data Centre** - large energy user. While not a direct emitter it has potential for impactful community DSO participation
- **Jackson Bakery** – host to a new CNG Refuelling station for HGV / LGV
- **Navara Oat Milling** - Europe's largest and most efficient oat processing facility with the capacity to process over 100,000 tonnes of oats annually

These are important stakeholders for a range of reasons, from the scale of their emissions (Corby Power) to their potential change impact (AEGIS and NGED) to their proactive leadership in reducing environmental impacts of industry (Tata Steel).

Beyond the DECODE Corby project partners, these stakeholders are the founding participants in the network of businesses and organisations that will take the LIDP forward over the next 12-36 months.

Introduction

Background

Corby's industrial sector has long been a cornerstone of its economic identity, hosting a diverse range of manufacturing, steel processing, logistics, and waste management activities. While this sector has brought significant economic benefits to the region, it is also responsible for a substantial share of local carbon emissions. The current annual emissions profile identifies major contributors, such as Tata Steel, Corby Power Ltd, and Ball & Young Ltd, as key targets for intervention.

The DECODE Corby initiative addresses the dual challenges of reducing industrial carbon emissions and overcoming grid capacity constraints that limit the transition to low-carbon energy sources. Corby faces unique challenges as a hub of energy-intensive industries operating within a constrained energy infrastructure, which limits the adoption of electrified and renewable processes. These challenges are compounded by the need to align local industrial activities with the UK Government's ambitious net-zero carbon goals by 2050.

A pivotal component of the DECODE Corby project is the development of a Local Industrial Decarbonisation Plan (LIDP). This plan will provide a data-driven, place-based approach to decarbonise Corby's industrial sector. Leveraging advanced technologies such as digital twin simulations and AI-powered carbon management platforms, the LIDP seeks to explore, model, and implement viable decarbonisation pathways tailored to the region's specific needs.

The project has united key stakeholders, including the local authority, academic institutions, and leading industrial entities, in a collaborative effort to design and deliver sustainable solutions. By fostering alignment between environmental, economic, and regulatory priorities, the LIDP aims to ensure a resilient and competitive industrial future for Corby.

Purpose and Rationale

The Local Industrial Decarbonisation Plan (LIDP) for Corby is a strategic response to the urgent need for industrial sectors to align with the UK's legally mandated net-zero carbon emissions target. With the industrial sector contributing nearly a quarter of the UK's total greenhouse gas emissions, localised strategies like the LIDP are critical for achieving national climate goals.

Key Objectives of the LIDP -

- **Decarbonisation Without Deindustrialisation** The plan prioritises reducing emissions without compromising the economic vitality of Corby's industrial sector.
- **Grid Optimisation** Addressing Corby's significant grid constraints, the LIDP seeks to enable industrial electrification and renewable integration through innovative infrastructure and energy-sharing models.

- **Stakeholder Collaboration** The plan facilitates a shared vision among manufacturers, local authorities, and energy providers, creating a cohesive framework for sustainable industrial growth.

Why Is the LIDP Necessary?

- **Environmental Imperative** Corby's industrial emissions are substantial, with key players like Tata Steel emitting over 5,000 tonnes of CO₂ annually. The LIDP will drive emissions reductions through targeted interventions in high-impact areas.
- **Economic Opportunity** Decarbonisation presents a pathway to greater competitiveness for Corby's industries by reducing energy costs, improving operational efficiencies, and attracting green investments.
- **Infrastructure Development** By proposing shared infrastructure solutions, such as microgrids and energy storage systems, the LIDP will enhance energy security and resilience while easing pressure on the local grid.
- **Policy Alignment** The LIDP aligns Corby's local industrial policies with national objectives, including the UK Industrial Decarbonisation Strategy and Ofgem's regulatory frameworks, ensuring access to funding and compliance incentives.

Expected Outcomes and Benefits -

- **Carbon Reductions** Achieve a 50% reduction in industrial emissions by 2030.
- **Economic Growth** Strengthens Corby's industrial competitiveness through green job creation and reduced energy costs.
- **Replication Potential** Develop a scalable model for decarbonising other dispersed industrial clusters across the UK.

The LIDP is a forward-looking framework designed to catalyse Corby's transition to a sustainable industrial future while maintaining its economic relevance and resilience. By addressing both immediate challenges and long-term opportunities, the LIDP provides a foundation for action that benefits businesses, local communities, and the environment alike

Objectives and Goals

Objectives

1. To develop a credible, context-sensitive, strategic plan for decarbonising Corby's local industrial cluster
2. To increase organisational collaboration and strengthen decarbonisation planning skills, capacity and capability in the cluster.
3. To gather evidence to inform decarbonisation of other local industrial clusters and dispersed sites.

Goals (inline with the overall LIDP programme)

1. Achieve Net-Zero Carbon Emissions

The core aim is to decarbonise Corby's industrial sector, with a specific focus on reaching net-zero emissions. This involves reducing the carbon footprint of local manufacturing and industrial activities while maintaining economic vitality.

2. Overcome Grid Constraints

Corby faces significant challenges related to energy grid capacity. One of the primary goals is to address these constraints, ensuring that industries can transition to electrified and low-carbon processes without overwhelming the local infrastructure.

3. Develop a Place-Based Decarbonisation Plan

DECODE seeks to build a comprehensive, data-driven Local Industrial Decarbonisation Plan (LIDP). The plan will be underpinned by data-gathering, interpretation and digital twin technology, allowing for simulations of various decarbonisation strategies for individual organisations and the cluster overall

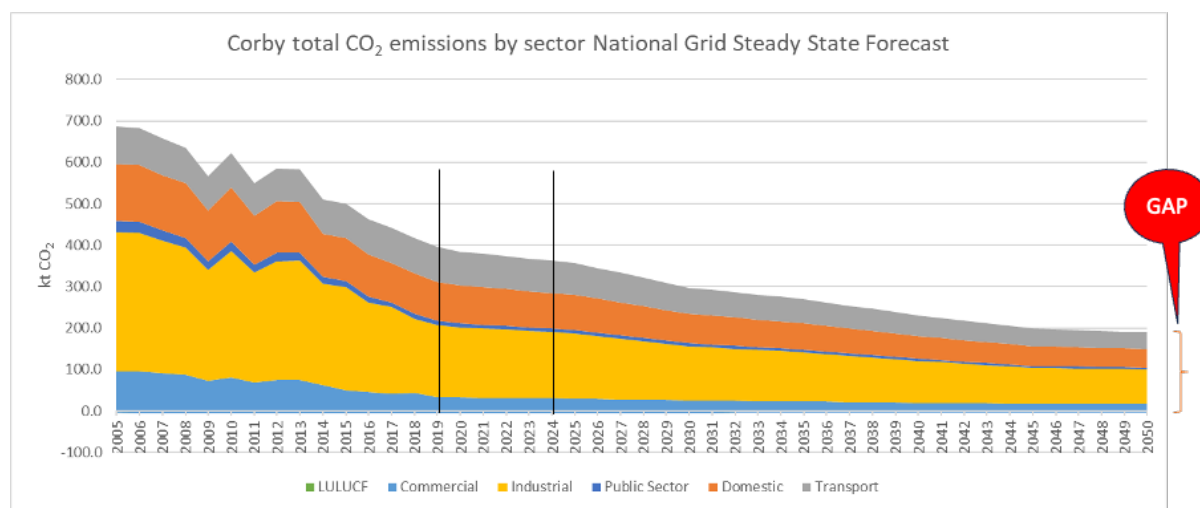
4. Foster Collaboration

The project aims to bring together a diverse range of stakeholders—from manufacturers and low-carbon technology providers to local authorities and academic institutions—to collaboratively develop and implement decarbonisation strategies.

Baseline Assessment

Current Emissions Profile

Corby is a hub for various industrial activities, and the Local Industrial Decarbonisation Plan (LIDP) aims to reduce the carbon footprint of these operations. The baseline emissions profile captures data from major emitters in the area, focusing on identifying the largest sources of greenhouse gas emissions. Key contributors include



Corby Power Ltd The most significant single emitter, responsible for 6,686 tonnes of CO₂ annually.

Tata Steel UK Ltd (Corby Tubeworks) Another major industrial player contributing 5,140 tonnes of CO₂ annually.

Ball & Young Ltd Noteworthy for methane emissions, producing around 5 tonnes per year.

Emitter	Pollutant	Site	Emissions	Sector
Corby Power Ltd	Carbon Dioxide as Carbon	Corby	6686.48 Tonnes	Major power producers
Tata Steel UK Ltd	Carbon Dioxide as Carbon	Corby Tubeworks	5140.41 Tonnes	Iron & steel industries
Lloyds Banking Group plc	Carbon Dioxide as Carbon	Horizon Centre	55.63 Tonnes	Commercial
Shanks Waste Services Ltd	Carbon Monoxide	Weldon Phase 1	18.18 Tonnes	Waste collection, treatment & disposal

Tata Steel UK Ltd	Carbon Monoxide	Corby Tubeworks	9.82 Tonnes	Iron & steel industries
Corby Power Ltd	Carbon Monoxide	Corby	6.81 Tonnes	Major power producers
Ball & Young Ltd	Methane	Corby	5 Tonnes	Textiles, clothing, leather & footwear
Aurora Energy Ltd	Carbon Monoxide	Rushton Landfill Generating Station	4.48 Tonnes	Waste collection, treatment & disposal
Sita Holding UK Ltd	Carbon Monoxide	Corby Landfill	2.06 Tonnes	Waste collection, treatment & disposal
Lloyds Banking Group plc	Carbon Monoxide	Horizon Centre	0.25 Tonnes	Commercial

While these major emitters have been identified, there are still sectors, particularly in waste management and smaller manufacturing units, where detailed emissions data remains unavailable.

Data Collection Methodology

The baseline assessment has been built using a combination of public data sources, direct industry engagement, and advanced emissions monitoring tools

National Atmospheric Emissions Inventory (NAEI)

This tool provided geospatial data on emissions, allowing for precise identification of top emitters in Corby. The platform's emissions heat map highlighted Corby's industrial emissions hotspots, including the key industries mentioned above.

Stakeholder Engagement

Outreach was made to over 200 businesses identified through SIC code analysis, requesting their decarbonisation plans and emissions data. While some responses were received, many key stakeholders are yet to submit detailed plans, prompting further engagement.

Engaging industrial stakeholders in DECODE Corby presented several challenges, particularly given the **lack of an initial structured plan or predefined strategy** for what DECODE meant in practical terms. Many businesses within the cluster were unfamiliar with the concept of collective decarbonisation and viewed sustainability as a **secondary priority** compared to cost control and operational efficiency.

Additionally, **grid constraints and regulatory uncertainties** made it difficult for businesses to see immediate incentives for participation, as many decarbonisation initiatives were perceived as requiring long-term commitment without short-term return on investment.

A key challenge was **overcoming initial inertia**—industrial sites, especially those not yet engaged in net-zero commitments, required clear, **compelling, and evidence-based arguments** to justify their involvement. Given the **lack of detailed emissions baselines or specific decarbonisation pathways at the project's outset**, engagement efforts had to be **highly iterative**, building buy-in progressively rather than presenting a fixed roadmap.

To address these challenges, **novel approaches** were applied:

- **Utilisation of Digital Twin Technology** – By developing a **geospatial model** of the industrial cluster, stakeholders could **visualise** their role within the cluster, helping to shift the perception of decarbonisation from an abstract goal to a tangible and actionable strategy. This interactive modelling helped businesses understand the **collective benefits** of emissions reduction.
- **Rapid, Self-Service Carbon Tools** – The DECODE Carbon Reduction Tool was designed to provide an **accessible entry point**, offering businesses quick, tailored decarbonisation recommendations **without requiring expert knowledge**. This reduced perceived complexity and increased participation.
- **Partnership-Driven Engagement** – Leveraging established **trust networks** through **Electric Corby, North Northamptonshire Council, and local industry groups** helped break down initial barriers and bring key players into the discussion.
- **Practical, Costed Business Cases** – Rather than focusing solely on emissions reductions, engagement efforts linked **carbon savings with financial benefits**, such as lower energy costs through on-site renewables and efficiency measures.

While these approaches **significantly improved engagement**, the numbers remained disappointing and ongoing challenges remain, particularly in **sustaining long-term participation**, ensuring that businesses move beyond initial interest to fully integrating **decarbonisation planning into their strategic decision-making**. The flexibility of DECODE's stakeholder model will continue to be crucial in adapting to evolving market, regulatory, and policy conditions

Technological Solutions

The AI-powered carbon management software provided by Faradai is being deployed to track and analyse emissions from local industries, supplementing the public datasets with real-time monitoring where possible.

Existing Initiatives in Corby’s Industrial Decarbonisation Landscape

Corby’s drive toward industrial decarbonisation builds on several ongoing initiatives that provide a foundation for the Local Industrial Decarbonisation Plan (LIDP). In the past decade, local carbon emissions have been cut by roughly 50%, yet Corby’s emissions remain about 20% higher than the national average.

This underscores the need to accelerate decarbonisation while sustaining the area’s vibrant manufacturing base.

A number of programmes – led by the council, community organisations, and industry – are already addressing energy efficiency, renewable energy, and emissions reduction. These existing initiatives are valuable first steps, highlighting both progress and persistent gaps (notably the limited engagement of smaller industrial emitters).

Smaller businesses often face barriers (e.g. lack of funding, expertise or bandwidth) that have left them less involved in decarbonisation efforts compared to larger firms. DECODE Corby will play a critical role in bridging these gaps: it will integrate and support current efforts, bringing in smaller emitters, and align everyone’s actions with a cohesive strategy for net zero.

The table below summarises key existing initiatives, their current decarbonisation efforts, the challenges or gaps they face, and opportunities for alignment with the DECODE project.

This structured overview shows how each initiative contributes to Corby’s decarbonisation journey and how DECODE can enhance their impact. Following the table, specific recommendations are provided on aligning each initiative with DECODE’s three pathways – Energy & Infrastructure, Industrial Decarbonisation, and Circular Economy & Resource Efficiency – ensuring these efforts are mutually reinforcing and actionable within the LIDP framework.

Initiative Name	Current Decarbonisation Efforts	Challenges & Gaps	Opportunities for Alignment with DECODE
North Northamptonshire Council Climate Action (Carbon Management Plan & Net Zero 2030)	<ul style="list-style-type: none"> – Council has a Carbon Management Plan and a declared climate emergency, targeting carbon-neutral council operations by 2030. – Investing in energy efficiency and heat decarbonisation at public buildings (e.g. replacing gas boilers with heat pumps under PSDS funding) to cut emissions. – Incorporating climate objectives into local policies and planning (to encourage renewable energy, sustainable transport, etc.). 	<ul style="list-style-type: none"> – Scope is mostly limited to council-owned assets and operations; indirect influence on private industry is limited without broader engagement. – Funding beyond public estate decarbonisation is a challenge; reliance on external grants for wider projects. – Needs stronger links with local businesses’ efforts – currently no formal mechanism to drive industrial emissions cuts beyond advisory support. 	<ul style="list-style-type: none"> – Pathway 1 (Energy & Infrastructure): Council can facilitate local renewable energy projects (e.g. solar on municipal or industrial sites) and help ease grid constraints via planning and partnerships, aligning with DECODE’s infrastructure goals. – Pathway 2 (Industrial Decarbonisation): Use the council’s convening power to bring more businesses (especially SMEs) into Corby’s decarbonisation plan – for example, extending its carbon-neutral practices and data (from its own estate) to guide industrial emitters on energy

Initiative Name	Current Decarbonisation Efforts	Challenges & Gaps	Opportunities for Alignment with DECODE
<p>“North Northamptonshire to Net Zero” (NN2NZ) (Regional Net-Zero Planning Project)</p>	<ul style="list-style-type: none"> – A research and planning initiative led by Electric Places (Electric Corby CIC) and NNC, using data analysis and digital twin modelling to map out pathways to net zero. – Identified and prioritized a portfolio of low-carbon projects across the region (energy, transport, buildings, industry) to accelerate carbon reduction. – Provided holistic insight into interventions (e.g. renewable energy options, efficiency measures) and their impacts, giving an evidence base for action. 	<ul style="list-style-type: none"> – As an analysis project, its outputs are recommendations rather than implemented actions; there is a gap in translating this roadmap into on-the-ground decarbonisation by industries. – May not have fully engaged all local businesses during the study phase, especially smaller firms, so some industry-specific nuances or buy-in could be lacking. – Risk that without a coordinating body, the recommendations remain on paper. 	<p>audits, benchmarking, and adoption of low-carbon tech.</p> <ul style="list-style-type: none"> – Pathway 3 (Circular Economy): Support policies or programs that encourage waste-heat use and resource sharing (the council can enable industrial symbiosis through planning policy or facilitation), embedding circular economy principles from the municipal level into the wider industrial community. DECODE can integrate the council’s initiatives as anchor projects and scale them cluster-wide. – Pathway 1: Leverage NN2NZ’s identified energy projects (such as potential solar farms or grid upgrades) to feed into DECODE’s energy and infrastructure pathway – ensuring the LIDP picks the highest-impact energy investments and addresses grid constraints highlighted by the study. – Pathway 2: Use the data and best-practice plans from NN2NZ to inform industrial decarbonisation actions in DECODE (e.g. targeted efficiency programs for sectors identified as high emitters, emissions monitoring frameworks, etc.). DECODE can act as the “implementation arm” for NN2NZ’s industrial recommendations, turning analysis into concrete pilot projects. – Pathway 3: Apply any circular economy opportunities flagged by NN2NZ (for example, if the study noted waste streams or heat sources that could be shared) within DECODE’s circular economy pathway. If such opportunities were not fully explored in NN2NZ, DECODE can build on the project’s data platform to identify new symbiosis links among Corby businesses.
<p>Tata Steel Corby – Decarbonisation Investments (Industry-Led Emissions Reduction)</p>	<ul style="list-style-type: none"> – Tata Steel’s tube-making plant in Corby (one of the larger emitters locally) is undergoing a major upgrade to cut CO₂ emissions. For example, a £5 million investment in new electric induction furnaces is replacing gas-powered ones, preventing ~2,000 tonnes of CO₂ per year from being emitted – Broader corporate goal to make the Corby site the first net-zero steel tube plant in the UK, aligning with Tata Steel’s global 2045 net-zero ambition. 	<ul style="list-style-type: none"> – Achieving net-zero steel production is technically challenging: beyond the furnace upgrade, the plant will require access to 100% renewable power and possibly future hydrogen or other innovations – which depend on external infrastructure and technology developments. – High capital costs and the need for consistent policy support (energy prices, incentives) are ongoing concerns. – This initiative is primarily a single-company 	<ul style="list-style-type: none"> – Pathway 1: DECODE can support Tata by facilitating connections to local renewable energy and storage projects, ensuring the electrification of processes isn’t hampered by grid constraints. For instance, DECODE’s energy pathway could help develop a dedicated renewable supply (or direct PPAs) for the plant and explore battery storage or demand flexibility so Tata’s electrical load benefits rather than strains the local grid. – Pathway 2: Position Tata’s Corby site as a flagship in the

Initiative Name	Current Decarbonisation Efforts	Challenges & Gaps	Opportunities for Alignment with DECODE
	<p>– Other measures include process optimizations to reduce energy use and plans to source more low-carbon electricity for operations.</p>	<p>effort; without cluster-wide adoption, other industrial emitters might lag behind, and opportunities for sharing resources (like waste heat or excess renewable power) with neighbouring facilities could be missed.</p>	<p>LIDP's industrial decarbonisation pathway – sharing the lessons (e.g. on induction furnace integration and electrification) with other manufacturers. DECODE can create a platform for Tata to mentor or guide smaller factories on process efficiency and carbon monitoring (potentially using the same emissions tracking tools), thus scaling up the impact.</p> <p>– Pathway 3: Integrate Tata's operations into a budding circular economy network. For example, waste heat from steel processes could be captured and supplied to nearby facilities or community heating systems in Corby (with DECODE brokering these agreements), and steel scrap or by-products could be circulated to local recyclers or construction companies. Tata's participation in an industrial symbiosis program under DECODE would anchor the circular economy pathway and encourage other firms to exchange waste and resources.</p>
<p>SME Decarbonisation Grant Scheme ("NNDecarb" Business Grants)</p>	<p>– North Northamptonshire Council's NNDecarb grant programme offers local small and medium enterprises up to £10,000 (50% match-funded) for installing energy efficient and low-carbon measures. – Dozens of SMEs have accessed or are eligible for funding to upgrade lighting, heating systems, insulation, efficient machinery, solar panels, etc., thereby lowering energy costs and carbon footprints. – Funded by the UK Shared Prosperity Fund, this scheme kick-starts decarbonisation for businesses that might otherwise delay investment in carbon-saving technologies.</p>	<p>– Limited funding pot and scale: grants cover only a portion of projects (many small businesses may need larger investments or continued support beyond the available £10k). – Uptake may be limited by awareness and the capacity of busy SMEs to apply and execute projects; some companies might not know about the scheme or have the upfront capital for the match funding. – Improvements are done firm-by-firm, lacking a coordinating framework to ensure these individual efforts add up to significant collective impact (or to integrate them with bigger infrastructure changes).</p>	<p>– Pathway 1: Align the grant-supported projects with DECODE's energy and infrastructure initiatives – for example, encourage grantees to install renewable generation (solar PV) or battery storage where possible, and then link those SMEs into any local energy network or demand-response program that DECODE develops. This way, even small installations become part of a larger smart energy system addressing grid constraints.</p> <p>– Pathway 2: Utilize the grant program to feed into the industrial decarbonisation pathway: data from these projects (energy saved, emissions reduced) can be collected through DECODE's monitoring tools to track cluster-wide progress. DECODE can also identify common needs from applicants (e.g. many factories needing efficient compressors) and coordinate a group procurement or shared service to amplify the impact beyond individual premises.</p> <p>– Pathway 3: Encourage grant recipients to consider resource efficiency in a broader sense – for instance, when upgrading equipment, also look at waste reduction or water savings. DECODE could expand on this</p>

Initiative Name	Current Decarbonisation Efforts	Challenges & Gaps	Opportunities for Alignment with DECODE
<p>“FlexUnity” Local Energy Pilot (Community Energy Sharing Initiative)</p>	<p>– FlexUnity was an EU Horizon 2020 demonstrator project in Corby aimed at smarter use of locally generated solar energy. It links homes and businesses into a pilot energy community, providing free energy monitors, battery storage, and even EV charge points to participants. – The goal is to encourage businesses and residents to be flexible with energy use and share surplus solar power within the community, which lowers bills and carbon emissions while improving grid resilience</p> <p>– By coordinating consumption (e.g. using more solar at midday or shifting loads), the project helps the distribution network operator manage local constraints and demonstrates how local grids can accommodate more renewables through cooperation.</p>	<p>– Pilot-scale and limited duration: only 20 homes and 4 businesses in Corby directly involved, meaning its impact so far is small and many lessons are still preliminary. – Regulatory and technical complexities in expanding local energy trading – current market and grid rules make it hard to scale up community energy sharing without further support or changes. – The project’s continuation is uncertain after the trial; without integration into a broader plan, the tools and community formed could dissipate, and other businesses outside the pilot haven’t been engaged yet.</p>	<p>by creating a forum for SMEs to share leftover resources or by-products. While the current scheme is focused on energy, DECODE’s circular economy pathway can build on the relationships formed, inviting those SMEs into new circular initiatives (such as material swap platforms or collective waste-to-resource projects).</p> <p>– Pathway 1: DECODE’s Energy & Infrastructure pathway can adopt and expand on FlexUnity’s model, leveraging its results to design larger local energy systems or microgrids in industrial areas. For example, DECODE can facilitate a business park-wide energy sharing scheme where multiple factories pool rooftop solar and battery storage, building on the concepts proven in FlexUnity. This directly addresses grid constraints by flattening peaks and making full use of renewables.</p> <p>– Pathway 2: Industrial participants of an expanded FlexUnity-style program gain real-time energy data and flexibility options, which DECODE can integrate into the industrial decarbonisation strategy. Companies can use these tools to cut peak demand and emissions. DECODE can also work with the DNO on policy/regulatory recommendations (a deliverable of the pilot) to allow more industrial demand response and local energy markets – paving the way for broader tech adoption in Corby’s industries.</p> <p>– Pathway 3: Although primarily an energy project, the collaborative approach of FlexUnity fosters a culture of sharing that can extend to other resources. DECODE can take this community network and introduce circular economy dialogues – for instance, the businesses that shared energy could also explore sharing heat or secondary materials. In this way, the pilot’s participants become early adopters of the industrial symbiosis mindset under DECODE’s circular economy pathway.</p>
<p>AEGIS Energy Multi-Fuel Clean Energy Hub</p>	<p>Adjacent to Magna Park Corby to serve logistics and freight operations. The hub will provide refuelling for a range of low-carbon fuels, including:</p>	<p>Adoption Barriers: Many logistics operators still rely on traditional diesel due to cost, infrastructure readiness, and operational concerns (e.g., range</p>	<p>Pathway 1 – Energy & Infrastructure: DECODE can integrate the AEGIS hub into its regional energy planning, working with stakeholders (e.g., National Grid, DNOs) to assess</p>

Initiative Name	Current Decarbonisation Efforts	Challenges & Gaps	Opportunities for Alignment with DECODE
	<ul style="list-style-type: none"> • Electric vehicle (EV) charging for commercial logistics fleets. • Bio-compressed natural gas (bio-CNG) as a cleaner alternative to diesel. • Hydrotreated vegetable oil (HVO) for existing combustion engines as a near-term emissions reduction strategy. • Hydrogen refuelling to support long-term zero-emission transport 	<p>limitations for electric or hydrogen HGVs). Grid Constraints: Large-scale EV charging for logistics fleets requires significant grid capacity, which may not currently be available without reinforcement. Policy & Incentives: The transition to alternative fuels depends on government incentives and corporate decarbonisation mandates to drive demand.</p>	<p>grid needs for scaling up EV charging at the logistics hub. Pathway 2 – Industrial Decarbonisation: Freight and logistics account for a significant share of Corby’s industrial emissions. DECODE can help identify logistics firms willing to trial low-carbon fuels, track emissions reductions, and showcase the results through the Carbon Management Tool. Pathway 3 – Circular Economy & Resource Efficiency: The potential for waste-derived biofuels (e.g., biomethane production from local industrial/agricultural waste) could be explored under DECODE’s circular economy initiatives. Logistics hubs could also link with shared transport schemes to optimise fleet movements and reduce emissions from empty return trips.</p>
<p>Encyclis – Energy from Waste (EfW) Facility</p>	<p>Encyclis is developing a 30MW energy-from-waste (EfW) plant using a step-grate incineration process, with a grid connection already in place. The project aims to:</p> <ul style="list-style-type: none"> • Divert waste from landfill while recovering energy. • Supply local businesses with up to 50% of the generated energy via direct-wire agreements. • Support circular economy principles by reducing residual waste volumes and exploring future carbon capture and storage (CCS) integration. 	<p>Heat & Power Utilisation: Without a heat network or structured industrial partnerships, some of the recovered energy could be wasted. Public Perception & Regulatory Approvals: Energy-from-waste plants sometimes face resistance due to emissions concerns. The project requires environmental permits and strong community engagement. Grid Constraints & Energy Costs: While the facility has a grid connection, optimising local energy distribution to industrial offtakers is key to maximising its decarbonisation impact</p>	<p>Pathway 1 – Energy & Infrastructure: DECODE can facilitate direct-wire agreements between Encyclis and local businesses, ensuring the electricity stays within the Corby cluster and offsets emissions from grid electricity. This could help industries secure stable, lower-cost renewable power. Pathway 2 – Industrial Decarbonisation: Waste-to-energy can be integrated into Corby’s carbon management tools by tracking the avoided emissions from landfill diversion and the substitution of fossil-fuel electricity. Pathway 3 – Circular Economy & Resource Efficiency: If excess heat from the EfW plant can be captured and supplied to industrial users or a district heating network, this could significantly boost local energy efficiency. DECODE could explore how nearby businesses (e.g., food processing, manufacturing) could use this heat, turning a waste output into a valuable resource.</p>

Alignment

The above initiatives illustrate both progress and gaps in Corby’s industrial decarbonisation journey. The larger players (like Tata Steel) are investing in cleaner technology, and the public sector is leading by example with its own estate – these create momentum and examples to learn from. Community-led efforts and pilot projects (such as Electric Corby’s

programs) are exploring innovative solutions in energy sharing and planning. However, many smaller and mid-sized companies have yet to fully engage, often due to resource constraints or lack of a unifying framework. This is where **DECODE Corby** comes in: it will act as the integrative platform that ties these threads together into a coherent LIDP. In particular, DECODE is structured around three key pathways, and each existing initiative can plug into one or more of these:

- **Pathway 1: Energy & Infrastructure – Renewable Integration and Grid Modernisation.** Several initiatives address this area, but DECODE will amplify them. For example, the FleXunity pilot and council-led solar projects directly inform Pathway 1 by demonstrating how local renewable energy can be maximized despite grid constraints. DECODE should scale up such models (e.g. creating an industrial energy network or community solar scheme) to help more businesses access renewable electricity. The council’s planning influence and partnerships can also support infrastructure upgrades – with DECODE coordinating between industry and the DNO to tackle grid bottlenecks (perhaps through smart scheduling of big electricity users or joint investment in substation upgrades). By aligning with Pathway 1, **every initiative that involves energy generation or efficiency** (from building retrofits to new furnaces) will be linked into a broader strategy for resilient, low-carbon energy supply in Corby.
- **Pathway 2: Industrial Decarbonisation – Efficiency, Emissions Tracking, and Technology Adoption.** DECODE will provide tools and a collaborative framework for industries to cut emissions in tandem. Existing efforts like Tata Steel’s process improvements set a benchmark – DECODE can use such case studies to inspire and guide others. Through this pathway, initiatives like the SME grant scheme and NN2NZ’s recommendations become part of a bigger push: for instance, DECODE can establish an **emissions monitoring system** (potentially using platforms like Faradai’s carbon software) across multiple factories to track progress.

It can also organize knowledge-sharing workshops where large companies mentor SMEs on efficiency (scaling individual successes to cluster-wide best practices). Concretely, DECODE might implement an “**industrial energy audit and retrofit program**” that builds on the council grants – coordinating assessments for clusters of firms and helping them collectively invest in solutions (reducing costs and complexity per business). By aligning each initiative under Pathway 2, the LIDP ensures that **all industrial players, big and small, are engaged** in measuring and aggressively reducing their emissions through proven technologies.

- **Pathway 3: Circular Economy & Resource Efficiency – Waste Heat Recovery, Industrial Symbiosis, and Circular Materials.** This is an area where current efforts in Corby are nascent – most industries have only pursued basic recycling or waste reduction on their own. DECODE will change that by creating structured opportunities for circularity. For example, waste heat from one facility (like Tata’s or a local generator) could be captured to provide process heat or space heating for others nearby, turning a waste into a resource. Similarly, DECODE can establish an **industrial symbiosis network** (a forum or platform) where businesses share information on their waste streams and resource needs, uncovering matches (one company’s by-product could be another’s raw material). The groundwork for this is hinted at in DECODE’s mandate to foster “industrial symbiosis”. To align existing initiatives with Pathway 3, DECODE will integrate participants from initiatives in Pathway 1 and 2 into these symbiosis efforts – for instance, SMEs receiving energy upgrades can also be encouraged to participate in material swap schemes, and

community energy groups could expand their scope to include shared EV fleets or pooled procurement of sustainable materials. By embedding circular economy thinking into each initiative (even those originally focused on energy or carbon), the LIDP will drive **resource efficiency and waste reduction across the Corby industrial cluster.**

In summary, each existing initiative in Corby's decarbonisation landscape has a meaningful role in the LIDP and clear avenues to contribute to DECODE's three pathways.

By structuring the plan around these pathways, DECODE will ensure that no effort exists in isolation: **renewable energy projects will support industrial process changes, and both will be enhanced by circular economy collaborations.**

The recommendation is for DECODE Corby to actively align with and bolster each initiative – coordinating timelines, sharing data and lessons learned, and filling gaps (especially for smaller emitters) with targeted support.

This integrated approach will make the LIDP more than the sum of its parts, accelerating Corby's progress to net zero in an inclusive and pragmatic way. Each initiative becomes more actionable and impactful when plugged into a wider framework: **smaller businesses gain the backing and knowledge to participate, larger projects gain broader relevance and adoption, and the entire industrial community moves forward together.**

Decarbonisation Actions

The project has reviewed the extensive research available on the vast range of interventions and technologies that can be deployed to decarbonise industrial and commercial activities.

Specifically, the work of the North Northamptonshire to Net Zero project in 2022 provided a localised analysis and assessment of viable solutions.

For DECODE Corby these have been reviewed again in the context of those technologies and operational interventions individual businesses can implement and infrastructure level solutions that need collaborative and coordinated efforts to unlock impact.

Technological and Operational Interventions

These are potential technological solutions for reducing emissions, such as renewable energy integration, energy efficiency upgrades, and carbon capture and storage, plus operational changes and best practices for reducing carbon footprint.

We have developed a long list of potential technological and operational interventions that businesses can make to decarbonise and mitigate climate change, and **they are included in the [appendices](#)**. These potential actions represent a source of information for businesses to select which they can do when to help decarbonise. They are segmented into useful categories for easier reference – such as buildings, transport, energy.

Through the lens of the three Implementation Pathways DECODE Corby will work with engaged businesses to identify the projects and actions and support the sources of capacity, resources and funding for action.

Infrastructure Solutions

Corby's industrial decarbonisation efforts must be supported by robust infrastructure solutions that enable businesses to adopt low-carbon technologies while addressing energy constraints. The focus is on shared infrastructure and collaborative approaches that maximise efficiency, resilience, and cost-effectiveness.

Renewable Energy Deployment and Grid Modernisation

- Expand access to direct-wire renewable energy by enabling industries to procure locally generated solar, wind, and waste-to-energy power without relying on constrained grid capacity.
- Collaborate with NGED and Ofgem to pilot flexibility markets that allow businesses to manage energy demand, share capacity, and reduce reliance on grid upgrades.
- Invest in on-site generation and battery storage to enable self-consumption and peak demand management, reducing industrial exposure to volatile energy prices.

Industrial Energy Hubs and District Heating

- Develop multi-energy hubs that provide access to a range of low-carbon fuels such as hydrogen, bio-CNG, and hydrotreated vegetable oil (HVO) for logistics and transport operations.

- Support the creation of an industrial district heating network that repurposes waste heat from energy-intensive facilities (e.g., Tata Steel and Encyclis EfW plant) to supply nearby businesses.
- Encourage **heat recovery and re-use projects**, enabling industrial sites to improve overall energy efficiency while reducing emissions.

Smart Infrastructure and Digital Integration

- Utilise the **DECODE Digital Twin** to model and simulate different infrastructure solutions, helping industries identify the most effective decarbonisation pathways.
- Implement **intelligent energy management systems**, allowing businesses to optimise load balancing, energy storage, and demand-side response participation.
- Develop a **data-sharing platform** that integrates emissions data, energy use, and transport activity, enabling businesses and local authorities to coordinate actions more effectively.

Transport and Logistics Decarbonisation

- Scale up **EV charging infrastructure** to support the electrification of freight and logistics fleets, addressing range limitations and energy demand fluctuations.
- Work with **AEGIS Energy** to integrate **hydrogen refuelling stations** and **alternative fuel hubs** into Corby's industrial logistics ecosystem.
- Expand **shared transport solutions**, including pooled freight networks and smart routing systems, to optimise logistics efficiency and reduce unnecessary emissions.

By integrating these **infrastructure solutions** with the technological and operational interventions outlined in the LIDP, Corby can create a **resilient, low-carbon industrial ecosystem** that not only reduces emissions but also enhances business competitiveness and local economic growth.

Modelling and Scenario Analysis

Digital Tools Development and Utilisation

As part of developing a Local Industrial Decarbonisation Plan (LIDP) for Corby, the DECODE project focused on creating digital tools that enable ongoing assessment, communication, and optimisation of decarbonisation pathways.

These tools support both individual business initiatives and collective efforts across the industrial cluster, ensuring that projects contribute effectively to the transition to net zero. By providing a structured approach to emissions tracking, scenario modelling, and decision-making, the DECODE digital tools enhance the deliverability, viability, and impact of decarbonisation strategies.

DECODE Carbon Reduction Tool (Gopher Zero)

The DECODE Carbon Reduction Tool is a self-service platform that allows businesses to assess their emissions and explore costed carbon reduction strategies. It enables users to input Scope 1, 2, and 3 emissions sources, generating a baseline aligned with Science-Based Targets (SBTi) and ISO Net Zero Guidelines (IWA 42:2022). The tool provides site-specific carbon reduction recommendations by analysing key operational data, including total energy demand, carbon footprint, and cost savings from decarbonisation activities. Businesses can evaluate the financial and environmental benefits of measures such as EV fleet conversion, onsite renewables (solar, battery storage), and industrial energy efficiency improvements. By simplifying emissions assessment and investment decisions, the tool supports businesses in aligning their decarbonisation plans with both regulatory compliance and economic viability.

DECODE Carbon Management Platform (Faradai)

The DECODE Carbon Management Platform is an AI-powered carbon accounting tool that captures real-time emissions data, providing businesses with precise insights into their carbon footprint. The platform integrates directly with site metering data, automating calculations to improve emissions accuracy. Through API connectivity, it can feed real-time emissions data into the DECODE Digital Twin, enabling businesses to model the impact of decarbonisation interventions at both site and cluster levels. By combining automated data capture, AI-driven analysis, and real-time monitoring, the platform enhances industrial decision-making, supporting businesses in managing emissions reduction more effectively and efficiently.

DECODE Digital Twin for Cluster-Wide Decarbonisation (SimAnalytica)

The DECODE Digital Twin is an advanced geospatial modelling tool that provides a cluster-wide visualisation of industrial emissions and energy consumption. It enables businesses and policymakers to simulate and compare decarbonisation strategies, identifying the most effective pathways for emissions reduction at both individual site and industrial cluster levels. The tool helps assess the carbon-saving potential of increased rooftop solar deployment, the impact of fleet electrification, and high-emission transport areas that require infrastructure improvements. By presenting complex data in an intuitive and interactive format, the Digital

Twin enhances business engagement, helping industrial operators see their role in the cluster and understand the collective impact of decarbonisation efforts. This tool plays a key role in facilitating evidence-based decision-making, ensuring that Corby's industrial decarbonisation initiatives are data-driven, targeted, and impactful.

Scenario Development and Pathway Formation

Developing the Local Industrial Decarbonisation Plan (LIDP) required scenario-based thinking to understand how different strategic choices could shape Corby's decarbonisation trajectory. The "Green the Grid," "Fight for Power," and "Optimise and Share" scenarios represent high-level pathways that industrial stakeholders could follow. These scenarios helped to explore potential interactions, trade-offs, and dependencies in the transition to net zero.

From these broad scenarios, the DECODE project distilled three practical implementation pathways that define how businesses and policymakers can take action. The **Energy & Infrastructure** pathway integrates renewable energy, storage, and grid solutions to optimise industrial energy use and support decentralised energy models, ensuring businesses can access low-carbon power while addressing grid constraints. The **Industrial Decarbonisation** pathway provides data-driven tools and strategies to enhance process efficiency, electrification, and emissions tracking, enabling industries to transition away from fossil fuels. Finally, the **Circular Economy & Resource Efficiency** pathway promotes waste reduction, energy and material sharing, and industrial symbiosis, helping businesses maximise resource efficiency, lower emissions, and create a more sustainable industrial ecosystem.

The DECODE Digital Twin plays a crucial role in testing and evaluating different decarbonisation scenarios, allowing stakeholders to assess the impacts of specific interventions before implementation. By modelling "what-if" scenarios, the Digital Twin helps predict trade-offs, knock-on effects, and unintended consequences of various decarbonisation actions.

For example, reports on Corby Power Station suggest that while it is operationally more efficient, it is less efficient in CO₂ emissions terms. However, because it can generate power more quickly and operate for shorter durations, its overall emissions are reduced compared to longer-running alternatives. A Digital Twin modelling tool can analyse such trade-offs, helping stakeholders scenario-test changes and optimise interventions.

Beyond energy supply, the Digital Twin also supports implementation decision-making by evaluating the combined effects of multiple interventions. For instance, the project has already tested how increasing grid capacity affects PV installation feasibility, revealing insights into where renewable investments will be most effective.

The DECODE project has worked extensively to validate and refine these digital tools, demonstrating their potential to support future decision-making and guide scenario-based interventions. As these tools continue to evolve, they will provide an essential resource for

businesses, policymakers, and industrial clusters to make evidence-based choices in the transition to net zero.

Stakeholder Feedback

A core objective of DECODE has been to ensure that decarbonisation is not just a technical challenge but a practical and strategic opportunity for businesses. Throughout the project, engagement with industrial stakeholders has reinforced the importance of making decarbonisation tangible, accessible, and financially relevant to encourage wider participation.

The Digital Twin and Carbon Management tools have been designed to help businesses understand their emissions in context, identify opportunities for improvement, and explore collaborative approaches to decarbonisation. Many industrial sites have traditionally viewed sustainability as a secondary concern, often focusing on operational efficiency and cost savings. By providing clear, data-driven insights into emissions reduction pathways, DECODE aims to demonstrate how these priorities can align with long-term sustainability goals.

The Digital Twin, in particular, has proven to be a valuable tool in presenting complex emissions data in an intuitive and interactive way. It enables businesses to model different decarbonisation scenarios, assessing the potential impact of renewable energy adoption, grid capacity changes, and efficiency measures. By translating emissions data into visual, actionable insights, the tool supports better decision-making and investment planning.

A key learning from the project has been that businesses are more likely to engage when decarbonisation is presented as a practical and financially viable step. DECODE's tools have been developed to support this, providing graphic outputs, scenario modelling, and clear cost-benefit analyses to help businesses see the advantages of participation. As the project evolves, continued collaboration with stakeholders will be essential to refine and enhance these digital tools, ensuring they remain relevant, effective, and aligned with the needs of Corby's industrial community.

Governance and Management

The delivery phase of the Local Industrial Decarbonisation Plan (LIDP) for Corby requires a dynamic, action-focused governance structure designed to support multiple programs, projects, and stakeholder collaborations. The governance framework emphasises inclusivity, flexibility, and progress-driven decision-making. This approach reflects Corby's complex industrial landscape, where businesses, local authorities, and technical partners must work collaboratively to meet ambitious net-zero carbon goals.

A Digital Twin platform will serve as the central monitoring and evaluation tool, enabling stakeholders to track progress, evaluate project impacts, and inform future actions. Additionally, the framework promotes collective advocacy for resource mobilisation, policy reforms, and regulatory adjustments critical to advancing Corby's decarbonisation agenda.

Governance Framework

The LIDP governance framework is **informally constituted**, prioritising voluntary participation, action-oriented collaboration, and continuous engagement. It is adaptable to accommodate evolving projects, new partners, and changing policy landscapes while maintaining a shared focus on carbon reduction, economic development, and energy security.

Core Principles

1. **Flexibility** - An adaptive structure capable of integrating emerging partners, technologies, and decarbonisation opportunities.
2. **Inclusivity** - Open to businesses, local authorities, academic institutions, and community representatives.
3. **Action-Focused** - Prioritising progress over formal processes, emphasising rapid response to challenges and opportunities.
4. **Transparency and Accountability** - Ensuring that project outcomes, funding use, and policy advocacy efforts are communicated clearly.

Governance Structure

Level	Description	Responsibilities
Steering Group	Senior representatives from key partner organisations (e.g., Electric Corby, Tata Steel, North Northamptonshire Council, and funders).	Strategic oversight, policy alignment, resource mobilisation, advocacy leadership.
Delivery Network	Representatives from industrial stakeholders, technology providers, and local businesses.	Project implementation, data sharing, project monitoring, and evaluation.
Working Groups	Thematic teams addressing energy systems, emissions reduction, policy advocacy, and industry engagement.	Specialised project development, technical support, lobbying efforts.
Community Forum	Public-facing engagement group comprising local business representatives and community members.	Public engagement, awareness campaigns, and local project feedback.

Roles and Responsibilities

The [emerging] governance framework emphasises shared responsibilities, voluntary participation, and decentralised decision-making. While formal legal commitments are not required, all participants agree to contribute to specific projects aligned with Corby's decarbonisation goals.

Steering Group

Responsibilities -

- Set the overall strategic direction.
- Approve major project proposals and funding applications.
- Lead lobbying for policy changes, resource allocation, and regulatory support.
- Ensure alignment with UK Government policies and funding programs.

Membership Criteria -

- Senior-level representatives from anchor organisations (e.g., Electric Corby, Tata Steel).
- NGED, UK Government and Ofgem representatives (as advisory members).

Delivery Network

Responsibilities -

- Oversee implementation of LIDP projects and programs.
- Share emissions, operational, and energy-use data through the Digital Twin platform.
- Coordinate site-based project delivery (e.g., renewable energy installations, energy efficiency upgrades).

Membership Criteria -

- Local industries, manufacturers, energy service providers, and logistics operators.
- Technology partners offering technical and digital solutions.

Working Groups

Responsibilities -

- Develop and implement action plans in specific project areas, including -
 - Renewable energy deployment.
 - Industrial electrification and hydrogen adoption.
 - Community DSO business models and energy sharing.
 - Policy and regulatory advocacy.

Membership Criteria -

- Representatives with relevant expertise (e.g., engineering leads, sustainability managers).
- Open to new members from academia, business, and government agencies.

Community Forum

Responsibilities -

- Host community workshops and outreach events.
- Provide feedback on project impacts and policy proposals.
- Serve as a public engagement platform to share project achievements.

Membership Criteria -

- Local businesses, property developers, community leaders, and residents.

Utilising the Digital Twin Platform

The Digital Twin platform is central to the LIDP's governance framework, enabling transparent project monitoring, data-driven decision-making, and predictive modeling.

Platform Functions

1. **[Near] Real-Time Data Tracking**
 - Monitor carbon emissions, energy use, and project milestones across the industrial cluster.
2. **Scenario Simulations**
 - Evaluate proposed projects, such as renewable energy installations or emissions reduction strategies, before implementation.
3. **Performance Reporting**
 - Generate data-backed progress reports shared with all governance levels, funding bodies, and regulatory authorities.
4. **Data Access and Collaboration**
 - Ensure that all partners can access project performance dashboards and share site-specific data securely.

Monitoring and Evaluation Process

- **Monthly Data Submissions** - Industrial stakeholders upload performance data.
- **Quarterly Project Reviews** - Delivery Network evaluates project performance using platform-generated reports.
- **Annual Impact Reports** - Comprehensive project summaries shared with the UK Government and funding bodies.

Collective Advocacy

Advocacy is central to the LIDP governance framework, enabling stakeholders to collaboratively pursue policy reforms, financial support, and technical assistance at local, regional, and national levels.

Advocacy Objectives

1. **Funding Mobilisation** - Secure grants, loans, and investment from UK Government programs and private funders.
2. **Policy Support** - Push for decarbonisation-enabling policies such as grid access reform, energy system upgrades, and regulatory exemptions for local energy sharing.
3. **Regulatory Engagement** - Collaborate with Ofgem, DESNZ, and regional policy bodies to pilot innovative decarbonisation models like the Community DSO.

Advocacy Strategies

- **Unified Messaging** - Develop shared advocacy messages reflecting project achievements and funding needs.
- **Policy Proposals** - Submit policy papers on issues like grid constraints, energy trading models, and financial incentives.
- **Stakeholder Engagement Campaigns** - Conduct public engagement campaigns to increase visibility and political support.
- **Lobbying Delegations** - Form advocacy delegations representing diverse stakeholders to present a unified voice in policy discussions.

Plan Development and Refinement

Draft Plan

The development and refinement of the Local Industrial Decarbonisation Plan (LIDP) for Corby is and must remain a continuous, collaborative process designed to ensure the plan remains relevant, actionable, and aligned with stakeholder needs.

The draft LIDP serves as the initial blueprint for Corby's industrial decarbonisation strategy, laying out the proposed actions, milestones, and expected outcomes for the cluster. It incorporates baseline emissions data, identified technological interventions, and potential collaborative initiatives.

This section outlines the key phases and ongoing processes involved in building a comprehensive and adaptive plan, using stakeholder input, scenario modelling, and robust feedback loops.

Key Components of the Draft Plan

- **Baseline Assessment** - Detailed emissions profile highlighting major emitters and priority sectors for decarbonisation.
- **Proposed Decarbonisation Pathways** -
 - *Green the Grid* - Aligning with national renewable targets while supporting businesses in improving energy efficiency.
 - *Fight for Power* - Prioritising early investment in local renewable energy generation and shared infrastructure.
 - *Optimise and Share* - Community-based energy-sharing solutions leveraging a Community DSO model.
- **Initial Project Proposals** - Pilot projects in renewable energy installations, microgrid development, and carbon management.
- **Implementation Timeline** - Indicative timelines for phased project rollouts and key deliverables.

Feedback and Iteration

The iterative refinement of the LIDP relies on structured engagement with stakeholders to ensure that proposed solutions are practical, effective, and aligned with business priorities.

Feedback Process

- **Stakeholder Consultations** - Regular workshops and one-on-one meetings with major emitters and local authorities.
- **Digital Twin Simulations** - Use of digital twin technology to visualise and assess the impact of proposed strategies, allowing stakeholders to understand potential outcomes before implementation.
- **Surveys and Feedback Forms** - Gather qualitative and quantitative feedback from businesses on proposed initiatives.

Iteration Steps

1. **Identify Gaps** - Review feedback to identify missing considerations, such as new regulatory requirements or emerging technologies.
2. **Scenario Adjustment** - Modify scenarios and optioneering pathways based on feedback and real-time data.
3. **Draft Revisions** - Update timelines, resource allocations, and partnership roles accordingly.

Final Plan

The *First* Final Plan

There is no Final LIDP until the job is done.

In practice this is the *FIRST* final LIDP that integrates stakeholder feedback and scenario analyses into a strategy that aspires to be but is not yet comprehensive but has initial detailed implementation steps and performance metrics.

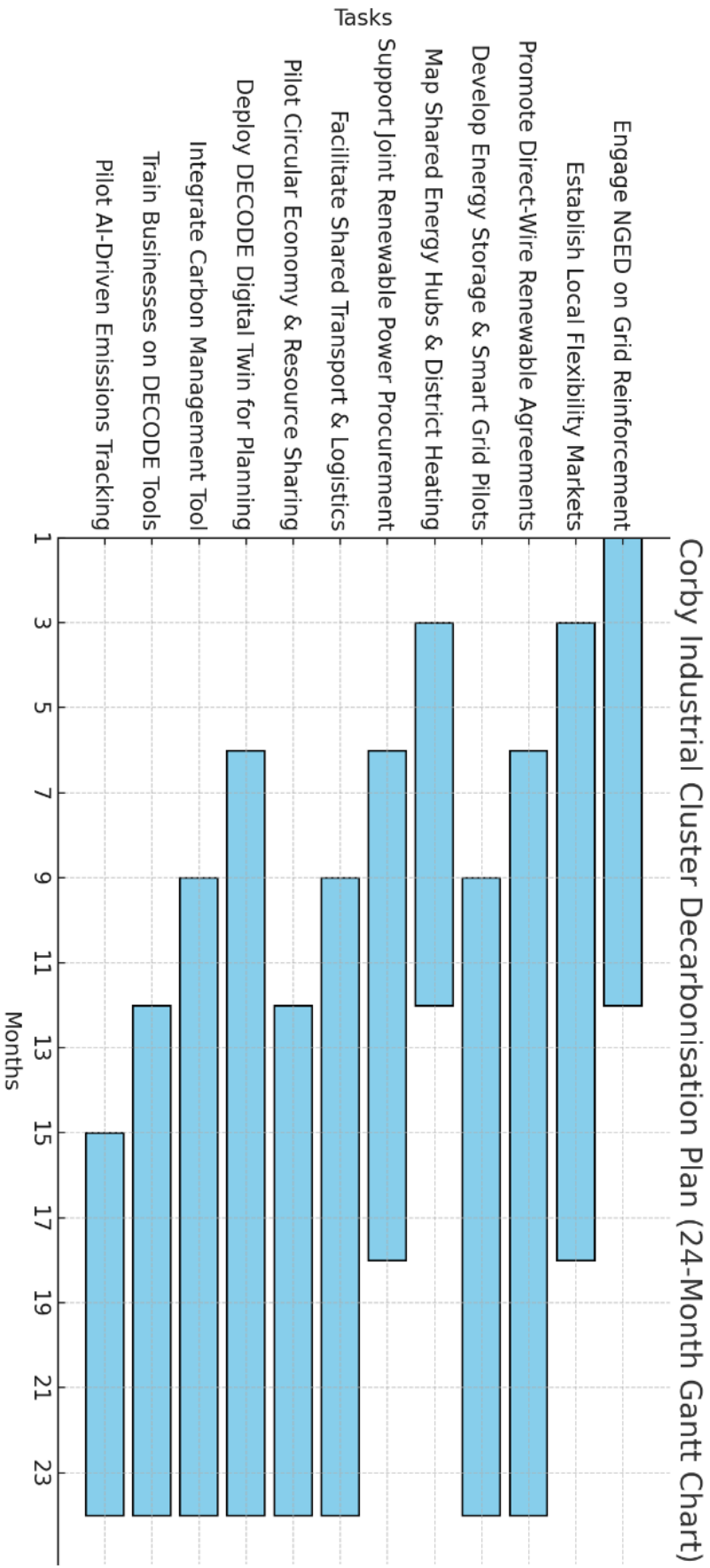
Key Elements of the Final Plan:

1. **Addressing Grid Constraints is Critical for Industrial Decarbonisation**
 - Without urgent reinforcement and flexibility solutions from NGED, industries will struggle to electrify operations and integrate local renewable energy. Businesses must collaborate on flexibility markets, direct-wire renewables, and grid advocacy to accelerate progress.
2. **Collaboration and Shared Infrastructure Can Reduce Costs & Barriers**
 - Industrial decarbonisation is more achievable through collective action. Solutions like industrial energy hubs, shared transport decarbonisation, and shared resources efficiency offer cost-effective pathways to net-zero that no single business can deliver alone.
3. **Digital Tools Like the DECODE Digital Twin Enable Smarter Decision-Making**
 - The DECODE Digital Twin and Carbon Reduction Tools provide data-driven insights that help industries identify the most cost-effective decarbonisation strategies, model future scenarios, and align investments with long-term resilience and competitiveness

Key Actions & Activities

Strategic Requirement	Key Actions	Timeline	Tools & Resources Used
1. Address Grid Constraints	<ul style="list-style-type: none"> - Engage NGED to prioritise grid reinforcement for industrial electrification. - Establish local flexibility markets for demand-side response. - Promote direct-wire renewable agreements to bypass grid constraints. - Develop energy storage and smart grid pilot projects to reduce peak loads. 	Months 1–24	<ul style="list-style-type: none"> DECODE Digital Twin for grid scenario modelling Carbon Reduction Tool to quantify impact Stakeholder Working Groups for NGED engagement
2. Develop Shared Industrial Infrastructure	<ul style="list-style-type: none"> - Identify and map opportunities for shared energy hubs and district heating networks. - Support joint procurement for industrial-scale renewable power (PPAs). - Facilitate collaboration for shared transport solutions (EV charging hubs, alternative fuels). - Implement circular economy pilots (waste heat recovery, shared resource efficiency). 	Months 3–24	<ul style="list-style-type: none"> DECODE Digital Twin for geospatial planning Industrial Decarbonisation Forum for shared projects Local Business Engagement for participation
3. Deploy DECODE Digital Tools for Decision-Making	<ul style="list-style-type: none"> - Integrate the DECODE Digital Twin for scenario planning at the cluster level. - Support businesses in using the Carbon Management Tool for real-time Scope 1, 2 & 3 tracking. - Conduct workshops to train businesses in using DECODE Carbon Reduction Tool for costed emissions reduction planning. - Pilot AI-driven emissions tracking for cluster-wide visibility. 	Months 6–24	<ul style="list-style-type: none"> DECODE Digital Twin for impact simulation Carbon Management Tool for emissions tracking Business Training & Outreach for adoption

- **Actionable Strategies** - Clear, prioritised decarbonisation actions tailored to Corby's industrial profile.
- **Defined Roles and Responsibilities** - Specific roles for key partners and stakeholders in executing each phase.
- **Monitoring and Reporting Framework** - A robust framework for tracking progress using the Digital Twin platform.
- **Resource Mobilisation Plan** - A strategy for securing funding and in-kind contributions to support plan implementation
- **Initial Projects** – those projects stakeholders are committed to at the launch stage of the LIDP (Short-Term Actions 0-12 months)



Implementation and Monitoring

Implementation Strategy

The implementation of the LIDP involves coordinating multiple programs and projects, ensuring progress is tracked, and making adjustments where necessary. This section outlines the approach to executing the plan, evaluating outcomes, and maintaining stakeholder accountability.

Implementation Strategy

The LIDP implementation strategy includes short-term, medium-term, and long-term actions, with clear timelines, resources, and milestones for each.

Short-Term Actions (0–12 months)

- Launch pilot projects (e.g., solar PV installations, energy storage trials).
- Form working groups for key focus areas (e.g., hydrogen adoption, P2P energy trading).
- Deploy the Digital Twin platform for ongoing baseline data collection and further scenario modelling.

Medium-Term Actions (12–36 months)

- Scale up successful pilot projects into full-scale deployments.
- Establish shared infrastructure solutions, such as microgrids and district heating.
- Implement capacity-building programs for local businesses, focusing on energy efficiency and emissions reduction.

Long-Term Actions (36+ months)

- Optimise and integrate decarbonisation pathways across the industrial cluster.
- Monitor policy developments and update the LIDP as necessary.
- Disseminate lessons learned to other UK industrial clusters.

Monitoring and Evaluation Framework

A structured monitoring and evaluation (M&E) framework ensures that progress toward decarbonisation goals is measured, reported, and adjusted as needed.

Core Components of the M&E Framework

- **Performance Indicators** - Track key metrics, including CO₂ emissions reductions, renewable energy capacity installed, and stakeholder engagement levels.
- **Quarterly Reviews** - Regular review meetings to assess project milestones, challenges, and successes.

- **Annual Impact Reports** - Comprehensive reports detailing progress and recommended adjustments, shared with stakeholders and funding bodies.

Reporting Mechanisms

Transparent reporting ensures accountability and keeps stakeholders informed of progress.

Internal Reporting

- Weekly progress updates for the Delivery Network.
- Monthly reports to the Steering Group summarising key developments.

External Reporting

- Quarterly reports shared with external partners, including government bodies and funding agencies.
- Public-facing updates via newsletters and community forums to maintain engagement and build support.

Knowledge Sharing and Dissemination

The success of the **Local Industrial Decarbonisation Plan (LIDP) for Corby** depends not only on its implementation at a local level but also on its ability to share insights, lessons learned, and best practices with a wider audience. A well-structured dissemination strategy will ensure that stakeholders across Corby, as well as other UK industrial clusters, can benefit from the project's outcomes. This will contribute to broader **national and international industrial decarbonisation efforts**.

Dissemination Plan

The dissemination plan defines how the project's findings will be communicated to **businesses, policymakers, local communities, academic institutions, and funding agencies**. The aim is to increase awareness, promote engagement, and support the replication of best practices.

Objectives

The dissemination activities will focus on:

- Raising awareness of the LIDP's progress and achievements.
- Sharing **practical, actionable insights** to help other industrial clusters accelerate decarbonisation.
- Engaging policymakers to **influence supportive regulations and funding mechanisms**.

Dissemination Methods

Method	Description
Reports & Publications	Regular publication of technical reports and public summaries Peer-reviewed journal articles focusing on methodologies such as Digital Twin modelling and stakeholder engagement.
Digital Platforms & Content	Dedicated project webpage featuring interactive dashboards Regular blog posts, case studies, and newsletters for accessible updates.
Data-Sharing Portal	Secure online portal for stakeholders to access emissions datasets, visualisations, and scenario modelling results.

Engagement Activities

Proactive engagement with stakeholders and the wider public will **strengthen the credibility and impact of the LIDP**. The approach will prioritise collaboration, knowledge exchange, and industry engagement.

Key Engagement Activities

- **Conferences & Webinars**
 - Annual conferences showcasing project outcomes and cross-sector collaboration.
 - Themed webinars on topics such as industrial electrification and community energy models.
- **Workshops & Training Sessions**
 - Hands-on training for local businesses on **carbon accounting and energy efficiency**.
 - Sessions on **Digital Twin applications** to support data-driven decision-making.
- **Community Outreach Events**
 - Public engagement activities highlighting the **economic and environmental benefits** of decarbonisation.
 - Site visits to **pilot locations** (e.g., renewable energy installations).
- **Collaborative Knowledge-Sharing Forums**
 - Partnerships with other UK industrial decarbonisation projects to **exchange best practices**.
 - Contributions to **national and international net-zero initiatives**.

Key Outputs & Communication Materials

To support ongoing dissemination, a range of **communication materials** will be developed:

Material	Purpose
Annual Reports	Summarise LIDP progress, key outcomes, and future steps.
Policy Briefs	Provide concise, evidence-based recommendations for policymakers.
Case Studies	Document real-world applications of successful decarbonisation initiatives.
Infographics & Visual Aids	Simplify complex data for broader accessibility.

National & International Dissemination

To ensure the LIDP’s findings have a broad impact, dissemination activities will extend beyond the local region to national and international stakeholders. The rationale for the international level activity is linked closely to North Northamptonshire Economic Growth and Inwards Investment ambitions, where attracting investment and businesses is supported by leveraging higher ESG standards and specifically circular economy and sustainable energy provision.

National-Level Dissemination

- Present project findings at **UK Government-hosted events and regulatory workshops**.

- Share reports with **DESNZ, Ofgem, and local authorities** to inform ongoing policy development.

International Knowledge Exchange

- Contribute to **global industrial decarbonisation networks**.
- Collaborate with universities and research institutions to present findings at **international conferences**.

Monitoring & Continuous Improvement

To ensure that **knowledge-sharing efforts remain impactful**, an **evaluation framework** will be implemented.

Evaluation Metric	Monitoring Approach
Stakeholder Engagement Levels	Track participation in reports, webinars, and forums.
Reach & Accessibility	Measure event attendance, report downloads, and web traffic.
Stakeholder Feedback	Collect feedback to assess the effectiveness of dissemination efforts.

Continuous Improvement Measures

- **Regular content updates** to reflect the latest project insights.
- **Stakeholder-driven refinements** to dissemination strategies based on feedback.
- **Leveraging emerging technologies** to expand outreach and engagement.

By implementing a structured knowledge-sharing and dissemination strategy, the DECODE LIDP will extend its impact beyond Corby and contribute to industrial decarbonisation at scale. Through targeted reports, digital platforms, and stakeholder engagement activities, the project’s findings will support policymakers, businesses, and communities in their transition towards net-zero industrial practices.

Conclusion

The Local Industrial Decarbonisation Plan (LIDP) for Corby represents a significant step towards achieving net-zero emissions while maintaining economic competitiveness. This plan has outlined strategic and implementation pathways that align with the needs of industrial stakeholders, tackling key challenges such as energy costs, emissions reductions, and infrastructure constraints.

A major takeaway from the LIDP is the critical need to address **grid constraints** in collaboration with **National Grid Electricity Distribution (NGED)**. Without sufficient grid capacity and flexibility, industrial electrification and local renewable generation will be hindered, delaying the transition to cleaner energy sources. Therefore, engaging with NGED to prioritise grid reinforcements, innovative local flexibility models, and shared infrastructure solutions will be essential.

Additionally, achieving industrial decarbonisation requires **coordinated resources and multi-stakeholder collaboration**. Businesses, policymakers, and energy providers must work together to optimise funding opportunities, regulatory support, and shared investments in low-carbon infrastructure. The LIDP serves as a **living document**, evolving with industry needs and emerging technologies, ensuring Corby remains at the forefront of industrial decarbonisation.

By integrating energy solutions, process efficiency measures, and circular economy initiatives, the plan provides a **scalable blueprint for other industrial clusters** across the UK. Continued engagement, financial mobilisation, and innovative digital tools such as the **DECODE Digital Twin** will be crucial in driving measurable progress, ensuring that Corby's industrial sector not only transitions to net-zero but does so in a way that enhances long-term economic resilience

Three Big Takeaways for Stakeholders

4. **Addressing Grid Constraints is Critical for Industrial Decarbonisation**
 - Without urgent reinforcement and flexibility solutions from NGED, industries will struggle to electrify operations and integrate local renewable energy. Businesses must collaborate on flexibility markets, direct-wire renewables, and grid advocacy to accelerate progress.
5. **Collaboration and Shared Infrastructure Can Reduce Costs & Barriers**
 - Industrial decarbonisation is more achievable through collective action. Solutions like industrial energy hubs, shared transport decarbonisation, and shared resources efficiency offer cost-effective pathways to net-zero that no single business can deliver alone.
6. **Digital Tools Like the DECODE Digital Twin Enable Smarter Decision-Making**
 - The DECODE Digital Twin and Carbon Reduction Tools provide data-driven insights that help industries identify the most cost-effective decarbonisation strategies, model future scenarios, and align investments with long-term resilience and competitiveness

Appendices

Decarbonisation Actions – schedule of optional actions, interventions and solutions

Terms of Reference for Decarbonisation Delivery Consortium