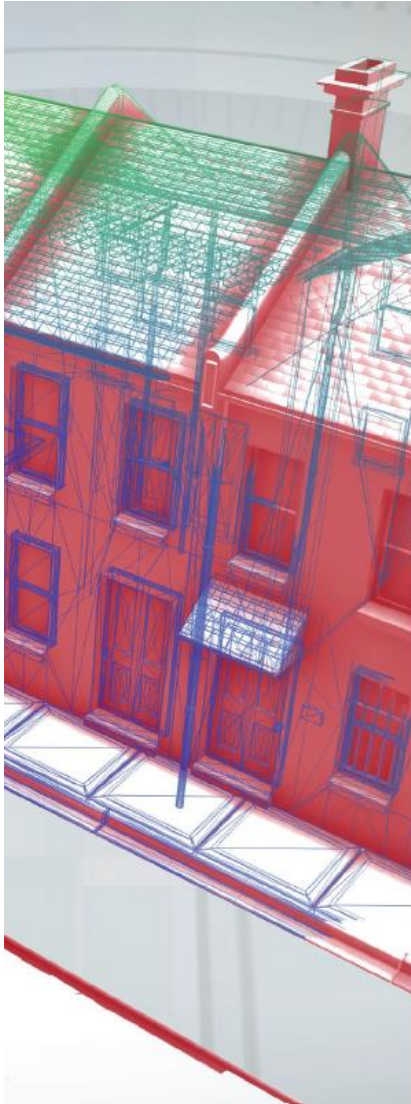


Bridgend Council Decarbonisation



Bridgend County Borough Council
Cyngor Bwrdeistref Sirol Pen-y-bont ar Ogwr

Smart Systems and Heat Programme



Bridgend County Borough Council
Local Area Energy Strategy

ESC Project Number ESC00048

ETI Project Number SS9006

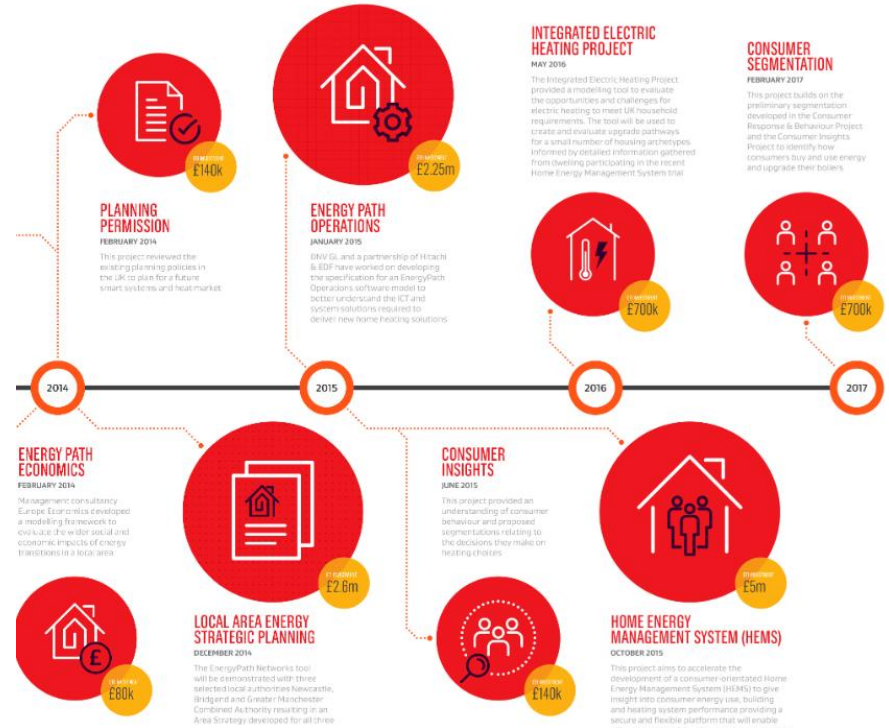
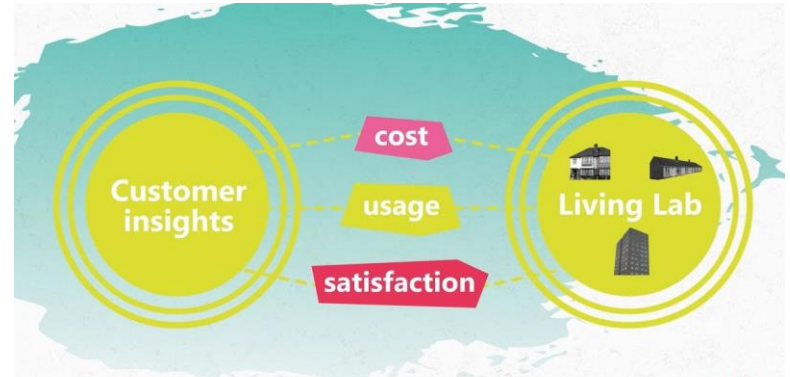
Version 2.3

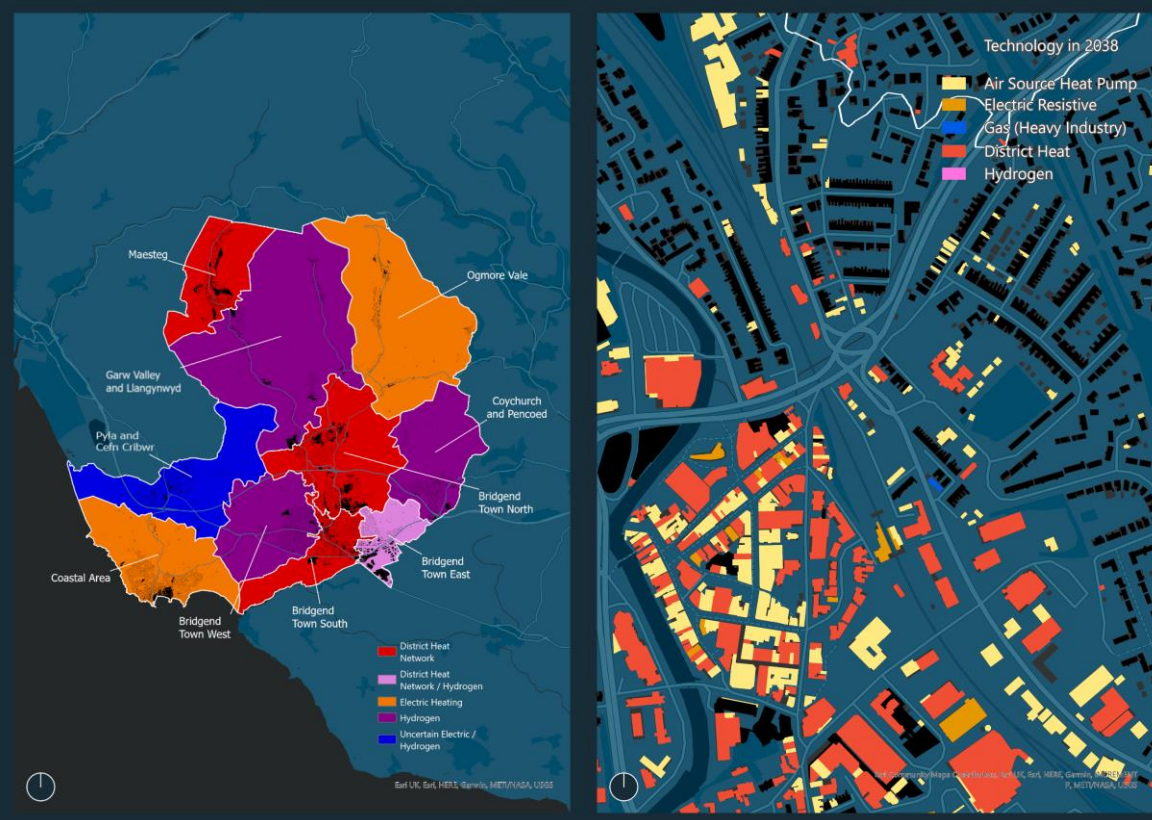
Final

Cyngor Bwrdeistref Sirol



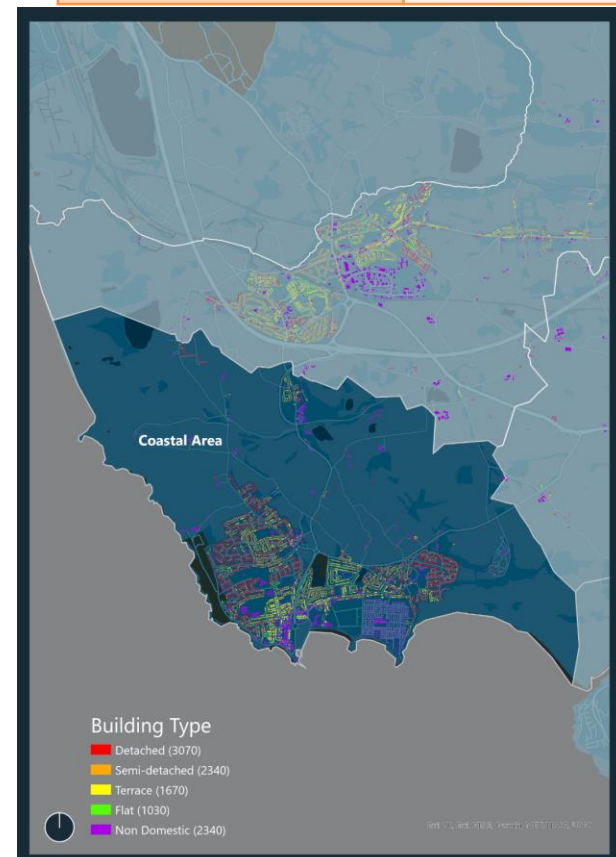
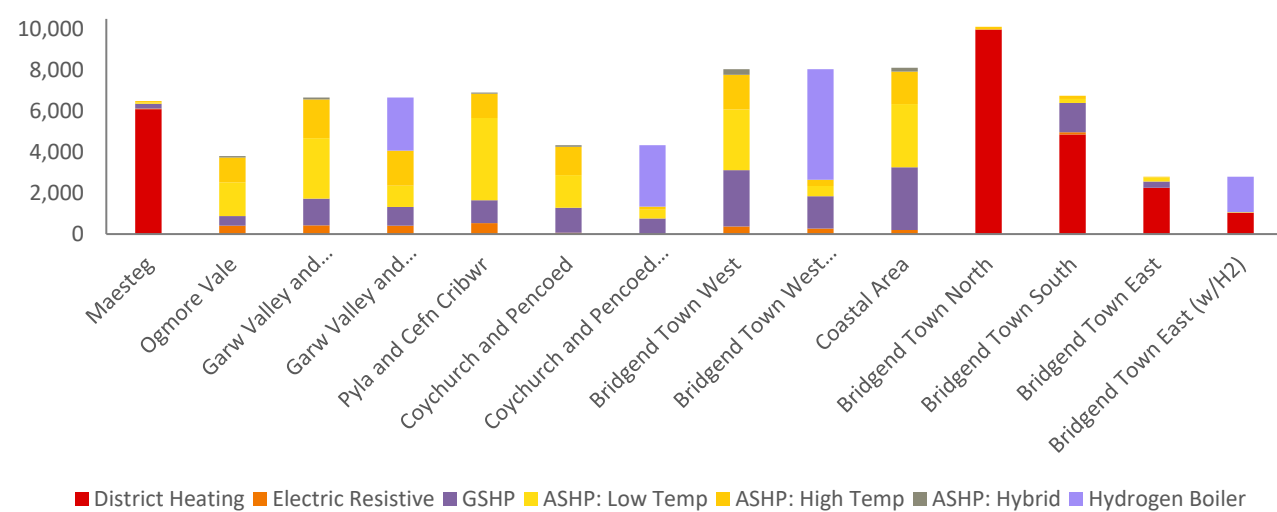
Delivered by
CATAPULT
Energy Systems





Zone	Total Investment (£m)
Maesteg	267
Ogmore Vale	170
Garw Valley & Llangynwyd	258
Pyla & Cefn Cribwr	251
Coychurch & Pencoed	183
Bridgend Town West	218
Coastal Area	300
Bridgend Town North	424
Bridgend Town South	417
Bridgend Town East	192

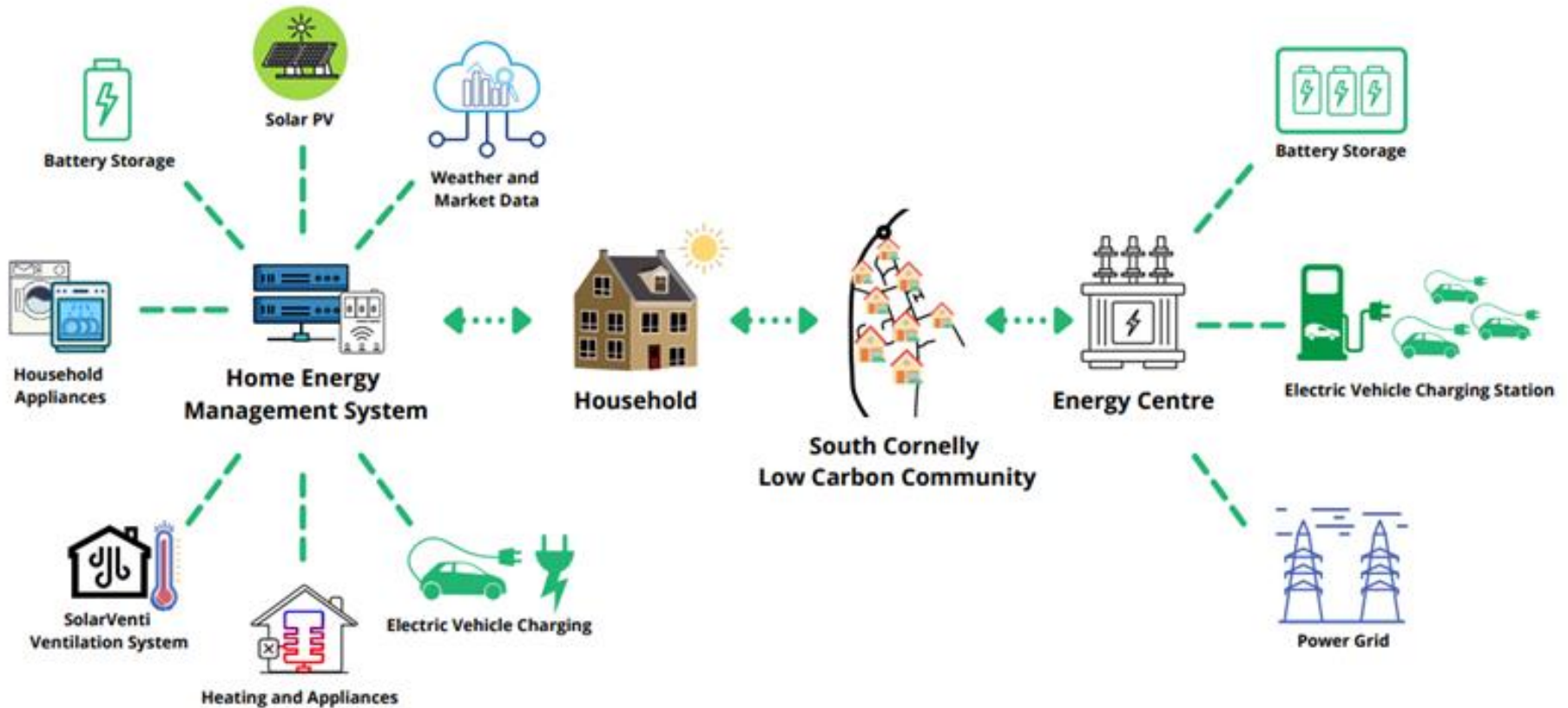
Deployment of Heating Systems by 2040



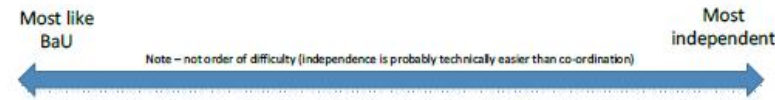
Current Smart Energy Plan

2018	2019: <i>FIT scheme closes - UK leaves EU</i>	2020: <i>WG carbon target/budget end - Smart meters rolled-out - WG elections</i>	2021: <i>RHI planned closure - Current Arbed end date - Local elections</i>	2022 <i>UK elections - Current WG RE Support Service end date</i>	2023 <i>ERDF funding ends</i>	2024	2025: <i>WG elections (if not earlier) - WG carbon budget (2021-25)</i>
DP1 Bridgend Town Lower Carbon District Heat (DH) Network Phase 1: 1 st step to decarbonising Bridgend town.							
DP2 Bridgend Town Lower Carbon DH Network Phase 2: Build on DP1 business case and extend heat network.							
DP3 Energy Efficiency Projects: Tackle fuel poverty by installing energy efficiency measures in areas in need.							
InP1 Fully Targeted Retrofit: Understand the benefits of dynamic modelling and performance monitoring and how these can help develop more compelling retrofit offerings for consumers.							
InP2 Hybrid Heat Pumps and Full Electrification: Build on the success of the FREEDOM project and further explore the role of hybrid heat pumps in the overall decarbonisation of the Bridgend energy system.							
InP3 Caerau Mine Water Gas-to-District Heating Transition: Deliver a demonstrable example of a low carbon DH system which transitions existing residential consumers from gas heating to DH.							
InP4 Affordable Urban Heat Networks (HNs): Establish solutions for reduced HN costs & improved efficiencies.							
InP5 Electrification of Heat through Energy as a Service: Deliver energy as a service to heating consumers via different electrified heating technology packages and gain insights to assist further roll-out if successful.							
InP6: Intelligent Bridgend Energy System Design: Explore the benefits that arise from integration of heat, electricity & transport systems							
					Activity A Non-Domestic Building Data: Gather data on Bridgend's non-domestic buildings and update the Strategy.		
Activity B Low & Zero Carbon DH Energy Sources: Identify and investigate potential lower and zero carbon heat sources for DH networks to feed-in to future projects.							
Activity C Planning Policy Alignment with Decarbonisation Strategy: Ensure the new LDP accounts for the Local Area Energy Strategy.							
Activity D Establishing Bridgend as a Centre for Innovation: Effectively market Bridgend as an area to trial innovation projects and stimulate economic growth.							
Activity E Identify Power, Transport and Digitalisation Projects: Develop complementary electricity, transport and digital infrastructure projects alongside the heating projects to ensure that decarbonisation takes place in a joined-up manner.							
					Activity F Scoping Future Delivery Plans: Ensure continual learning to achieve large-scale deployment initiatives.		

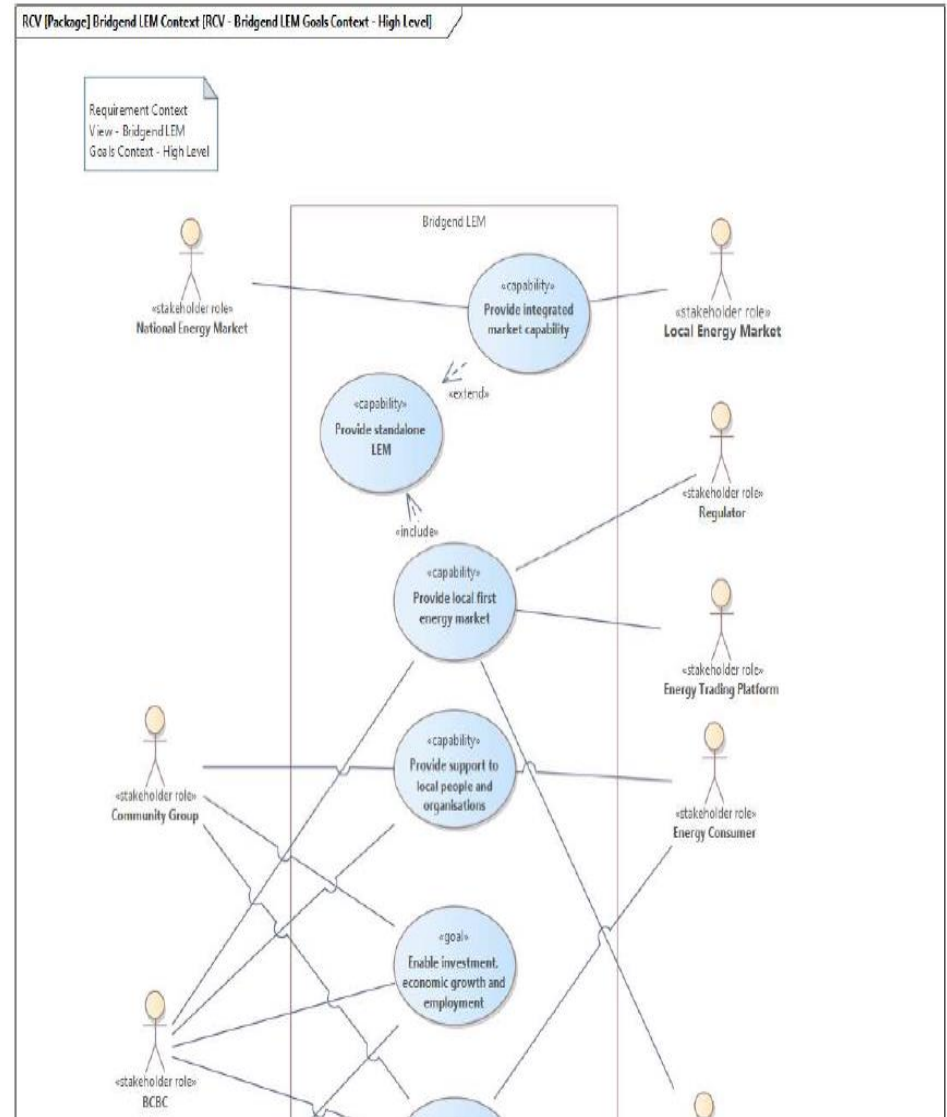
South Cornelly Local Energy Market



Local Energy Market System Architecture



	Most like BaU			Most independent
Policy and Regulation	Work within existing and future UK national policies	Some deviations from UK policy and legislation requiring local rules and derogations	Parallel local operation, with local rules driving local focus within national/UK framework	Separate, independent local rules, outside of national/UK framework
Commercial Markets and Trading	National retailers, buying energy on open markets, emerging national aggregators and DSO flexibility markets	Some local companies, trading within national policies, but with a more local/community focus	Hierarchical trading e.g. local first, then offered to national markets	Fully or pseudo-standalone with independent trading and control (dispatch) of multi-vector energy
Operation and Control	Dispatch handled through national markets and system operators (multi-vector)	Nationally driven, with isolated local operations e.g. H2->Electric private network with peer to peer trading and local balancing	Some local energy systems under local operation, but with ability to engage nationally	Local energy systems under local operation, with virtual interconnects to national/UK system
Systems Integration	Local energy systems integrated within national/UK system	Fully integrated, multi-vector local energy systems operating standalone or as part of national/UK system	Fully integrated, multi-vector local energy systems operating in parallel to national/UK system	Fully integrated, multi-vector local energy systems operating independently of other local and national systems
Consumer Engagement	Consumers buy energy from single supplier, paying per unit of energy based on usage. Suppliers operate in national/UK markets and offer consumers incentives to participate	Consumers buy energy from suppliers with local focus. Suppliers operate in national/UK markets but provide local/community focus and benefits	Consumers participate in community or cooperative energy groups that focus on local markets, returning benefits to local community	Fully engaged "prosumers" with local energy assets that actively participate in local markets through independent means



How does Bridgend meet the challenges of climate change?



Bridgend's Citizen Climate Assembly



Carbon Management Initiatives

CM1	The council will appoint a technical expert in 2022 to undertake a more specific 'bottom-up' reduction pathway, providing more detailed carbon and financial modelling results for the agreed Action Plans in the 2030 Strategy.
CM2	Carbon impact and implications to be included in all council business cases for investment, integrated with the wellbeing of future generations assessment.
CM3	The decarbonisation agenda will be proactively communicated to staff to support the uptake of low-carbon behaviours.
CM4	Carbon Literacy training will have been completed by the end of the 2022/23 financial year and the training will be integrated into standard HR processes, such as e-learning modules.
CM5	All council job descriptions will be updated to include the general carbon responsibilities of employees and selected key council job descriptions will include defined carbon responsibilities as part of their role within the council.
CM6	Through its participation in the Local Government Pension Scheme, BCBC acknowledges that climate change and carbon emission management is one of the risk factors of responsible investment and will support and actively monitor the delivery of the Fund's commitment to an orderly carbon transition and its active engagement with investee companies to reduce carbon exposure across the Pension Fund.
CM7	Utilise the Welsh Government Public Sector Carbon Reporting Guide to report annually the Carbon Footprints of council's operations, this will form the basis for tracking progress against the Net Zero 2030 target.

Land Use Initiatives

L1	The council will support the delivery of LDP identified renewables and offsetting opportunities on its own land and neighbouring land, and also influence and support broader county-wide schemes through the council's role in planning.
L2	The council will improve its understanding of all owned land assets to correctly appreciate the levels of carbon sequestration by March 2023 and develop plans to maximise carbon benefits in these areas.
L3	The council will ensure all owned woodland and greenfield areas are maintained in a way to promote enhanced biodiversity and avoid any unnecessary loss of carbon sequestration.
L4	The council will identify its own and neighbouring land for large-scale renewable developments, primarily solar and wind projects. Private wire connections to owned sites will be prioritised over exporting directly to the grid.
L5	Where large-scale renewable developments are not possible, the council will prioritise these areas for afforestation/reforestation and biodiversity programmes on its own land.
L6	The council will undertake an assessment to understand the extent of peatland across its estate; a continual maintenance and regeneration programme will be put in place for any identified areas.
L7	The council will identify the additional maintenance resource needed to help kick start a more extensive green infrastructure programme across the county borough.



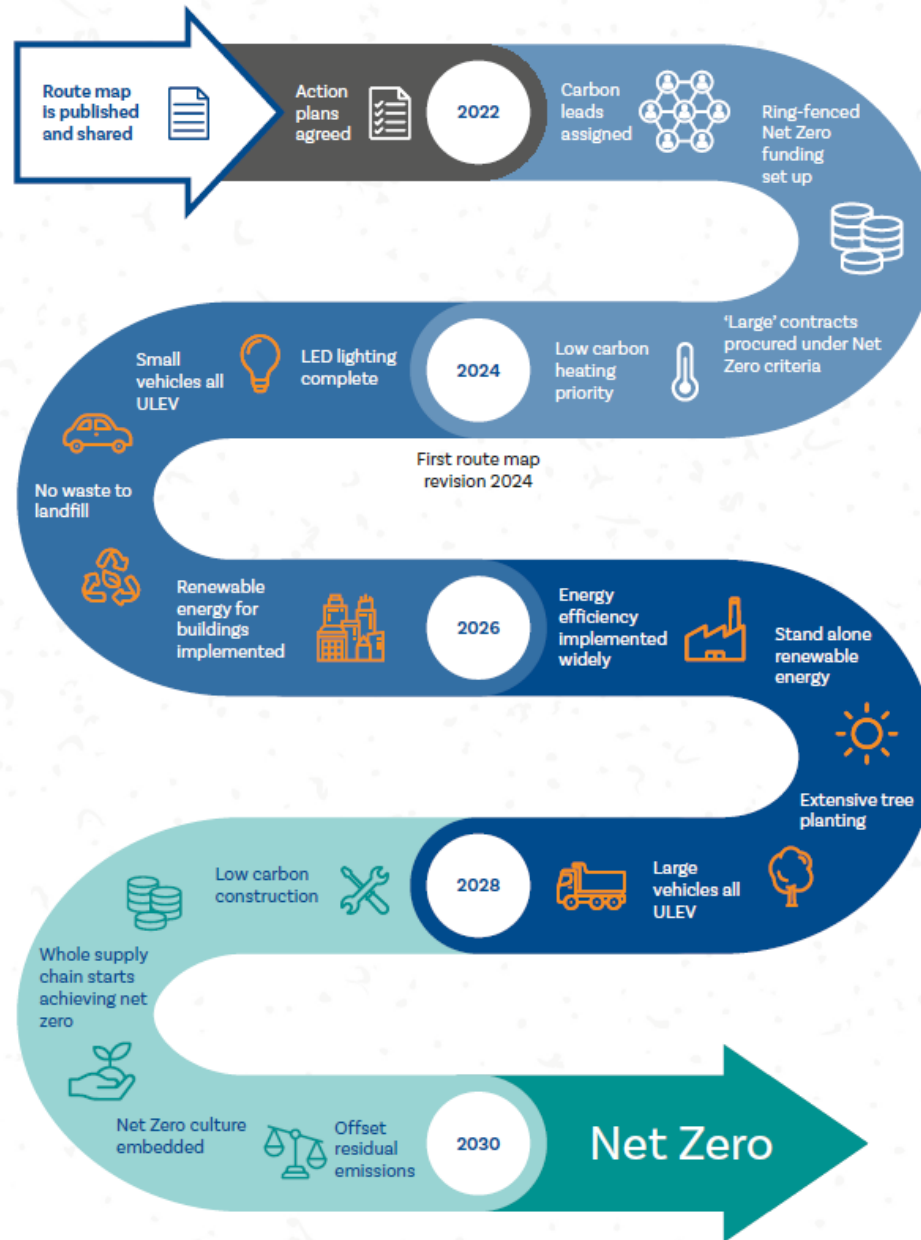
2030 Pen-y-bont ar Ogwr
Bridgend 2030

Strategaeth Garbon Sero Net

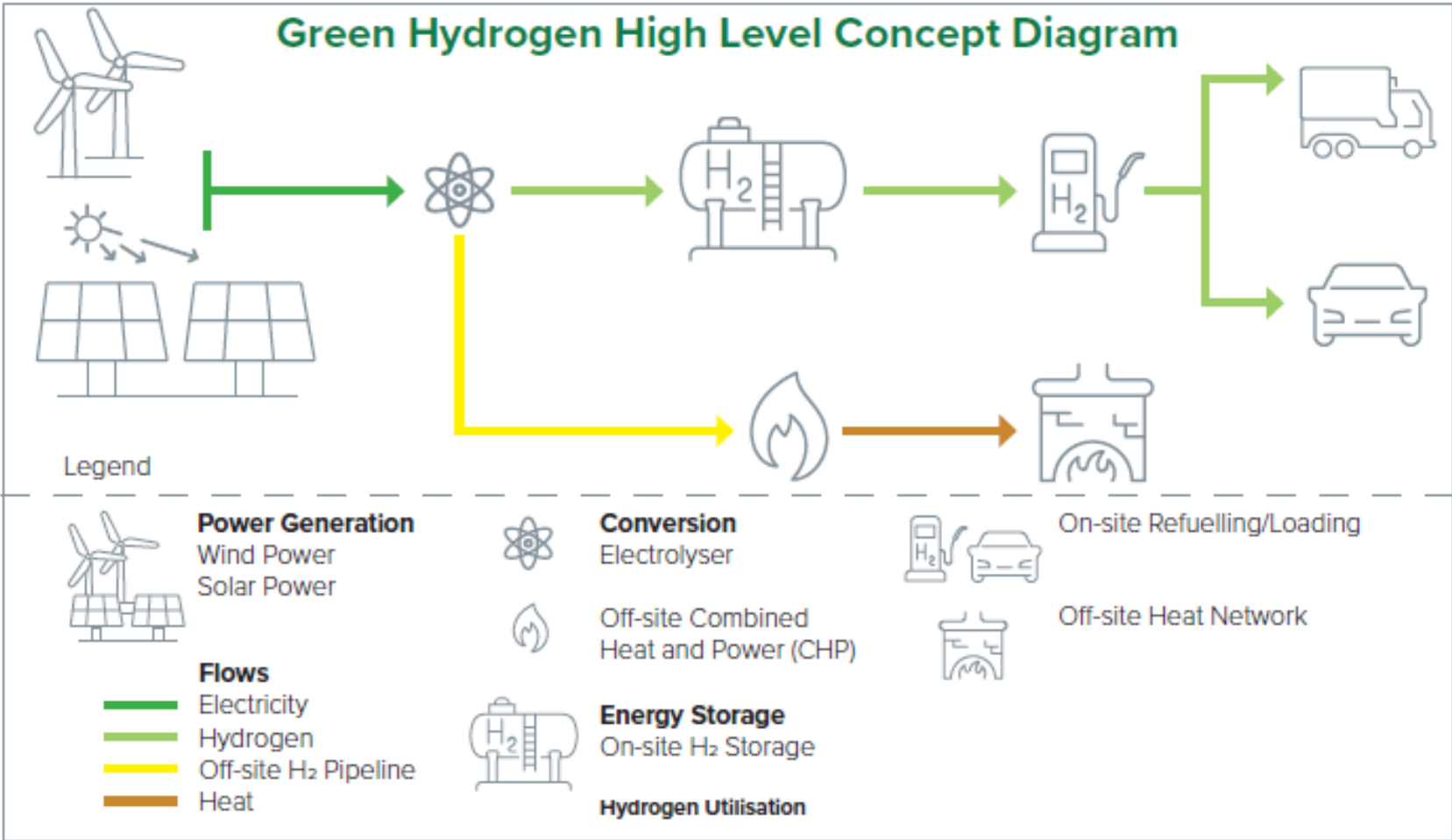
Pen-y-bont ar Ogwr

2030

Cyngor Bwrdeistref Sirof
BRIDGEND
County Borough Council



HyBont – Green Hydrogen Production



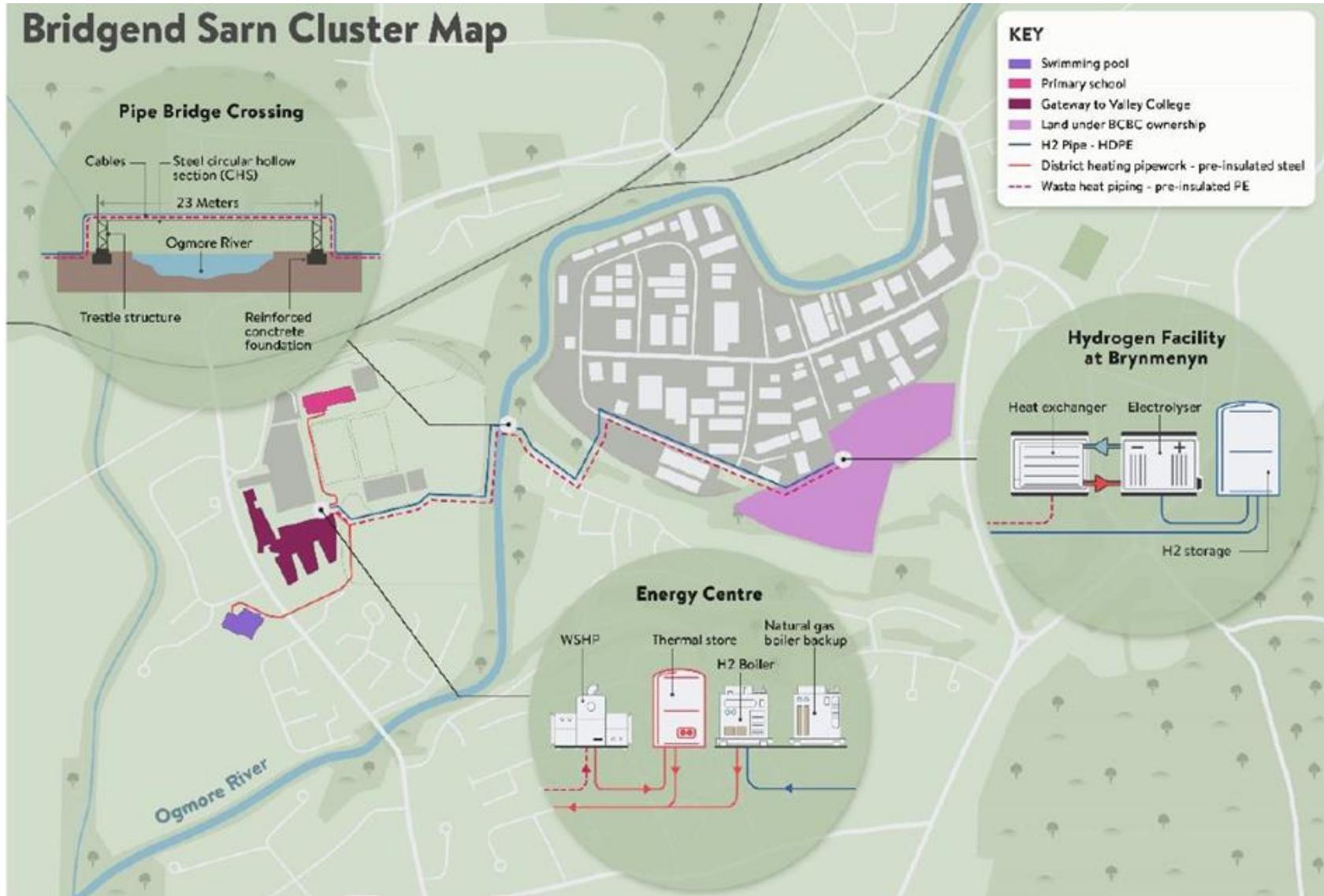
HyBont – Green Hydrogen Production



HyBont – Green Hydrogen Production



Ynysawdre Heat Network



Discussion