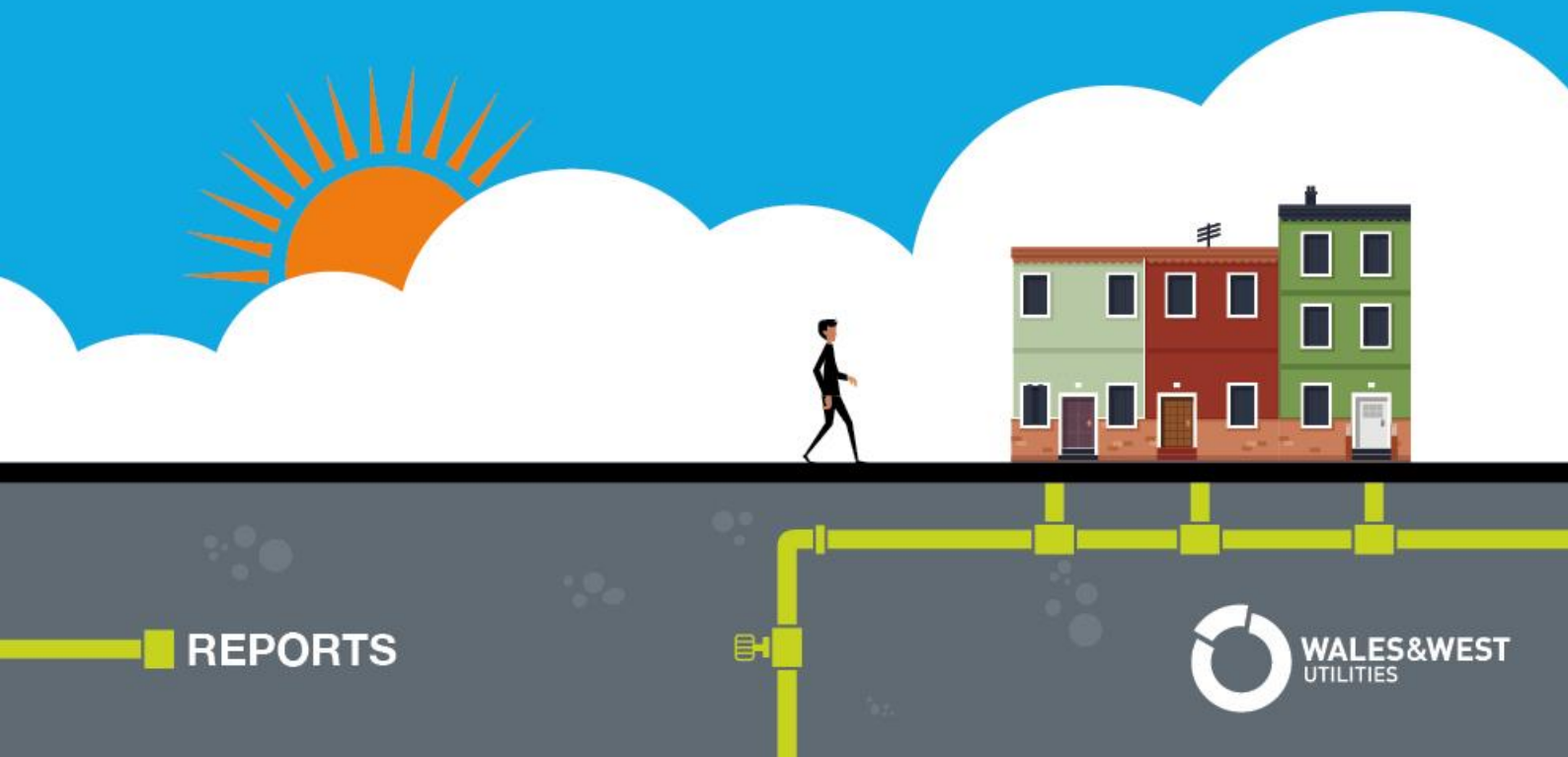


Consumer Value Proposition

2C19: Whole system data and pathfinder model

December 2019



REPORTS



WALES & WEST
UTILITIES

Overview of Consumer Value Proposition	3
Summary of CVP	4
Summary of CBA inputs	5
Cost Benefit Analysis details	6

Legal Notice

This paper forms part of Wales & West Utilities Limited Regulatory Business Plan. Your attention is specifically drawn to the legal notice relating to the whole of the Business Plan, set out on the inside cover of The WWU Business Plan. This is applicable in full to this paper, as though set out in full here.

Overview of Consumer Value Proposition

Commitment name

Data Sharing: Sharing of network data and Pathfinder model

Description

Wales and West Utilities are strong proponents of data sharing with others within and outside of our sector and have been playing a leading role in this area in RIIO-GD1.

Two key data sharing innovations that will continue to be delivered and enhanced over GD2 include the sharing of network data (e.g. projects such as the Supergen Energy Networks Hub) and the sharing of the 2050 Energy Pathfinder model. Both initiatives contribute significant value to the future of gas planning that is critical in deciding future investment policy and asset lifespans for WWU and the wider sector.

The 2050 Energy Pathfinder has been built to assess the feasibility of how different future energy mixes would work in practice. WWU will continue to develop and share this energy modelling tool with interested parties at no cost over the course GD2. This includes Local Authorities, other utilities including GDNs and EDNs, universities and other organisations that can play a role in delivering an energy network that supports net zero.

The Supergen Energy Networks Hub is a key enabler to progress towards whole energy systems approach to energy networks, allowing co-ordinated planning to prevent unnecessary investment. The hub's research addresses the challenges of technology, policy, data, markets and risk for energy networks. WWU has committed to continue providing support and sharing data on similar projects over the course of GD2 at no cost, which is expected benefit to stakeholders across the sector.

In addition to energy savings, the sharing of information, models and support with to organisations in the sector (such as the Supergen Hub project) will provide wider benefits by addressing key challenges and preventing unnecessary investment outside of only WWU's network. This support is assumed to be a benefit to society across the UK.

Summary of CVP

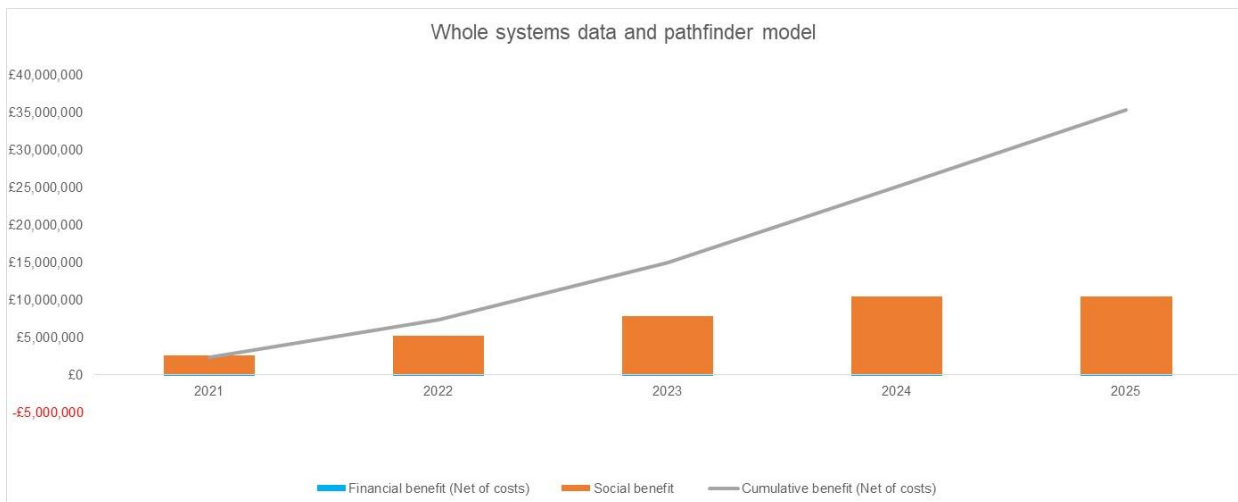
Costs and Benefits over RIIO-GD2

Commitment	Cost	Financial Benefit	Social Benefit	Net Present Value	Net Benefit per £ spent
Whole systems data and pathfinder model	£1,100,000	£0	£36,400,000	£28,197,724	£28.90

Net present value of costs and benefits over RIIO-GD3

Commitment	Net Present Value
Whole systems data and pathfinder model	£11,190,338

Cashflow over RIIO-GD2



Summary of CBA inputs

	Name	Description	Value (£)	Source ¹	Probability	Source for probability
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Costs						
Costs	Cost of WWU experts' time	Cost of WWU experts' time to the company for providing support to data sharing projects	£180,000	Cost based on actual cost of experts' time provided over GD1	n/a	n/a
	Full-time employee to manage Pathfinder	Cost of FTE to manager Pathfinder model	£40,000	WWU estimate	n/a	n/a

Benefits						
Social	Valuation of sharing whole systems data free of charge	Benefit to society as a result of data and support provided by WWU at no cost	£1,400,000	WWU estimate (see detailed summary)	n/a	n/a
	Valuation of sharing Pathfinder model free of charge	Benefit to society as a result of model and support provided by WWU at no cost	£1,200,000	WWU estimate (see detailed summary)	n/a	n/a

¹ Further information on sources is provided in the Cost Benefit Analysis details section

Cost Benefit Analysis details

Costs

	Name	2021	2022	2023	2024	2025
Financial costs	Cost of WWU experts' time	£180,000	£180,000	£180,000	£180,000	£180,000
	Full-time employee to manage Pathfinder	£40,000	£40,000	£40,000	£40,000	£40,000
Costs per annum		£220,000	£220,000	£220,000	£220,000	£220,000

- Over the course of GD1, the cost to WWU of providing support to four data sharing projects was estimated as £90k or £22.5k per project.
- WWU estimates that it will deliver 40 similar data sharing projects over GD2, 8 per year on average. As such, the estimated annual cost for support is £180k (22.5k * 8 projects) over GD2.
- It is assumed that over the course of GD2, 1 FTE from WWU will continue to manage the Pathfinder model. This resource is estimated to cost WWU £40,000 per year.

Benefits

	Name	2021	2022	2023	2024	2025	2026	2027	2028
Social	Valuation of sharing whole systems data free of charge	£1,400,000	£2,800,000	£4,200,000	£5,600,000	£5,600,000	£4,200,000	£2,800,000	£1,400,000
	Valuation of sharing Pathfinder model free of charge	£1,200,000	£2,400,000	£3,600,000	£4,800,000	£4,800,000	£3,600,000	£2,400,000	£1,200,000
Social benefits per annum		£2,600,000	£5,200,000	£7,800,000	£10,400,000	£10,400,000	£7,800,000	£5,200,000	£2,600,000

- Over GD1, the estimated value of shared information, support and modelling provided to the Supergen Hub by WWU was estimated to be £1.9 million² over a four-year period. This is broken down as follows:
 - Data (estimated value of £700k over the lifetime of the hub or £175k per year)
 - WWU has detailed temporal and spacial heat demand data aggregated from residential and commercial properties derived from gas demand data.
 - Geospatial data within our region of the gas supply network.
 - Current diurnal storage data related to gas usage.
 - Industrial demand data.
 - Provision of models (estimated value of £1.2m over the lifetime of the hub or 300k per year)
 - The WWU 2050 Energy Pathfinder Tool – a power, heat and transport integrated energy simulator.
 - Gas network design models (Synergy)
 - An investment model that determines how renewable energy can be supported using the existing gas network.
- WWU estimates that it will deliver 40 similar data sharing projects over GD2, 8 per year on average. It is assumed that 8 of the projects per year will involve data sharing only and 4 projects per year will involve both data sharing and provision of models.
- We have assumed that on average the projects will be delivered over a four-year period and the benefits will be evenly distributed across each year. For data sharing projects this equates to £175k * 8 = £1400k per year and for the data sharing + model provision projects, this equates to £475k * 4 = £1.9 million per year.
- All the projects will be set up over the course of GD2, however, as the benefits are realised over a four-year period, a portion of the benefit will only be realised in the early part of GD3 (e.g. projects starting in 2025 will deliver benefits through 2028).
- We have assumed that the benefit of providing data sharing initiatives at no cost will be to the advantage of wider society and not only WWU customers, as such this has been classified as a social benefit.

² These figures have been provided by Chris Clarke, Director of Asset Management, Safety and Environment at Wales & West Utilities