

Appendix 1

Background to the LPWAN project

The Digital Programme identified a need for investment in LPWAN (Low Power Wide Area Networks) in the Programme Business Case in 2020, initially as an intervention with a rural focus. The project is within the Portfolio which was approved by UK and Welsh Governments in the North Wales Growth Deal. This is a project to deliver digital infrastructure alongside the 4G+ project (mobile networks) and the Advanced Wireless project (wireless technologies such as 5G). The LPWAN project sits within the overall Connected Campuses project alongside Advanced Wireless.

LPWAN is a broad set of technologies which support 'Internet of Things' (IoT) applications and several options are adopted globally to support economic activity across many industries. In the UK LPWAN is increasingly being adopted to serve users who have a requirement for remote monitoring of assets and environments in a cost effective way, which would otherwise be unaffordable. The technology allows greater capacity for the collection and monitoring of data and enables significant improvements in business efficiency and productivity when used appropriately.

In North Wales the main LPWAN technology type being used widely by the public sector is LoRaWAN (Long Range Wide Area Networks), particularly by councils. Some councils have developed a strong familiarity with the technology and the opportunities it presents, others are at an earlier stage of adoption.

Wrexham County Borough Council has invested in LoRaWAN coverage in recent years, trialling various applications, most recently enhancing its flood risk monitoring. Conwy County Borough Council has trialled a broad range of applications including flood risk monitoring, in-building environmental conditions and the remote monitoring of refrigeration, for example. Cyngor Gwynedd has also established the use of LoRaWAN for flood risk monitoring and cites the technology in its corporate Digital Strategy. The social landlord Adra has deployed LoRaWAN sensors extensively across its estate to support the monitoring of conditions in its properties. Denbighshire and Flintshire councils have also adopted the technology and have identified wider applications which can further support service delivery.

In the private sector the use of LPWAN is more difficult to quantify however larger organisations with widely distributed assets, such as utilities companies commonly use forms of LPWAN for remote monitoring of assets and communities of SMEs in the region continue to develop interest in adoption. Welsh Government has sponsored several initiatives in recent years to promote IoT and particularly LoRaWAN, with initiatives including agriculture (through Farming Connect) and town centres (through Smart Towns, delivered by Menter Môn). Welsh Government has also funded councils to deploy LoRaWAN networks across Wales, including in North Wales, establishing coverage around some key areas of interest. In 2025 Ambition North Wales led a Shared property Fund project providing support to 16 farm enterprises

across the region, involving the trialling on the technology to improve farm operations. This project led to positive outcomes identified in different types of farms with many of those participating deciding to continue or enhance the use of LoRaWan further due to the benefits realised in the trials (see for further details [Smart Agriculture IoT Trials - Farmer Profiles - Mentera](#))

The LoRaWAN coverage currently maintained by the councils provides 'open access' to other users, supporting trialling and innovation of use cases in any industry. This is an accessible route for businesses to test and understand how this form of IoT can provide benefits. Access to the network is limited by coverage and providing extended coverage will enable a greater range of potential users to innovate, particularly in rural areas which currently have the least coverage. A relevant and established example of a similar approach taken by the public sector is in Cambridgeshire [LoRa - Connecting Cambridgeshire](#).

LPWAN is used to support and enhance service delivery and in doing so can support productivity and growth. The adoption of the technology requires skills and staffing resources and demand for these develops as demand from users increases. Job creation is therefore to be expected as a consequence of wider adoption, with additional ICT staff, data analysts and maintenance roles. Where the use of LPWAN supports business growth a general expansion of the workforce is expected.