



Llywodraeth Cymru
Welsh Government

www.cymru.gov.uk

Welsh Government Public Sector Support Programmes

APSE event

Jane Forshaw on behalf of Welsh Government

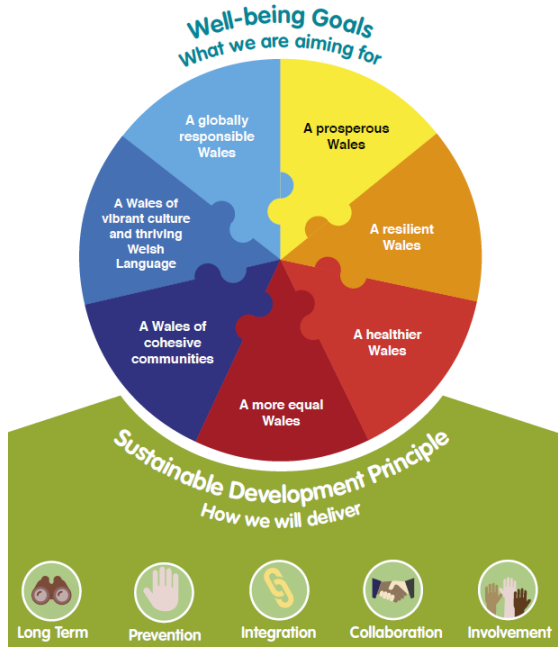
The Legislation Driving our Ambition

The Well-being of Future Generations (Wales) Act 2015

Well-being goals

The Environment (Wales) Act 2016

The Carbon Budgets



↔

New, and complementary legislation



The Environment (Wales) Act, Part 2

There are three main pillars to Part 2 of the Environment (Wales) Act

1. Ambitious GHG reduction targets

At least 80% cuts by 2050

Interim targets for 2020, 2030 and 2040

Report on consumption emissions

2. Binding carbon budgets

5-year budgets

First budget period 2016 – 2020 (Secondary legislation laid by 2018)

Set to deliver cost-effective transition to 2050 goal under WFG framework

3. Clear accountability Framework

Independent Advisory Body providing advice and scrutiny

Policies and proposals report to meet budgets across all Ministers areas

Final budget statements setting out if we have achieved the budget

Respond to the advisory body's report

The Well-being of Future Generations (Wales) Act

Climate change is integral to all of the Well-being Goals with specific reference in terms of:

A prosperous Wales.

An innovative, productive and **low carbon society** which recognises the limits of the global environment and therefore uses resources efficiently and proportionately (**including acting on climate change**); and which develops a skilled and well-educated population in an economy which generates wealth and provides employment opportunities, allowing people to take advantage of the wealth generated through securing decent work.


A Globally Responsible Wales.

A nation which, when doing anything to improve the economic, social, environmental and cultural well-being of Wales, takes account of whether doing such a thing may make a positive contribution to global well-being.

A resilient Wales.

A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity **to adapt to change (for example climate change)**.

Well-being of Future Generations (Wales) Act 2015 (anaw 2) i



Well-being of Future Generations (Wales)
Act 2015
2015 anaw 2

PART 1
INTRODUCTION

1 Overview

PART 2
IMPROVING WELL-BEING

Sustainable development and well-being duty on public bodies

2 Sustainable development
3 Well-being duty on public bodies
4 The well-being goals
5 The sustainable development principle
6 Meaning of "public body"

Well-being objectives

7 Statements about well-being objectives
8 Welsh Ministers' well-being objectives
9 Other public bodies' well-being objectives

Measuring performance towards achieving the goals

10 National indicators and annual well-being report
11 Future trends report
12 Annual reports by the Welsh Ministers
13 Annual reports by other public bodies

Guidance

14 Guidance

The Energy Policy Context

Energy Wales : A Low Carbon Transition

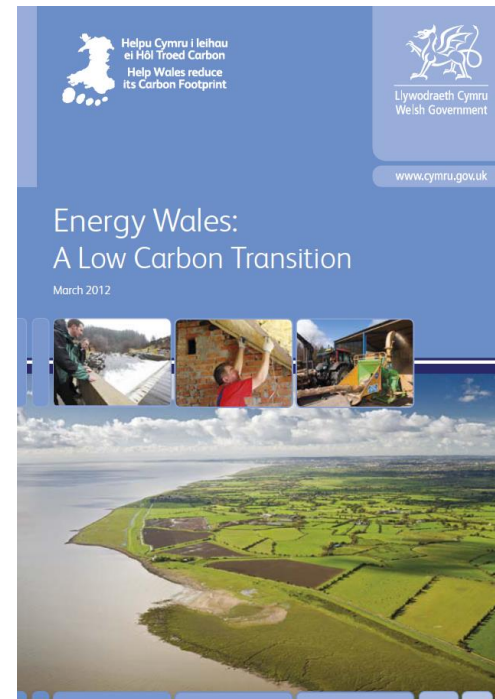
➤ Energy Wales is Welsh Government's (2012) sustainable strategy for our transition to a low carbon economy.

“Energy is a defining issue for our generation and an issue on which, as a Government, I am determined that Wales will lead”.

“As a nation, we are rich in energy resources and this provides a tremendous opportunity to fuel our drive for a fairer and more prosperous Wales and to achieve a better quality of life for our own and future generations”.

First Minister - March 2012

<http://gov.wales/docs/desh/publications/120314energywalesen.pdf>



The Energy Policy Context

Green Growth Wales: Local Energy



Leading on
local generation

Removing
barriers

Supporting
local action

Access
to finance



Local Energy (2015)

“Our vision is to see all communities and businesses using locally generated electricity and heat, from renewable installations, to supply local demand...deliver decent jobs locally in installing and maintaining...”

<http://gov.wales/docs/desh/publications/150713-green-growth-wales-local-energy-en.pdf>

The Opportunity for Energy

Energy efficiency:

- Reducing fuel poverty
- Protecting public services
- Increasing business opportunity and competitiveness

Renewable energy:

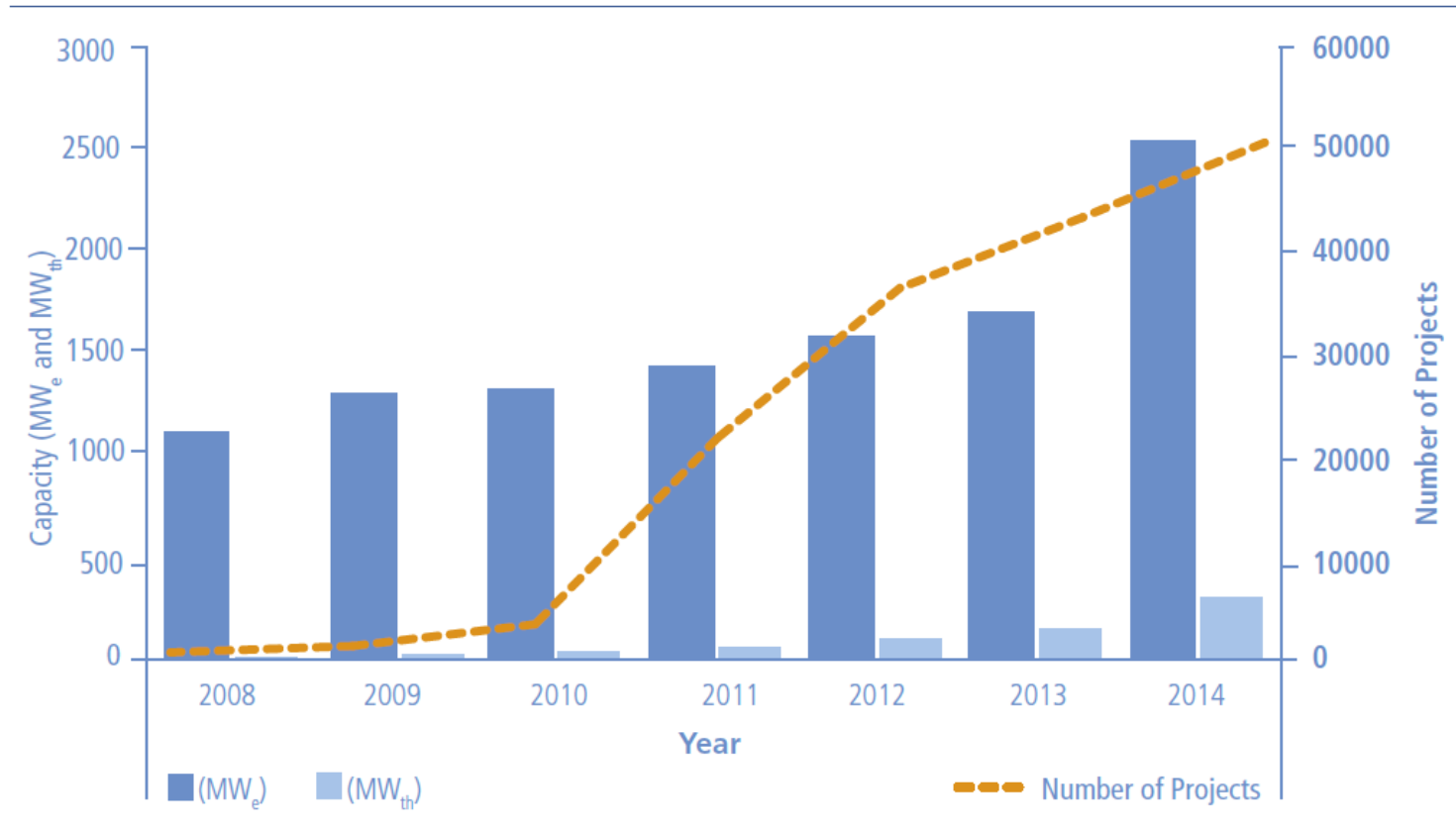
- A greater value from energy for Wales
- Local Authority, community, and business opportunities
- Increased business competitiveness

Innovation

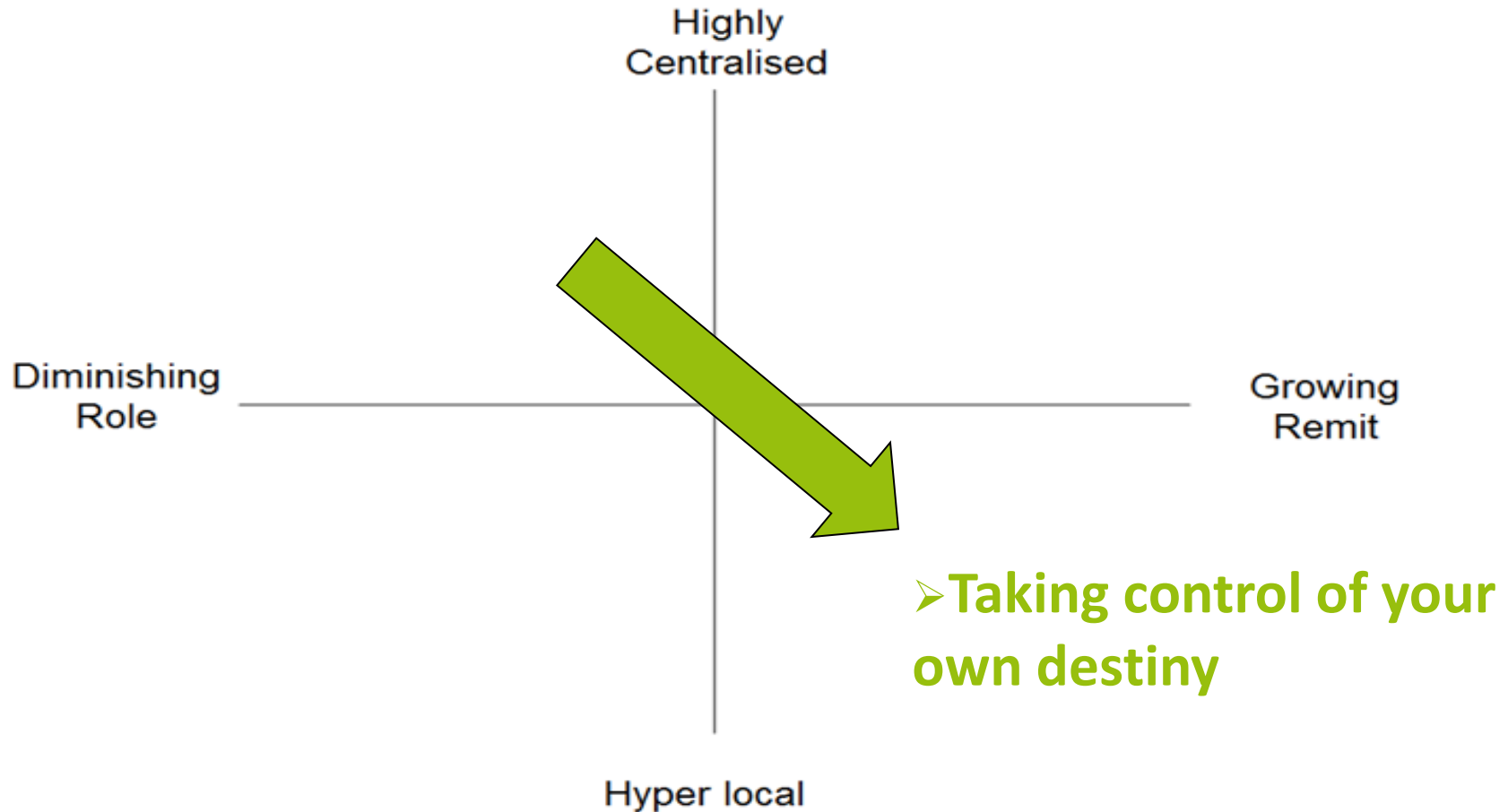
- Adoption of new technology, systems and processes
- Improving efficiency of resources through smart platforms
- Diversifying and merging markets – digital/health/skills/etc

The Energy Policy Context – Increased Opportunity

Figure 1: Growth of low carbon energy in Wales from 2008 to 2014



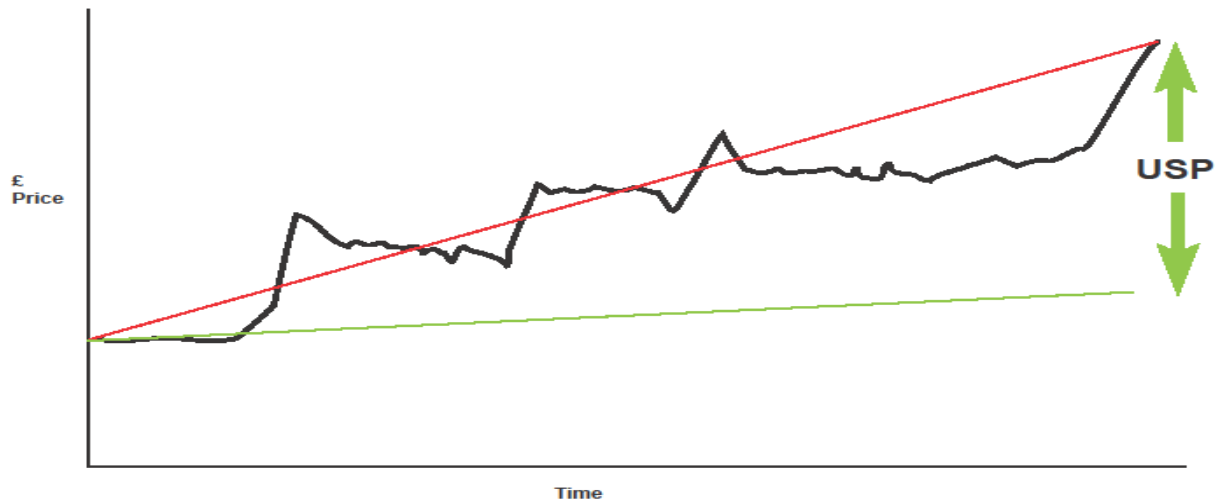
- **FOUR FUTURES FOR LOCAL / REGIONAL GOVERNMENT
(CREDIT JOHN FLOWERS – VEREDUS)**





- **ENERGY SECURITY AS ONE OF OUR REGIONAL USPS ?**

- To what extent do we believe that energy sustainability and energy resilience are key issues for the future success of our economy ?
- If we accept this ambition (some would even call it “responsibility”) then it is both ambitious and challenging and brings with it a number of risks.
- It will require a fundamental rethink of how the region views itself, how it plans and invests for itself and how it sources, uses and reuses its energy.
- *Could the Board of EBIV commit to a low carbon infrastructure ?*



Energy Security

- Energy prices on an ever upward trend
- The UK is vulnerable to shortages of gas and electric
- Energy price volatility and security of supply are becoming key considerations as to where enterprises choose to locate their operations
- UK Power estimate that distribution charges will rise by 15% in the next 4 years

Energy Provision through Employment

Sites

1. Etruria Valley (CBM)

2. Keele University Science & Business Park (mixed energy)

3. City Centre Spine (geothermal, district heating)

4. Fenton (AD, geothermal)

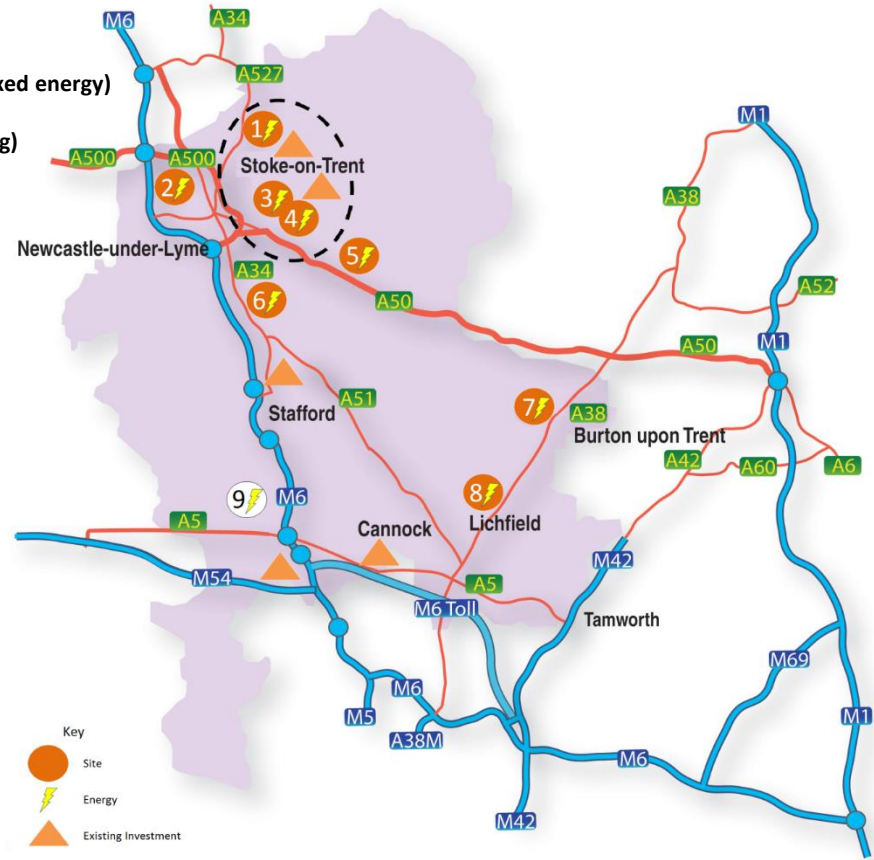
5. Blythe Bridge (CBM)

6. Meaford (gas-fired power station)

7. Branston Locks (AD)

8. Lichfield Park (Biomass)

9. Four Ashes Energy from Waste



Finance	Investment through the City Deal (£m)									
	Private	Local Authority		Central Government				EU	Other	Total
		LA	LA Borrowing	Devolved Skills Funding	Re-aligned Government funding	Capital Allowances	Business Rate Income			
Energy	66.55	0.0	19.0	0.0	25.96	0	0	5	0	116.51
Enterprise & Innovation	17.0	9.1	0.0	0.0	2.50	0	0	7	10	45.6
Sites & Infrastructure	73.5	0.0	79.5	0.0	25.50	25	11.75*	0	19	222.5
Skills	9.5	39.0**	0.0	48.9**	3.00	0	0	0	0	100.4
Total	166.55	48.1	98.5	48.9	56.96	25	0	12	29	485.01

Impact

*As this is income it is not included in the overall investment totals

**Skills investment is total over 10 years

Total City Deal investment of £485.01m will generate GVA uplift of £3.55 billion by 2032 – Stoke-on-Trent and Staffordshire will be in the top 20 areas of growth. It will create 28,000 jobs by 2032 – without the Deal, our modelling shows a baseline growth of only 8,000 jobs by 2032. In addition, modelling work demonstrates that Powerhouse Central would unlock a further 29,000 jobs created through the value chain (through indirect and induced jobs).

Energy

- Energy security to businesses and residents and integrated energy networks
- LA investment of £19m will leverage £49.6m initial private sector spend
- Acceleration of eight key sites and to Four Ashes Energy from Waste Plant
- Create and safeguard a total of over 12,000 jobs
- Green Deal project proving delivery at scale-covering 2,000 houses

Enterprise & Innovation

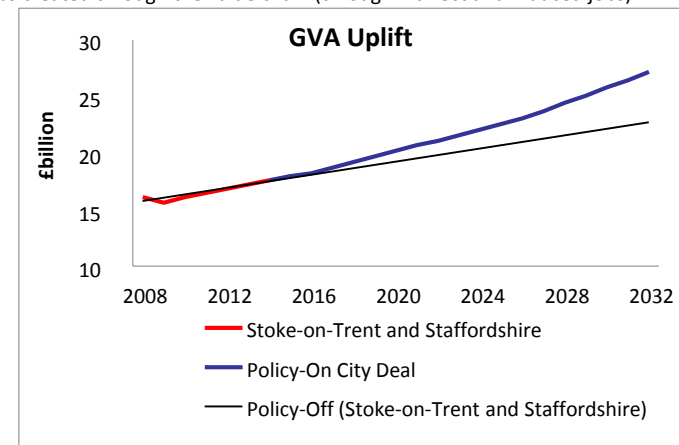
- 1,200 additional high value jobs
- 50% improvement in take-up of national programmes
- 15 new high-growth start-ups per annum

Sites & Infrastructure

- Over £2bn private sector investment attracted
- 100% business rate retention for 25 years, (of which government share is £11.75m), leading to a total of £261.5m

Skills

- 5,100 apprenticeships and 1,400 traineeships
- Level 2 NVQ attainment increased by 2,000; Level 3 increased by 1,850 and Level 4+ by 1,600



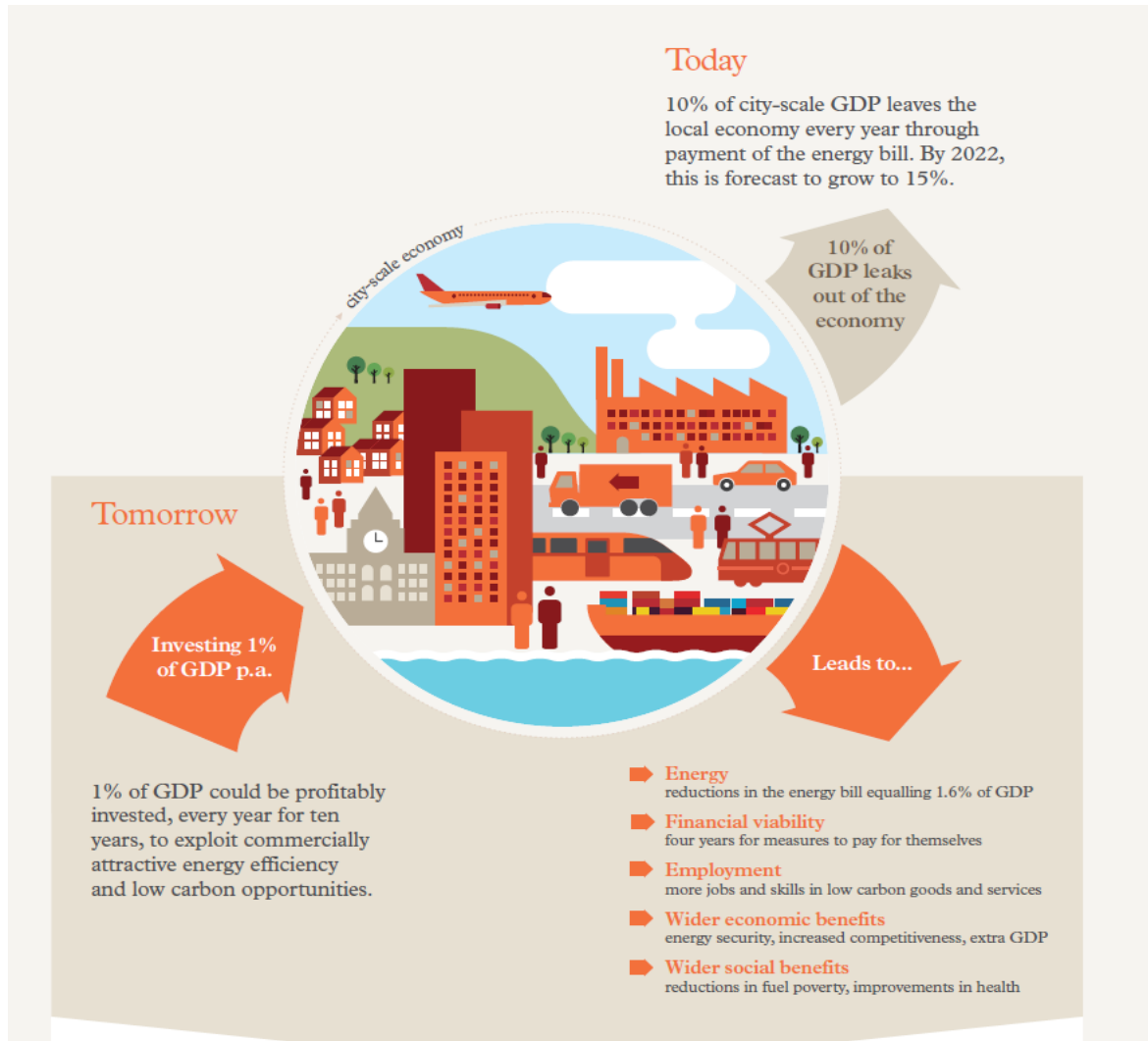


- **TAKING CONTROL OF YOUR OWN ENERGY.....**

- Peterborough - creation of a joint venture company to create an investment fund will initially raise £130m to take forward energy schemes.
- Nottingham – Robin Hood Energy
- Bristol - Energy Supply Company
- Manchester – as part of the northern power house
- Many examples across Europe....

-looking at Tidal Lagoon Power.....
-looking at a Welsh energy supply company.....

- ENERGY ...NOTE THE GDP LEAKAGE “TODAY”



Source: The Economics of Low Carbon Cities – A Mini-Stern Review (2013)

- **INNOVATIVE HOUSING GRANT**

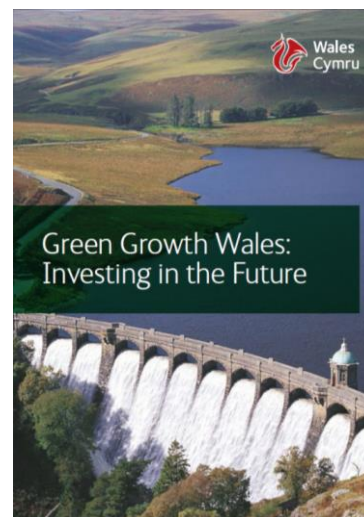
- £20m for 1,000 homes
- Low carbon, adaptable, welsh labour, welsh products
- System build, any tenure, repeatable, mortgagable
- Innovation within the Ebbw Vale existing infrastructure ?

Collaboration and Support

Green Growth Wales

A suite of interventions to increase and accelerate green investment in Wales to:

- create saving/income over the longer term for Welsh organisations;
- create economic benefit;
- reduce carbon emissions;
- cover its own costs.



Collaboration and Support

Technical Support

- Carbon Trust led, working with WRAP Cymru.
- Resource Efficient Wales framework of specialist technical services providing subsidised support

Commercial Support

- Local Partnerships (LP) provide this service, which is free to participating organisations.
- Purpose of work – to grow, accelerate and de-risk the Green Growth project pipeline in Wales.
- Includes common barrier removal / strategic opportunity identification
- Commercial, project management, procurement and contract management expertise.

Collaboration and Support



- Delivering Energy Performance Contracts (EPC)
- Allows public bodies to make substantial cost savings, reduce energy bills & the carbon footprint of their buildings
- Led by GEP Environmental.
- Additional technical support provided by a consortia led by Carbon Trust.



Co-funded by the Intelligent Energy Europe Programme of the European Union

Collaboration and Support



- EU funding for heavily discounted support package
- Framework of Service Providers
- Guaranteed savings (kWh)
- Fast and efficient tendering - OJEU compliant
- Helping participants deliver '*spend to save type schemes*' through holistic retrofits

Within the UK Re:fit programme, project values range from £1 – 15m, ranging from 10% to 35% in energy savings



Co-funded by the Intelligent Energy Europe Programme of the European Union

Collaboration and Support

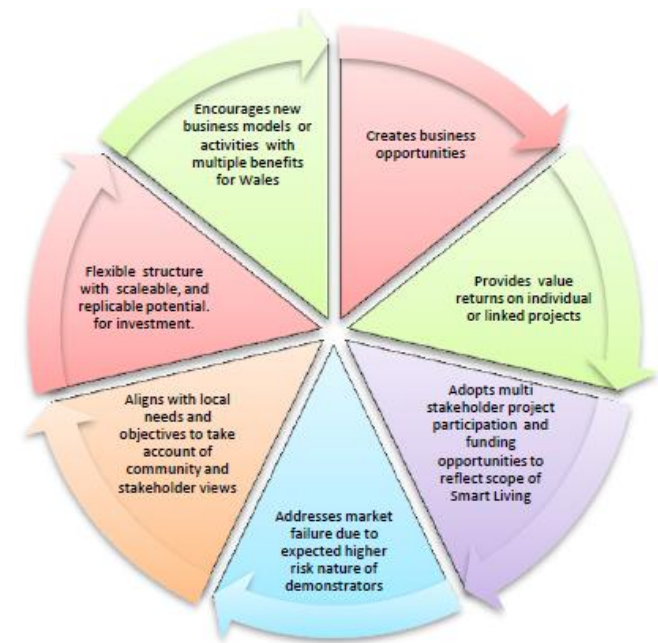
Financial Support

- Two major forms of repayable finance:
 - Invest 2 Save - Green Growth
 - Salix
- Unified Terms and Conditions
- Flexibility in terms to enable early revenue benefits
- Single Application Form
- An open call for projects

Collaboration and Support

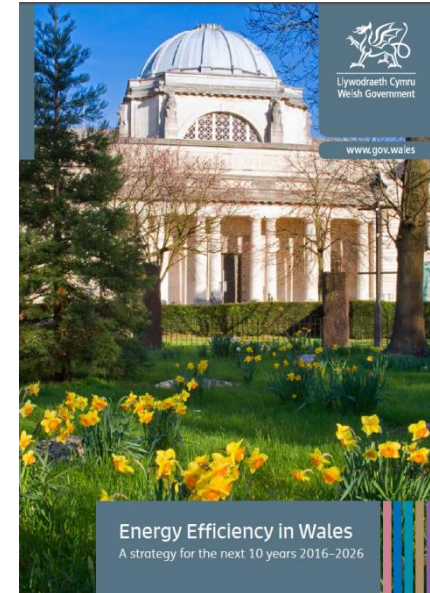
Smart Living

- Addressing energy project challenges and opportunities through innovation and collaboration.
- A first wave of seven projects
 - Blaenau Gwent Energy Catalyst
 - Flintshire Sleaving
 - Angle DC – SPEN
 - Hydrogen Balancing – WPD
 - West Wales Zero Carbon Zones
 - Bridgend ETI Smart Systems and Heat
 - Non-traditional business models - Ofgem
- A Technical Group established to identify partners and solutions.



Further Public Sector Support Required

- We want all in Wales to benefit from the opportunities emerging from energy projects.
- Ongoing collaboration required in developing and delivering our future domestic energy efficiency programmes.
- Crucial to drive local economic benefit through procurement approaches.



Further Public Sector Support Required

- Support for community and SME energy schemes vital to drive wider social and economic benefits.
- The Welsh Government's Local Energy Service provides support to social enterprises and SMEs across Wales to develop their own renewable energy schemes. The service includes:
 - Renewable Energy Toolkit
 - Support and Advice through local development officers
 - A range of grants or loans
- Developing these schemes is difficult, we need the public sector as a whole to be supporting and clearing the path.



Thank you for listening

Contact me for more information

Jane Forshaw

Project Director : Local Partnerships

Green Growth Wales

Jane.Forshaw@local.gov.uk

07974 366232



Reducing Carbon Emissions in Flintshire

Sadie Smith

What are we working towards?

- » **A 60% reduction in carbon emissions from energy consumption by 2021**
- » **Development of large scale renewable energy systems on Council owned land and other assets**
- » **Reducing energy spend and CRC expenditure**
- » **Reducing fuel poverty by improving the energy efficiency of Council and private sector housing**

What have we achieved so far?

- » **20% reduction in carbon emissions from non domestic buildings**

- » **This has been achieved through:**
 - **Programme of lighting upgrades**
 - **Building fabric improvements**
 - **Installing and upgrading heating controls**
 - **Kitchen ventilation controls**
 - **Installation of renewable energy systems**



Large scale renewables

- » **Renewable Energy Action Plan:**
 - **10 year plan**
 - **Aim: Enable the development of renewable energy systems across the County using Council owned land and assets**
 - **3 key phases**
 - **All renewable energy technologies included**
 - **Progress reported annually to Environment Scrutiny Committee**



Flintshire Ground Mounted Solar

- » **370 kWp and 650 kWp solar farms built on 2 former landfills in Buckley with existing landfill gas generation**
- » **Procured using the APSE/Northumberland County Council solar PV framework**
- » **Build commenced on 22nd August 2016 and both were commissioned on 1st October**
- » **Private wire connections to Council owned buildings**



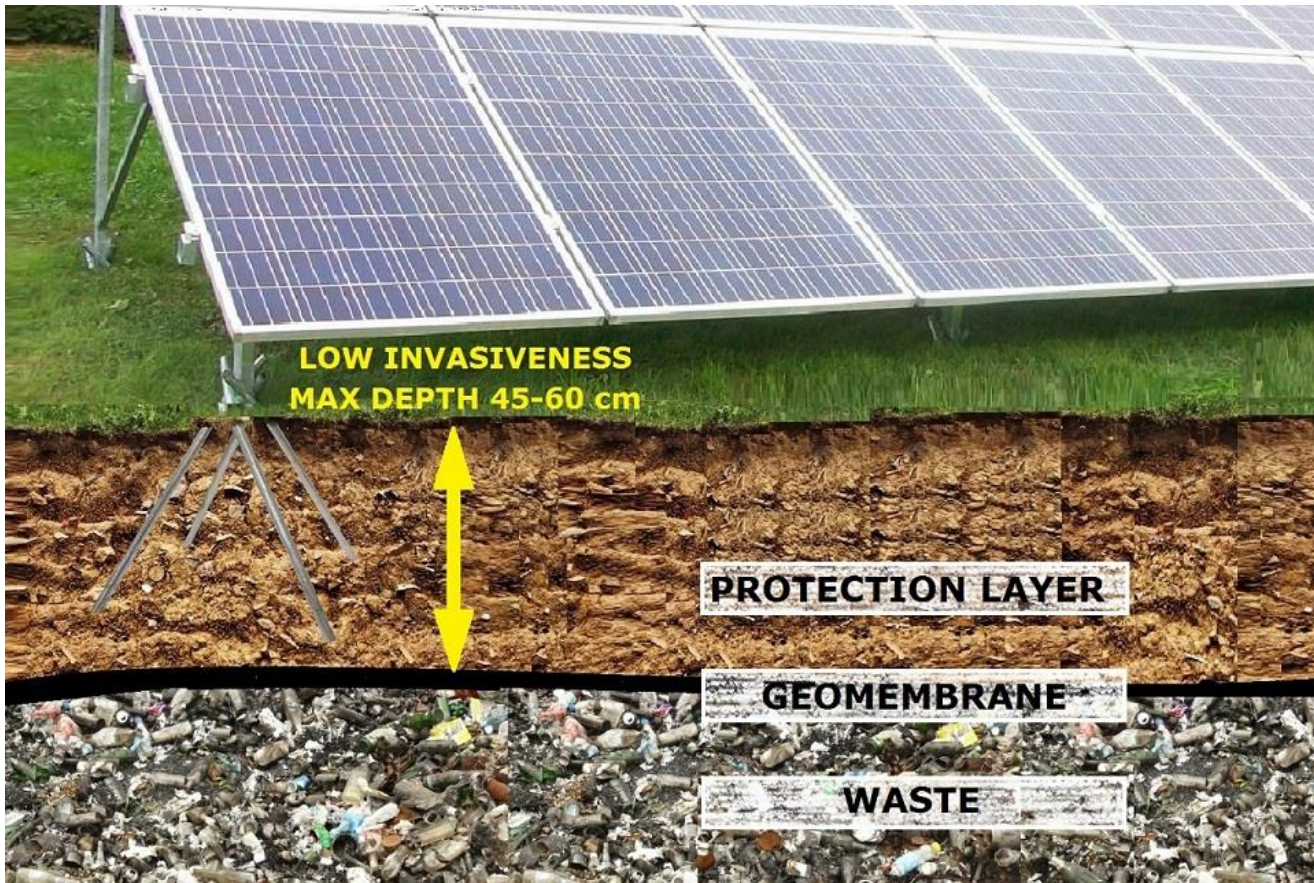


Key Challenges

- » **Topography and existing site infrastructure**
- » **Changing UK Government legislation**
- » **Contract negotiations**
- » **Maintaining public access**
- » **Existing ROCs and power purchase agreements and associated metering requirements**



Tree Root Anchoring System



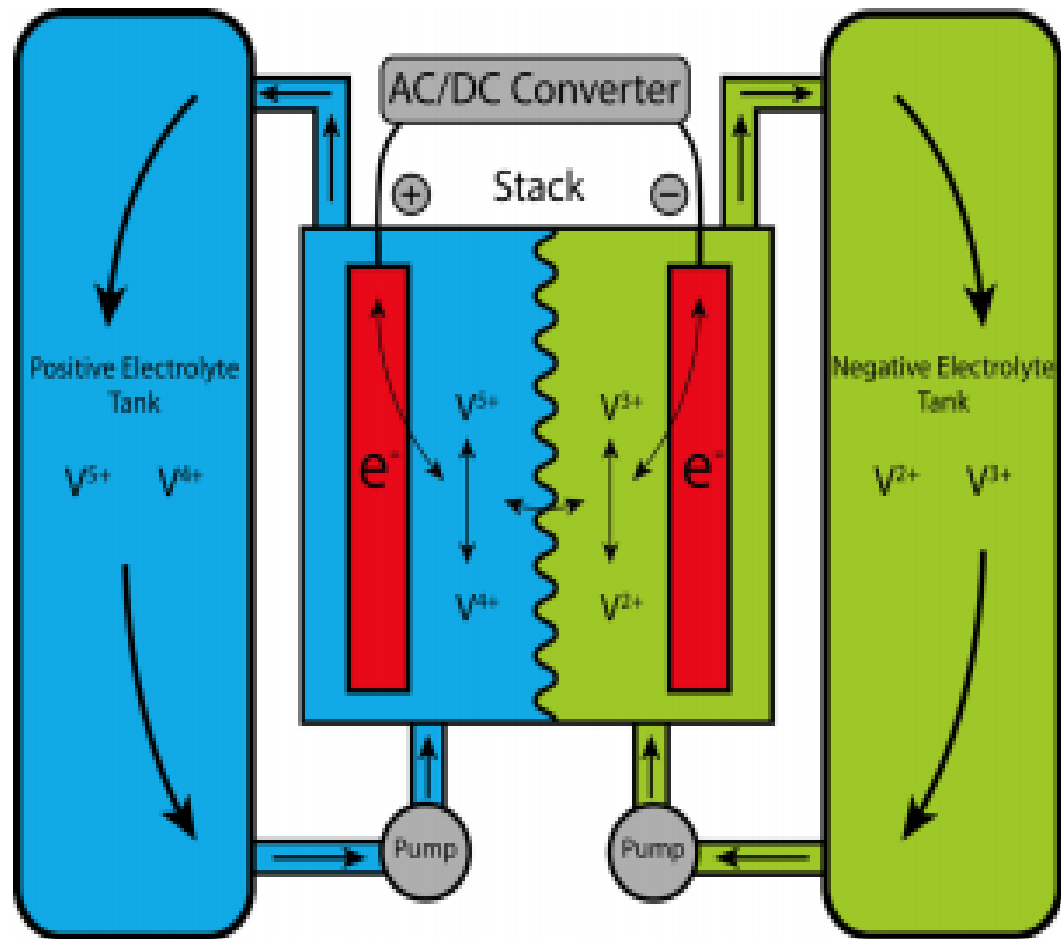
Battery storage at Ysgol Abermorddu

- **Aim of project: trial technology to determine potential carbon and financial savings**
- **Existing 25 kWp solar PV array- majority of this generation is exported to the grid**
- **Flow battery specified with a capacity of 20kWh**
- **Tenders returned, with works due to commence in the summer holidays**
- **Remote monitoring**



Liquid vanadium flow battery

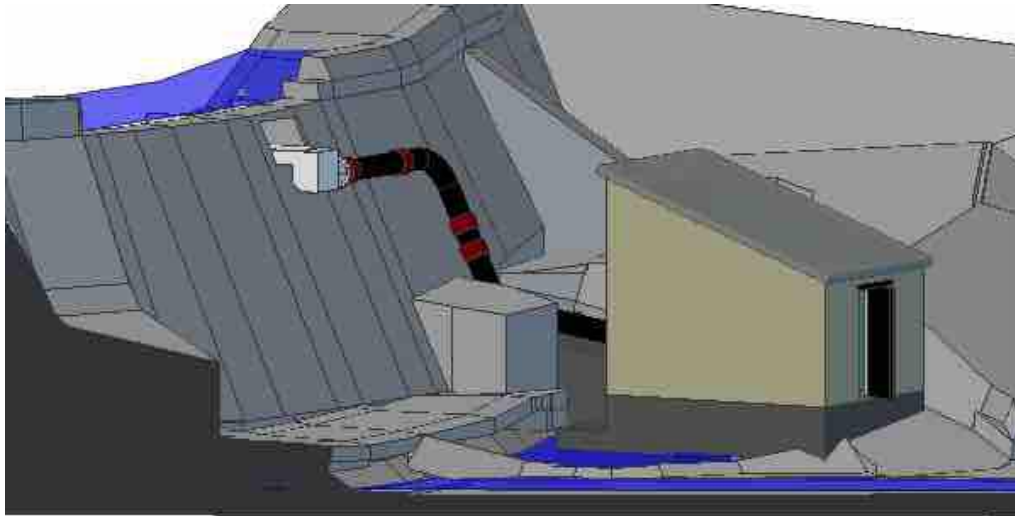






Wepre Park Hydro

- » **Installation of a 5.5 kW turbine and generator on Wepre Brook to provide power for the visitors centre.**
- » **Detailed design completed for crossflow turbine**
- » **Annual predicted generation between 16,000-19,000 kWh**
- » **Installation will be feed in tariff compliant**



So what next?

- » **Assessing feasibility and potential income generation from further solar/wind farm sites on Council owned land (brownfield and agricultural)**
- » **Battery storage feasibility study at current solar and landfill gas generation sites**
- » **Conversion of all street lighting to LED**
- » **Virtual private network pilot**
- » **Battery-solar PV-ASHP trial in 30 Council houses (off gas areas)**



Thank you! Any questions?
