

TYF EcoSapiens

Natural Intelligence for Business

2030 Vision

**strategy and insights for
the next Industrial Revolution**

Hay on Earth
27-30 May 2008 at

theguardian
HAY FESTIVAL HAY-ON-WYE

Report and Notes – draft v1 12/06/08

TYF Hay on Earth

Introduction

Civilisation is at a crossroads with a choice to make about its own future. Dramatic changes need to be made in the way that business and government manage carbon, energy, soil, oil water and population. Despite the incredible seriousness of the situation, there is no plan or vision that's clear enough to produce the solutions that are needed.

To start answering this need, TYF Ecosapiens ran Hay on Earth as a four day think tank at the Hay Literary Festival, with the intention of exploring, developing and inspiring the level of change that is needed to firmly place Wales on a conscious journey towards sustainability to protect the environment, for its own sake, and ours. The current commitment to reduce Wales' Ecological Footprint and carbon intensity, though near the front of the field in global terms, are insufficient to avoid dangerous climate change and serious degradation of the living systems on which civilisation itself depends.

Hay on Earth created the space and opportunity for thought, reflection and a call to action that now needs to happen, and catalysed a feasible route for change

This report highlights recommendations from the event, priorities from each of the four workshops, and appendices listing all comments and suggestions generated over the four days. A rapid acceleration of action must be initiated, with the development of a detailed plan that encapsulates the 'how' and 'what' the people of Wales can do to take a lead in the next industrial revolution. Many of the ideas that are needed to do this are featured in this report, developed by the people who can make change happen.

Recommendations

Based on interpretation of the contributions from over 100 leaders in Wales over 4 days of discussion, and 20 years of change leadership, TYF Ecosapiens' recommendations are that in addition to continuing with effective plans that are already in motion, that:

- 1. Political, business and community leaders acknowledge that not enough has been done so far, and that a dramatic acceleration of action is required urgently. Adopted world-wide over the next decade, the actions described in 2030 Vision are sufficient to prevent the worst impacts of climate change and give a strong chance of restricting global warming to 2°C.**
- 2. With lead from WAG ministers, Wales develops the world's most ambitious plan for One Wales, One Planet living, and moves from the current WAG commitment of a 3% annual reduction on CO2 emissions (in areas of devolved competence) from 2011, to targets in line with the 9% per annum reduction recommended by the Tyndall Centre for Climate Change Research.**
- 3. The remainder of this parliament in Wales is used as the planning period, giving Ministers the space for vision without the need to provide all of the answers on 'how are we going to do that'**
- 4. Every county, community, business, school, college, and public sector organisation work collaboratively throughout the planning process with Government to bring the vision and achievable solutions to life**
- 5. The implementation of 2030 Vision is launched on St Davids Day, March 1st 2012, backed by a thorough, tested plan, with full cross-party support.**

TYF Hay on Earth

Backstory

The Hay Literary Festival has been attracting thinkers, writers and learning folk to the Welsh Borders for 21 years, providing a crucible for reflection, thought and action; in 2008 the Hay Festival sold in excess of 140,000 tickets to hundreds of talks, events and concerts. TYF EcoSapiens is a climate change and sustainable change, part of the St.Davids-based TYF Group; pushing the boundaries of education, learning and action to translate common sense into common practice through work, thought and play is in TYF's lifeblood.

High quality gatherings are potent places to generate ideas and Hay 2007 was the start of discussions that led TYF's Andy Middleton and the Hay Festival's Andy Fryers to develop the event that became TYF Hay on Earth - four days of masterclass workshops for an invited group of thinkers and doers drawn from business, government and the third sector. TYF Hay on Earth was created to bring together a hundred people who know what change is needed to stabilise our climate, environment and civilisation, and have the courage, confidence and imagination needed to make it happen.

That TYF Hay on Earth is run at a festival in the world's best known 'book town' is apposite, as the content of the conversations that took place – off beat at times, yet informed, open and often visionary.

Topical speakers were booked to compliment the themes of the four workshops:

1. **2030 Vision** – imagining a vision for life in Powys in an 80% reduced carbon, post peak oil society. Speakers: Andrew Simms (new economics foundation), John Bird (Big Issue), Tom Hodgkinson (The Idler)
2. **Fit for the Future** – building the business response and contribution to the changes that are needed, sharing knowledge and needs Speakers Mike Barry (Marks & Spencer), Ben Stimson (Sky)
3. **Learning from Tomorrow** – re-imagining education as though we wanted to achieve the goals that have been brought to life in days 1 & 2. Speaker: Alan Weisman
4. **Making Change Happen** – bringing together the knowledge, passion and conviction to generate a route map for action. Speakers: Jane Davidson (Welsh Assembly Minister for Environment, Sustainability & Housing), John Gormley, Irish Minister for the Environment, Heritage & Local Government

What happened?

Over the course of four days, 108 people participated in four workshops and 28 hours of discussions, talks, reflection and group work. The mix of senior people attending from different organisations brought with it a level of knowledge, perspective and contact that proved invaluable and all too rare. Comparing notes between sectors and organisations at different stages of change in relation to carbon and resources stimulated ideas an opportunity, as well as much learning.

TYF Hay on Earth

Approximately 25 participants attended each of the four workshops, with four or five returning from one day to the next to provide context and continuity. The format of the event, allowing a maximum of time for conversation and dialogue whilst providing a minimum essential level of background information for context, created a powerful environment for learning and 'letting go' of old ideas.

Anne Meikle and Morgan Parry from WWF Cymru helped set the Welsh context in relation to global changes with an update of One Planet Living and recommendations from the Tyndall Centre for Climate Research.

Three Welsh Assembly Ministers attended all or part of the first three days of workshops:

- *Jane Davidson*, Minister for Environment Sustainability and Housing opened the TYF Hay on Earth workshops with an announcement and update on Wales's ecological footprint.
- *Rhodri Glyn Thomas*, Minister for Heritage participated during the afternoon of the 2030 Vision workshop
- *Ieuan Wyn Jones*, Deputy First Minister and Minister for Economy & Transport participated during the Fit for the Future business workshop

During the first two workshops Steve Bather from Realise helped participants through his provision of 'real tools' electronic facilitation, which enabled the rapid and accurate capture of a wide range of ideas that were presented back to the groups on the following days. For the third and fourth workshop, focusing on education, a combination of Open Space style group work was used to generate information and recommendations for action.

Quick Links

Priorities

[Summary of Recommendations](#)

[2030 Vision](#) (Tuesday 27 May)

[Fit for the Future](#) (Wednesday 28 May)

[Learning from Tomorrow](#) (Thursday 29 May)

[Making Change Happen](#) (Friday 30 May)

Appendices

[2030 Notes](#)

[Fit for the Future](#)

[Learning from Tomorrow](#)

[Making Change Happen](#)

[Feedback](#)

[Resources](#)

[Participants](#)

TYF Hay on Earth

2030 Vision

Priorities for Powys

[Home](#)

Introduction

The goal of the 2030 Vision workshop was to 'make real the changes that communities would be experiencing in a generation's time, painting an upside picture of what a rural county might look like. TYF EcoSapiens, Mark Kerr, Chief Executive of Powys County Council and Jane Davidson, Minister for Environment, Sustainability and Housing, invited participants from business and government to help them on the journey of exploration. The priorities listed below were generated and ranked for impact / ease by participants.

Priorities

1. At a local authority level, pilot tradable carbon credits are allocated on a per person or per household basis, with SMART metering - pilot through linking local tax system to carbon credit or debit, and /or pilot through e-bay type carbon tradable mechanism - testing different systems – with a possibility of trading credits between county councils
2. Ensure a common understanding of sustainable development principles in relation to the local area. Bring public private and third sector leaders together to agree outcomes and monitoring targets to measure success.
3. Flexible support for sustainable land management encourages local food production and distribution. Initiatives are developed that encourage carbon capture, renewable energy schemes and sustainable construction.
4. Local sustainability champions are trained for every local community to educate others
5. Every child is developed as a sustainability champion
6. Flagship communities are initiated quickly to demonstrate positive zero carbon community and provide educational models
7. Energy efficiency certificates are adopted by householders.
8. Incentives and penalties for energy improvement are introduced
9. Aspirational car-share schemes are run, using locally-generated fuels.
10. A programme is developed for Powys that includes moving people to food with a lesser carbon impact (noting that this is still not a carbon neutral food). Farmers are encouraged to produce fuel for local consumption.
11. The supermarkets increase localisation of supply and promote aspirational living linked to low carbon and seasonal availability.
12. Pump priming is in place for new projects
13. Politically, new members and existing politicians buy in to the vision in a stewardship role.

TYF Hay on Earth

14. Allotments are provided by right / statute to all who want them
15. All key areas for Powys to achieve a sustainable economy are examined e.g. land use, working from home, community retirement centres.
16. Necessary skill sets are identified and educated through LEAs, FEs and workplaces.
17. The infrastructure is developed to market and attract to enable achievement of set targets by 2030.
18. Rural skills are embedded in the economy through appropriate grants, council tax rebates etc focussed on the quality of the solution rather than the crude outputs
19. Public sector procurement policies are used to deliver a targeted improvement in Powys' ecological footprint, linking capital and maintenance budgets - whole life costing
20. A food security strategy is developed that demonstrates how Powys can feed its people in a time of great upheaval
21. A balance is achieved between required employment responsibilities and life-style choices, wherever possible, enabling individuals to provide paid, employed solutions to organisational needs (e.g. bin collecting/teaching) in formats which work for them.
22. Conditions and opportunities are created in which people would choose to stay actively engaged in the work place/community sector post retirement age
23. Economic growth that recognises finite environmental limits whilst improving social capital is a primary pursuit.

TYF Hay on Earth

Fit for the Future Priorities for Business

[Home](#)

Introduction

The goal of 'Fit for the Future' was to take leaders from business and support agencies forward to a future where low carbon, post peak oil business had been achieved, and then consider the changes that made the journey successful. Participants included sustainability heads from BAE Systems, BT, M&S & Sky. Deputy First Minister and Minister for Economy & Transport Ieuan Wyn Jones, participated with colleagues during the main workshop. The following list was prioritised for ease / impact by the group using Real Tools.

Priorities

1. Anaerobic digesters are introduced by 2015 getting rid of all bio waste.
2. Nappy recycling techniques from Australia are introduced as soon as possible.
3. High temp gasification of residual waste is introduced as soon as possible.
4. There is a huge change in government policy
5. Non compliance on sorting your rubbish is turned into a big crime - see Plymouth example.
6. Large organisations with brand and expertise partner with local companies and local authority. Companies are part of local solutions. Changes are made to the taxation
7. Moved to service economy where rental / lease are the norm and technology is be refurbished and upgraded rather than disposed of.
8. Leading local businesses set up collaborative entities to drive environmental, social and economic sustainability of businesses through shared use of resources. This leads to resource centric regions.
9. Robust sustainability appraisals are in place for all businesses receiving any EU, WAG or LA grant funding.
10. A standard resource efficiency measure for carbon is introduced for all products and services linked to government support.
11. Local businesses support school training to create interest and skills relating directly to local needs.
12. Systems thinking and ecology are integrated into the national curriculum
13. Two-way mentoring between education and business is introduced to support social and environmental breakthroughs.
14. Funds are made available (from government or large corporations) to fund innovation and entrepreneurs using measures not exclusively profit based - open source the IP.

TYF Hay on Earth

15. Champions [for] innovation are identified, with a mechanism to communicate successful models and franchise ideas.
16. An Open Source innovation system (not IP restricted) is developed for technology, aligning large and small corporations' engagement of solutions
17. Existing frameworks of leadership and promotion are identified, and sustainability is integrated into these (i.e. employee performance appraisal and bonus schemes/ project evaluations/ investment decisions)
18. Incentives for staff to cycle to work are introduced (from business & and government policy)
19. There is mandatory carbon counting for companies, including employee commuting
20. A virtual brokering system of real and virtual transport is developed; e.g. Dongtan / City of York replication model for Cardiff /Swansea and major settlements plus rural hubs for rural counties.
21. Congestion charges are introduced on empty van movements and cars, with revenue used to subsidise public transport / cycle paths
22. Local car taxes pay for local public transport improvements/ virtual technology
23. Low carbon enterprise hubs are introduced as exemplars in low carbon sustainable living.
24. Business benefits and profit opportunities already arising from Best Practice are quantified and rolled out to SMEs who are/ are not part of the larger companies supply chain so that there is an accelerated understanding that if SMEs don't do similar- they'll not remain profitable nor in business
25. Government establishes a commercial loans template (set sustainable criteria). Loans are subvented by government to ensure businesses achieve low carbon and sustainable status
26. Consumption is shaped through VAT relief
27. Carbon rationing is introduced for individuals along with carbon pricing for high impact products and services
28. Carbon ratings for products and services are standardised

TYF Hay on Earth

Learning from the Future Priorities for Education

[Home](#)

[Appendix](#)

Introduction

The goal of 'Learning for the Future' was to build a picture of what education would look like if it was truly designed to maximise the chance of achieving a sustainable future. 25 Professors, College Principals, business consultants, support agency managers, innovators and creative thinkers collaborated to build a picture of the future. The actions listed below are *not* prioritised for ease / impact

Priorities

1. Ecological literacy and cognitive awareness are an educational staple
1. Awareness of US & UK influence over rest of the world is increased with Hollywood / BBC / AI Truth / viral messaging / gaming used to increase speed of spread
2. Edutainment takes learning outside the 9-3 day
3. Education becomes 'fit for purpose', clearly linking required outcomes with taught content.
4. Team building skills teach interdependence
5. Individuals are given increased respect and responsibility for their learning
6. A big historical launch event is used for the start of the downward curve of the graph
7. Mentoring– WWF / NGO / multinational with ability is used to share skills and knowledge with others in schools etc
8. Eco Schools has moved beyond being a 'box ticking exercise' and feels 'real' for both students and teachers.
9. A global passport for skills 2030 Resource Management is develop using the ECDL model
10. Whole community learning is based on issues that relate to them – adjusted to work at a local level and encourage cohesion; bringing community into our schools
11. Global Citizenship is used as a route to achieving whole community learning
12. Population discussion is added to PSE / sex education
13. Practical examples of places that are walking the talk are used - getting out of the silo
14. WAG's Education for Sustainable Development and Global Citizenship (ESDGC) is rolled out to adults

TYF Hay on Earth

15. Education is contextualised so that it relates to where we are trying to get to
16. Communities have Moved beyond twinning to buddying – act locally and help globally
17. We have woken up to the environments in which people learn and introduce ecology as a core subject, connecting students to their environment – not just putting them into a woodland but also recycling facility
18. The good work of ESDGC at primary that is emerging in secondary is translated into a 'how to' at HE and FE
19. FE educational content is transformed – establishments are promoting the development and application of appropriate training of the trades – oil=CO2 saved
20. In HE, systems thinking is intrinsic to all teaching, as an approach to problem solving
21. Education makes direct links between materialism and its consequences
22. WAG officials to learn about their own expertise and further outside; remembering the importance of bottom-up learning through their children and employees
23. Schools in the community are living examples of what is needed
24. Government is much smarter about the use of funding to drive change – recognising that it's essential to make things work
25. Teach-ins are used as a catalyst event with institutions that are not up to speed; have an internet broadcast with schools / across campus – David King / Stern / specialists for disciplines on how education needs to respond
26. Skilling up for Power Down transition is used as a 10 module course to teach the practicalities of using less energy
27. Probability is taught as a way of interpreting both behavioural choices and scientific data

TYF Hay on Earth

Making Change Happen

[Index](#)

Introduction

The goal of 'Making Change Happen' was to bring together learning and outcomes from the first three days of workshops into a meta list of action points and priorities to be used as a basis for recommendations for Ministers and leaders in business and government. Representatives from the 2030 Vision, Fit for the Future and Learning from Tomorrow workshops were joined by a dozen others for this final Hay on Earth workshops. Their comments, thoughts and priorities are listed below.

Much of what we discussed highlighted and focussed on the need for higher value debate and engagement of stakeholders plus more detailed information on facts and figures before an Action Plan for St David's Day 2012 can be prepared – so many of the actions detailed below are essential 'pre-steps' to 2012.

1st Priority: Establish a Strong Business Case.

Quantify risks to the Business as Usual scenarios and establish what these risks actually mean in real generic terms for every sector of the Welsh economy / community to help bring it home to people who aren't up with SD plus all the people involved in these sectors.

Key Sectors Include:

- Waste
- Transport
- Energy
- Economic Development and business
- Education
- Agriculture & Land Management
- Communities
- Public sectors
- Finance
- Construction

2nd Priority: Establish a clear vision based on:

Business as usual – and what it will be like actually living in Wales if we carry on as we are at present – in terms of fuel / food / water / disease / heat / flooding / early deaths (children being buried by parents) / etc

As it could be – the ideal scenario. Paint a compelling picture; less travel; more time; human scale; different living styles; healthier; cleaner; less money spent on energy and housing enabling the same level of disposable income but with lower salaries; community; local sourcing; still with travel but cleaner and less frequent; video conferencing; virtual workforce; etc

TYF Hay on Earth

Change Management

WAG needs to use basic change management theories NOW to start the process: (so does UK government). Basic principles need to be applied, e.g. Beckhard & Harris' change model.

Dissatisfaction with Current situation = D

Inspiring Vision for the Future = V

First Steps to make the Change Happen = F

Resistance to Change = R

And in order to achieve change: **D x V x F >> R**, where:

Dissatisfaction – arising from e.g. fuel poverty; fuel costs and riots; food shortages ; asthma from pollution; increasing waste charges; Naples with rubbish in the streets plus PR based on Business as usual vision – with images of just how bad it's going to get etc. Note the role for e.g. fuel taxes to help create and maintain this dissatisfaction.

Vision - needs to be compelling and attractive / inspirational - something to draw us towards. E.g. Kotter (1995) Creating a Successful Vision model – with key elements being:

- Imaginative – a picture of future possibilities
- Desirable - appealing to long term interests of all stakeholders e.g. more choice in how income is spent because less is tied up in housing/ energy / transport costs plus more time due to less travelling etc.
- Feasible - realistic and attainable goals – illustrate what *can* be done
- Focussed - sufficient clarity to guide decision making
- Flexible - scope for initiative / adaptation / enterprise / local solutions
- Communicable - desirable vision for each sector – plus an overall desirable vision for Wales each of which is explainable in plain language in 5 minutes.

First Steps to making the Change Happen - e.g. outlining how the public sector will help each sector in the transformation needed. What the first steps will be (the action plan) with clear targets / timings and lead partners identified. Evidence (international and UK best practice) of feasibility of these first steps – it exists!

Resistance to Change Because 'R' is currently greater than D x V x F we're not getting the public on side and there's strong resistance to change. Need to recognise that this will remain the case until this entire Climate Change agenda is treated like a basic change management exercise. Need WAG co-ordination to lead the change management exercise with strong BITC and public sector leadership and a PR campaign as well.

TYF Hay on Earth

POLICY

The existing Plan Rationalisation Programme excludes Sustainable Development!

The public sector is currently seeking to reduce number of plans they are involved with – and the single plan that is most important – SD – doesn't exist at all.....

Actions

1. WAG to make it a statutory duty for all Public Sector Organisations (and individual departments within them) to prepare – by 1st March 2011 a 9% Carbon reduction plan plus a plan to identify targets towards 1 planet living for their ecological footprint; and for each public sector organisation to identify as what they require from WAG to implement it (e.g. additional devolved powers; governance issues; funding; areas of legislative competence etc).
2. By 2011 all public sector spending to be ecologically footprint assessed (REAP) on a Business Plan and individual project basis; identifying its impact towards 9% carbon and 1 planet living targets.
3. With immediate effect, all public sector organisational change (e.g. local government / health board re-organisation) to be carbon footprint and ecological footprint assessed to ensure that all changes introduced achieve net direct and indirect benefits and progress towards carbon reduction and ecological footprint reduction targets.

Education

Need to capture and consider:

1. Vocational life-long training and retraining: prioritising funding for retraining in sustainable development related skills – e.g. for plumbers / electricians / builders etc
2. Professional training: secure cross professional approach to integrated CPD / retraining; identify leaders and Best Practice for each discipline (all professions) and look within UK and internationally for this. E.g. Bank sector could look at Banco Real ABN AMRO's example from Brazil.
3. School: introduce buddying abroad (based on twinning but more involved) for schools and communities so that we start identifying with what's happening with global and threatened communities. Monitor effectiveness of SD cross cutting theme in curriculum – it can end up being watered down and less impactful if it's not also a separate stand alone subject which people get tested on as where is the drive and assessment of its impact going to come from ?
4. Educating people who are not in education: The majority..... Get to them via community buddying / schools initiatives; also sustainable pub schemes. We used to have Wales Best Kept Village Awards – why not Wales most sustainable pub award? On a county regional and national basis?
5. Over-riding need is to educate the Politicians and Public Sector: As these will end up cross over all the above sectors.

TYF Hay on Earth

Actions

1. By September 2008 to establish an ongoing Training and Advocacy Programme for All AMs, Councillors, Public Sector Directors etc based on One Planet Living / 9% carbon reduction target. For this programme to have a Mission to secure active engagement / visionary participation of delegates rather than just being prescriptive training – to encourage innovation and entrepreneurial thinking in public sector and joined up working. If the need for statutory ecological and carbon footprinting (policy 1, 2, 3) is highlighted then we think this will ‘encourage’ participation which has - up to now – often been weak at senior levels.
2. By 1st March 2011, to have identified UK and international exemplars of Best Practice in all key sectors (1.2 above). NB. this is a cross cutting theme for all priority action areas – and is considered the single most important action needed to support the Change Management exercise as it will identify First Steps and Best Practice.
3. Need to identify what is required to make these exemplars the basic ‘norm’ and identify what is currently stopping them from being the norm in Wales.
4. Need Regional Best Practice Centres where this information can be virtually / physically accessed / seen plus buddying (e.g. best practice businesses buddying others)
5. The ‘Knowledge Economy’ and key public funding priorities must be refocused on the resilience needed for all sectors in the context of climate change and peak oil production.

Business / Economy

Need to identify in terms of **profit** and **resources** the risk to the continuity and longevity of Business and the Economy in Wales and undertake meaningful work on **Supply Chain**

Resilience. Key Areas to consider in terms of supply chain resilience include:

- Waste
- Peak Oil
- Carbon Emissions / Tax
- Climate Change
- Labour Force and Demographics
- Food sourcing
- Water
- Flooding
- Ecological footprint reduction impacts
- Energy

Expand the concept of Business Buddying on a Spatial Plan / regional basis with local exemplars showing what is happening; why it's happening; what's planned for the future; and the profitable incentives to do this – so that ‘non-engaged’ businesses can quickly learn from other businesses. Need Champion Businesses e.g. drawing on May Day network – as Businesses tend to ‘trust’ other businesses more than they trust consultants.

TYF Hay on Earth

Actions

By 1st March 2010 DE&T and Rural /Heritage to have prepared a meaningful generic sustainability appraisal and risk assessment of supply chain resilience (see 5.1) for all business sectors identifying key risks to continuity of business with a requirement that all businesses receiving public sector support have to expand this to their own individual business and prepare a detailed appraisal. A focus on SME's is essential.

Fuel Poverty

We consider it absolutely essential that retrofitting of energy efficiency and micro-generation is targeted to the most energy inefficient homes first to help reduce energy demand and so emissions permanently and to take anyone living in these households out of fuel poverty for ever – otherwise each time energy prices go up they will enter fuel poverty again.

Actions

1. By 2010 a 7 year action plan will be prepared to upgrade all existing housing stock of X standard to the highest levels of insulation possible – on an enveloping scheme basis.
2. That by 2010 there will be a 7 year action plan prepared to retrofit micro-generation and decentralised energy to 75% of all Communities First wards and to all areas of dense terraced housing – on an 'enveloping scheme' basis.

New Build

We feel that WAG is seriously misled in its prioritising its zero carbon mission which is resulting in an emphasis on new developments securing biomass CHP systems without any regard being given to first reducing the building's energy demands in the first place. If reduced energy demands are not first prioritised then a zero carbon policy (highly desirable in itself) could result in totally unsustainable agricultural and land use practices locally, nationally and internationally.

Actions

1. That WAG revises Planning Policy Wales and introduce specific legislature to secure:
 - a. Lowest Practicable Energy Demand from buildings by adopting passive design principles for all buildings
 - b. Low embodied energy in all construction
 - c. Zero carbon for all new developments adopting the GLC definition
 - d. Devolved Building Regulations
2. There must be a statutory presumption in favour of local sourcing of low embodied energy construction materials with the use of e.g. wool; hemp; Sitka and other woods; reed canary grass; straw; waste fuel for biomass;
3. A presumption in favour of zero energy being fuelled first by bio- waste (food / slurry / sewage/ agricultural waste); second by timber and cardboard / pallet waste which is non recyclable and last by specifically grown bio energy crops.

TYF Hay on Earth

Waste & Energy

Actions

1. That the public sector facilitate the introduction of community based CHP and micro-generation facilities in advance of demand and that a programme for this introduction be prepared for launch on 1st March 2012.
2. That anaerobic digesters in particular have huge potential for closing the loop by providing agricultural 'natural' fertilisers reducing NPK chemical demands for agriculture and ensuring reduced waste and sewage disposal requirements and that a plan for methane fuelled anaerobic digesters (e.g. based on Hallsworthy Devon model) be brought forward for installation in each Local Authority area. With 300 anaerobic digesters in Germany and 4-5 in UK there is a need for Best Practice identification and roll out.
3. That existing water infrastructure which supported past local generation of power (leats / mills) be reviewed to ascertain viability of reintroduction of local community power schemes
4. That by 1st March 2012 all public sectors to prepare and publish a plan showing how all their waste streams will be fully recycled or go to fuel anaerobic digesters by 2020.
5. By 1st March 2010 all public sector land holdings awaiting development will have been brought into effective biomass cropping or agricultural use.

Agriculture & Environment

Actions

1. Carbon Conservation Plan – to be Prepared and published and a statutory requirement by 01 March 2012
2. All Wales ecosystems services to be costed by 2012 thus valuing what the countryside already does for Wales in terms of CO2 reduction – and to become a statutory consideration in all development proposals.
3. Review all public sector land holdings and make them work harder from a biomass / energy / food perspective.
4. Identify and publish guidance on dual food / biomass crops – e.g. using German Maize examples
5. To establish a parallel network of anaerobic digesters and composting of food and veg. waste (plus sewage / slurry) at a local scale
6. Whole Farm Diversification policies for feed / arable / livestock production within the farm cycle. – with exemplars identified and accessible.
7. Local Horticulture models to be brought forward with each LA to publish a plan by 1st March 2012 for their introduction in all settlements of > X population by 2020. Exemplars again to be identified.

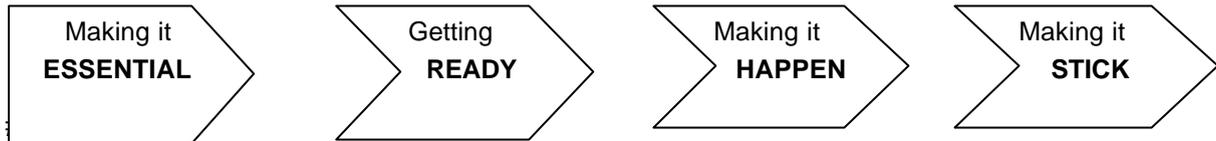
TYF Hay on Earth

Transport

Actions

1. By 1st March 2011 WAG to publish and identify all transport policies and programmes illustrating how they will achieve a transport reduction scenario of 9% per annum carbon reduction.

TYF Hay on Earth: Change Model used by groups on Friday workshop



- Business case
- Vision – local / central
- Lead; leadership
- Stakeholder buy-in –answering the “what’s in it for me?” question

- Showing it can be done (exemplars)
- Identifying / developing the tools
- Set targets
- Sector Action Plans (agri / housing/businesses etc)

- Planning Policy Wales
- Business Regulations
- Spatial Plan
- Local Authority Plan
- Rationalisation Plan (including carbon reduction plan)
- Taxation

TYF Hay on Earth

Transport

'1st Level' Priorities

- Identify whole life cost / benefit of local horticulture 'Naked Food' project
- Evaluate car pool / bike pool for cities, on the road towards being car free
- Decide if trams / light rail are a viable alternative, by 2012
- Immediately remove subsidy for north-south Wales air travel
- Complete feasibility study of west coast full gauge, double track rail link, Bangor – Carmarthen, to replace air link
- Develop plans for four car free Welsh cities
- Plan road needs around a 9% reduction in CO2 emissions
- Euro 4 buses across Wales
- Fully integrate Traveline Cymru to be more link TFL, but sustainability focused

2nd level Priorities

- Get 80% of people who work less than 2 miles from work to walk to work e.g. by making routes safe and attractive with good signage
- Rationalise bus routes and strategy e.g. Dial-a-ride / Book-a-bus for *rural* areas
- Bike hire / Vèlib in towns and villages
- Every car manufacture / auto supply chain business [and others] to have a waste plan that takes landfill down to an average of 6%
- Develop a commercially viable rail and bus based tourism plan
- Rural school bus services – central pick up point with bike racks to reduce the number of stops.

3rd Level Priorities

- Provide showers and other facilities for bikers / walkers / joggers on all commercial estates
- 100,000 businesses to provide green transport plan for commuting employees
- Get a shadow carbon trading scheme in place for travel that gives a discount elsewhere – leisure and hospitality for instance
- Local authority carbon (transport) trading schemes, with budgets for each household or business, to drive down travel to work emissions.
- Market social wellbeing improvements as the payment for restrictions in resources to the population – 'less is more', 'eco is cool', 'minimal living is easier'
- Enable school councils to 'eco assess' their own schools' footprint and energy use, to generate peer power to roll out savings or footprinting in students' homes

4th Level Priorities

- Welsh FE and HE institutions coordinate travel plans for European students
- International students tariffs based on carbon impact
- Commit to flat line of air travel plans for Wales
- Mitigate existing air travel answers to economic growth
- Change taxation regime for UK shipping fuel, with a UK –Eire detail on clean diesel in shipping
- Run an 'ask the experts' for market predictions relating to oil cost and European / Government taxes to be made available to all business and agencies via road shows.

TYF Hay on Earth

Food and Drink

1st Level Priorities

- Ensure that there are effective links to other agencies e.g. health policy and Communities Next
- Adopt permaculture principles in all future developments
- Tighten up sustainable food policy – what does 'local' mean?
- Introduce an increase of 10% of percentage of food sourced locally by public sector
- Run a national food debate on seasonal / local food

2nd Level Priorities

- Local brewing and wine producers to be encouraged via tax breaks
- Support for sustainable fisheries and aquaculture programmes
- Facilitate allotments for organic and local food production
- Introduce local 'carbon credit' stamps
- Fairer Trade and 'Values for Food / Money'

3rd Level Priorities

- Processing and packaging taxation
- Local trade in all businesses – retrofit

Housing and lifestyle

1st Level Priorities

- Planning permission for new sites to be limited to previous performance on CO2 and Ecological Footprint
- Change consumerism as *raison d'être*
- Badge sustainable along lines of Fair Trade
- Standardise Carbon Ratings
- Ensure transparency regarding product history

2nd Level Priorities

- Incentivise companies that agree to open source innovation
- Transition Towns to have delegated powers re products sold in their jurisdiction
- Require schools to teach the curriculum via SD subjects – their ecological footprint, and also through buying behaviours in their local communities
- Note that Ugly Shapes are good – local growers' products should not have to be 'perfect shape'

3rd Level Priorities

- Localisation can be linked to local artisanship, differentialised products, Transition Towns
- Concept of local artisanship, with concentric circles of artisanship and CO2 linked to each ring or circle

TYF Hay on Earth

Products

1st Level Priorities

- Link SD and business CSR to kudos in the supply chain
- WAG and local government legislation or regulation to 'incentivise' change in business,
- Cost and performance need to meet 'non green' product
- Get smarter at specifying 'why is it better'
- Ensure due diligence on all 3rd party supplies – social / environmental / community / support diversity

Energy

1st Level Priorities

- Retrofitting is a top priority; blitz an area, targeting by zone, starting with LA housing, with delivery by social enterprise / CICs
- Introduce relevant changes to building regulations; Merton 10% rule to new developments and % renewable for every new house
- Refit for feed-in tariff, local energy grid, simplified and ensuring that utilities support micro-generation
- ESCOs – pilot in Cardiff, based in the London / Woking model
- Explore the 'four day week' model as a way of consuming differently
- Explore 'slow tourism'

We examined tools and processes needed to instigate a Wales-wide immediate carbon reduction programme. First we brainstormed a list of projects and processes. We then categorised the tools according to sector, and finally we created a timeline and plotted the progress of energy descent. The four sectors were: industry, community, government, and education. The time line took us into Spring 2012.

TYF Hay on Earth

Appendix 1.1

Workshop 1: 2030 Vision

[Index](#)

Notes on the group discussions

Ice Breaker - warm up

"If you were Welsh President for the day....what single piece of legislation would you pass - to have the biggest impact?"

Stop Doing...

- Controls on food packaging, this would help control waste, limit food miles, raise funds
- Shops to be required to stop heating the outside - keep their doors shut
- Ban ironing - a needless process that uses excessive energy on a daily basis

Sustainability criteria in all projects

- All policies and processes in government and business to only proceed if they can demonstrate their sustainability
- For all levels of government to introduce full cost accounting when making decisions
- All major strategic policies are measured against different scenarios of carbon budget
- All organisations can articulate their sustainability impact in social economic and environmental impact
- Set carbon budget with reduction targets alongside financial budget, with requirement to report annually to all public bodies.
- Understand the time , cost and quality achievability of each project
- Immediately run a scenario plan on the achievability of each project

Taxing Carbon Use and/or Personal Carbon Trading

- Introduce a personal carbon budget and trading of allowances
- Government to take rural premium into account in providing services and enable people to play their part
- Institute a very high carbon tax , say £500 a ton, or personal carbon quotas
- Tax energy
- Badger UK government to sign up to binding worldwide agreement on de-carbonisation

Public Transport

- Bring in cheap accessible public and cargo transport and compel integration of provision
- Local funding of Carbon Neutral projects
- Each local authority to introduce zero interest revolving loan fund to help fund local low carbon projects e.g. carbon neutral affordable housing
- Establish local, no growth economies immediately or at least next week. we need to start by scoping what this could look like and what needs to be done to achieve this.
- Implement local sustainability champions
- For each market town to have its own anaerobic digester, based on the one that is trying to be set up in Newtown by the Cwm Harry community land trust

TYF Hay on Earth

Groups were asked to discuss “What we are aiming for” and “What did we do to get there?” in relation to Powys achieving a successful transition to an 80% CO2 reduced, post peak-oil economy.

Employment & Skills

1. Public funds targeting high value low impact jobs; high skills;
2. People helping people via community skills trading
3. Re-establishment of human scale in life with virtual and real (local) networks providing socio-economic needs; much less need for every day travel- with the choice and ability to choose to travel for major needs; lower proportion of income spent on "essential" commodities; a post consumerist post throw-away society - with the need and desire to save in advance rather than rely on credit and satisfaction of short term impulses; healthier less chemical ridden and more local food; with exotics produced in hot houses locally; crime free; pollution free environments so we feel safe and enjoy using them; higher taxes but with much higher value jobs and skills to fund them;
4. Build on the idea of a ‘5th day’ created by introduction of a 4 day working week - coordination of skills identified by local community and matched to people, moving skills out of businesses into community and voluntary schemes, valuing and utilising the skills of all ages all contributing to low carbon lifestyles - this needs local/community coordination, but by whom?
5. Introduce more basic social and practical knowledge and skills into schools e.g. domestic science, woodworking DIY etc.

Food

1. Change in land use for more self sufficient food production and flood contro
2. Meat consumption will have dropped by 70%
3. Community allotments supported by food waste composting - trading compost for locally grown food - encouraging local food networks

Localisation

1. New opportunities will present themselves i.e. there won't be supermarkets as there are now but there will be a new co-operative shopping experience
2. Localised food and commodity networks to reduce transport
3. Naked Food projects are in place in all rural communities meaning that fresh. local food, grown by social business, is available unwrapped within cycling distance
4. Local skills will become more important and craftspeople will become respected within their own communities
5. Make local communities more sustainable with more opportunities for working together
6. Make local economies more sustainable
7. De-centralised energy & community distribution
8. Globalisation will become less efficient as transport costs rise, allowing local enterprise trade to re-establish, increasing community cohesion
9. Encourage local enterprise trading schemes via local currencies etc.
10. Empower local food growing and transportation networks
11. Train local leaders to catalyse local low-carbon initiatives

Energy

TYF Hay on Earth

1. We use all of the oil and gas up!
2. We will be living similar lives to now, but our energy consumption will be significantly less.
3. Invest in the development of digesters, small scale units which can support heat, energy etc
4. Improve and increase the proportion of energy provided by renewables linked to better insulation etc.
5. Inverted tariffs for domestic energy
6. Technology: encourage adoption of low energy technologies through grants/subsidy and ease of gaining information on the technologies
7. Carbon allowances
8. Powys will have sourced an alternative to oil for heating and travel
9. Ban standby switches
10. Ban patio heaters
11. Investing in renewables whilst taking account of adverse environmental impact
12. Reform building regulations to accept and encourage low energy buildings

Transport

1. Provide a great level of flexible public and voluntary transport systems.
2. Integrated Local and national transport networks
3. Alternative fuel sources available for vehicles
4. Recreational movement of people is almost zero
5. During the C20th we began to live less in a civilisation and more in a mobilisation - a mobilisation of people and resources. By 2030 we will have dramatically reversed that trend
6. WAG leading by example - if they can't operate without flying across Wales what's wrong with their business model?
7. Integrated public transport and community based (reduced travel) services

Buildings (incl. Housing)

1. Improve the quality of the housing stock.
2. SMART meters and control in every home and office
3. Energy efficient (including insulated) refurbished homes and new build
4. Huge investment to increase energy efficiency in existing buildings (retrofitting to 20% of current emissions)
5. Energy efficiency certificates required for every house, lower rated houses to have penalties imposed

Economics

1. Funding things that create solutions rather than funding problems – e.g. .funding community schemes; funding healthy foods for low income families; funding soft skills that help people relate to each other rather than funding the prisons hospitals etc which deal with the problems
2. Reduce international trade and fair trade where it is necessary.
3. Public funds supporting increased value projects rather than
4. Necessity is the mother of invention. The current position will drive people, governments and businesses to behave differently
5. Instead of pay increases people will be offered a reduction in working hours.
6. Environmental goods and services have a value placed upon them - recognising environmental limits
7. Big corporates will become more responsible because they will want their businesses to continue. They will react to customer pressure
8. Quality and longevity will become more important than quantity and single use products
9. Higher value given to traditional rural skills and low technology recognised as having a high value

TYF Hay on Earth

Education

1. Encourage a cultural shift to reduce personal carbon use
2. Big corporates will lead the protection of their business through sustainability
3. education (both at school age and adult level)
4. Funding professionals to retrain
5. Engage children through schools' curriculum so they influence their parents and communities
6. Behavioural change: stimulate recognition of need for low energy culture and community based operations amongst both public and trades - using a graduated approach to stimulating behavioural change
7. Identify best practice and people who are pushing the barriers as soon as possible and use these skills
8. Looking at Cuba as a model of post peak oil urban living

Demographics

1. Encourage the immigration of young people
2. We will move to cooperative old people's homes with self help and technology labour saving devices
3. The old concept of retirement will be remembered in documentaries; this generation plan working and living in a completely different way - 1000 days to get a life is the new plan.
4. Engage young people in policy formulation and politics

Values

1. Sustainability will be a viral change. Change happens because people choose to change their behaviours.
2. Quality not quantity underpinning public spending decisions
3. Cross party support for key measures which become law and so remove the political uncertainty preventing long term strategic planning
4. Less demand for preventable health services because the population will be healthier due to increased exercise, less pollution and so less asthma etc plus more local affordable food
5. Achievable and realistic targets and goals
6. Attracting better calibre of politicians into local politics
7. Change in attitudes towards public spending and tax
8. Re-establish community values by establishing a series of local enterprises that provide services and products to that community
9. Increased web links within schools to encourage virtual dining, socialising etc to build social skills.

Land Use

1. Agricultural payments are based on environmental goods and services and/or CO2/ climate change context
2. Planning regime needs to change overnight - WAG lead needed for this
3. Land use encourages increase local food production, carbon capture, flood control

Communication

1. Change creates more change
2. Environmental limits will be recognised
3. Identify people who are holding things up - they are often at high levels and either coach them challenge them or remove them. fast.
4. Identify international best practice and use it /embed it in policy
5. Incentives and disincentives

Tax & Central Govt.

TYF Hay on Earth

1. Tax fuel; sugar; saturated fats; alcohol etc to higher and higher levels
2. Green taxes
3. Spend more of tax on fuel to support growth of sustainable systems
4. Initiatives such as sufficient tax incentives for using the 5th day for community service
5. Carbon accounting for all public sector activities
6. Only single income mortgage
7. CO2e accounting for all businesses receiving public funding or even all businesses
8. Development of carbon as monetary value
9. Evidence based policy for Government programmes

Alternatives to Growth

1. Zero economic growth should be the target
2. Amortisation tax
3. Shifting from a products economy to a services economy
4. Have loan schemes for clothes, tools etc - but can a capitalist economy function with this?
5. Money was marketed as abstract, time as tangible.
6. Competition and collaboration both work - and can work alongside each other

Time & Work

1. Enforce working week limits (EU directive) then allow for reductions and flexibility
2. We will be trading in some form commodity instead of receiving actual cash
3. People start negotiating salaries in terms of working hours
4. The "1000 days to get a life" plan will mean that people are managing the balance between what used to be "work" and "life" in a completely different way
5. Portfolio careers
6. By 2030 all will work a 4 day week, for all ages, and no retirement age, the 5th day is a "community service" day
7. Holidays will be taken in say 6 month sabbaticals every few years rather than a fortnight in Spain

TYF Hay on Earth

Appendix 2.1

Workshop 2: Fit for the Future

[Index](#)

In the first session, groups were asked to write down the most radical change that they could imagine that will have an impact on the way that business does business.

Commercial Scale

- Virtually zero profit
- Not possible to borrow money
- Political celebration of negative growth
- Only a few global companies
- Manufacturing moving back to UK with zero built in obsolescence
- Supply chain distorts to other global locations
- Logan's run
- Environmentalists running business rather than finance
- Virtual business
- Competition over resources with rising middle classes in India and China
- People, planet more important than profit
- Flat organisations
- Increase value business are delivering without increase in people
- No supermarket chains

Localisation

- Most food locally supplied - little imported food
- Positive localisation
- Micro factories
- Local workforce is the only pool of labour
- No factories
- All local trading
- Population restrictions
- Whole supply chain accountability - internationally
- Restricted travel (limits per person/company)
- No international freight movements
- Move to local economy
- Shared economy
- Closed loop services only
- Wales will be most attractive global location for business to locate

Fossil fuel Gone

- Commodity scarcity
- No fossil fuel
- No personal fossil fuelled transport
- People can't travel distances to work - unaffordable
- Travel is constrained by cost
- No oil derived plastic

Waste

- Zero waste to landfill
- Lower volume of sales - goods have to last and be repairable
- Frugal will be good - less is more
- Shift in consumption pattern from short term to more durable products
- Fair trade

Personal Habits

TYF Hay on Earth

- Most people will fly only two or three times in a lifetime
- People will be more discerning consumers and will have less choice as products with negative impacts are edited out
- Everyone work from home
- No 9-5 hours
- Total flexible working
- People will swim to work
- Working from home - no offices
- No concept called work
- No cars
- Consumption as a term disappears

Demographics

- Compulsory euthanasia
- Increased work age to at least 75
- Child rationing - a demographic sea change
- Business' raison d'être will be to support their pension commitments
- Demographics will result in a missing generation
- Demographic changes - huge increases in migration from the developing world
- Mass migration because of environmental reasons such as rising sea levels rather than for economic reasons
- No limit on work age
- Global diseases for humans and crops will increase and spread
- Disease affecting animals people – e.g. malaria west Nile virus etc

Carbon trading

- Carbon prices will drive business - carbon currency of future
- Carbon measuring for all activities - capital and operational
- Carbon profit (negative use) rewarded
- Tax on company ecological footprint = tax on the ecological footprint of goods
- True life cycle costs only

Community

- Transition towns
- Eco-communities, living in sustainable communities and sharing resources within a local population
- There will be telepresence hubs in every community
- More people working the land
- Incentivised permaculture
- Culture shift
- Common vision based on sustainability principles

Energy Source

- More ecological/biological energy sources will be invented or recognised
- No night and day
- Human power captured

TYF Hay on Earth

Appendix 2.3

Hay Lecture: Mike Barry (M&S) and Ben Stimson (Sky)

[Index](#)

Responses to “what was your take on what you’ve heard from Mike and Ben and their perspective on what leading business is doing?”

- Radical in business terms
- People are critical
- Food miles debate - livelihoods of poor farmers vs. carbon emissions
- Impressed by how much those companies are doing
- Like the credit card - positive engagement
- Inspirational that business is trying and doing things and leading the way
- The cleverness and innovative nature of business to find solutions
- How difficult it is to change old habits
- The lessons from business can be applied elsewhere
- Need for true cost across life cycle
- Good use of business champions
- Use of their market position - both with consumers and suppliers
- Is overseas offsetting the answer?
- How long does the lack of integrity from the past linger in the minds of customers?
- Board level empowerment critical
- There is a real opportunity to use "sky installers" to help householders make change
- Lot of skepticism around carbon neutral claims; it was important to hear how it can be properly justified
- Difficult to manage the brand
- Empowering rather than telling employees
- Do we trust sky and M&S?
- Potential impact of the recession - is going green really a luxury
- We can use business experience to help us plan the speed of change
- Powerful voice and ability to get to people that govt cant reach - needs to be used more for joined up private public sector collaboration
- Maintaining expectation
- Consumer attitudes in times of recession
- Not an add on
- Bit of greenwash from sky
- Need all stakeholders involved
- Not radical at all
- Private sector businesses leading the way – where’s the public sector leaders of similar quality
- Sky example of working with householders and using innovative technology to reduce energy use
- How do companies move from unethical practice to sustainable practice
- Collaboration needed
- Need to protect the political brand like M and s do.
- Be consistent and then maybe consumers will follow you
- Win-win-win, not compromise
- Reality not rhetoric
- Over consumption not being tackled
- Change the incentives for business
- Were embedded impacts taken into account?
- Real vs. perceived needs not being addressed
- Culture change
- Companies just need consistency for government not a change every couple of years
- Importance of trust

TYF Hay on Earth

- Does credit card encourage consumption?
- Beginning to question the underlying "growth" model??
- Difference between what can influence and what can control
- Are businesses employing champions instead of empowering all employees
- What's going to happen after the "easy pickings" have been won
- Recognition that we are making first steps and that big change will be needed in the future
- Cultural social issues not being addressed in any serious level

TYF Hay on Earth

2030 Reality

Change in economic model

- Ban landfill by 2020
- Get rid of meaningless targets
- Abolish the stock-market
- How can we really think global and act locally?
- Stop hand outs!
- Do not have linear tracks but many avenues of development and progress
- Stock markets drive behaviour. why do we allow traders that know nothing about the business to dictate?
- Winning businesses choose to pay back debt from 2010 and avoid borrowing money to grow
- Still have global trade but in a sustainable way
- Abolish the welfare state
- If 2/3 grimace at a target get rid of it immediately
- Getting rid of the stock market is not against trading. This is about the people who own the business being there. Good examples include John Lewis, Adnams brewery, and any organisation that's privately owned. The stock market businesses are owned by a hoard of faceless people. It will make sense in a carbon restricted future to have stakeholder ownerships of companies. Needs more thought on how to do it.
- Don't do grants they are anti productive; incentivise performance
- Staged withdrawal; make companies responsible for employees and families welfare.
- Move towards local trading networks away from globalisation

Whole life accounting

- All externalities will be costed in - whole life accounting
- Single, long holidays where the traveling is as much the holiday as the destination
- Introduce individual worldwide carbon limits
- No one route to the future

Collaboration / industrial ecology

- Develop synergies with other companies to reduce energy consumption and minimise waste
- What will consumer demands and needs be - the business that can respond to the changing needs and demands will survive
- Collaboration across the supply chain; raw materials and workforce.
- SMEs pool resources and network to provide scale -- rather than grow to dominate their sector
- New products based on collaboration (home health insurance)
- Business chooses to devolve to self-determined local units without central targets
- Collaborating with competitors to reduce consumption - share transport - share heat and power and recycling; collaborate to compete
- Local businesses providing local communities

Use of measures / credentials

- Establish a waste register (within regions) - list all "waste" outputs so that other businesses might use these as inputs - closed loops. Each County Council create a database that facilitates the recycling - by 2010
- Population control by 2010
- Standardised carbon accounting frameworks/ numbers - 1 system
- Any business that is getting support from government will need meet transparent Entrepreneurialism requirements

TYF Hay on Earth

Education / knowledge

- Help employees see that they are volunteers
- Innovation; funding education of consumers and workforce so that the business develops the competitive edge in the market place
- Customers value low carbon/ sustainably produced products. By 2012, customers want to buy these products by preference
- National curriculum to include mandatory cross cutting sustainability theme from 5 to 18

Leadership and ownership

- Challenge IP /copyright rules so that technologies HAVE to be delivered to market or IP lost
- Everyone takes ownership of their environment - work/home/leisure - what is work boundaries are blurred. Good work is work that you don't know your working. Work to be redefined as contribution - on going process over the next 10 years - what is right work.
- Champion companies to lead the way - capture now what is and isn't working
- Development of new generation of business leaders who think and act holistically
- Employee organisational ownership with success calculated on basket of measures leading to intergenerational equity
- Dynamic engagement to innovate and breakdown formal structures- asap create partnering forums across boundaries within societies and business. Reverse mentoring partner up business leaders with young people to capture the upcoming ideas and new ways of thinking - two way process bottom up and top down

Changes in work style / place

- Create cycle and walking tracks (alongside existing railways?) for employees main routes into and out of work
- Enabling home working, virtual communication and sustainable transport wherever possible Four hour working day allowing time to walk, cycle, etc
- Move electrons not atoms

Transport / movement of goods

- Businesses will have to be less wasteful - reducing, reusing and recycling everything
- By 2015 only 10% of employees travelled more than 5 miles to work
- Co-operative low carbon transport hubs in place serving local companies - by 2015, using alternative fuels such as renewably produced hydrogen
- Single delivery mechanisms (broadband) using collaboration (retail delivery)
- Cardiff - car free zone
- Zero carbon transport
- Reuse and renovation of existing industrial revolution infrastructure to provide sustainable transport routes to existing housing and economic regeneration areas.
- Increased port use to facilitate sea routes for freight and public transport (using modern fast cats assisted by computer controlled sail systems)

Green technology

- Design entirely recyclable items that incorporate high-tech features such as solar paneled curtains
- Generate our own energy from renewables
- By 2018, our plastic used in manufacturing is all from recycled sources
- Channeled majority of business support funding into projects that manufacture sustainable products, e.g. a plastic bottle manufacturer could only receive aid for a new, sustainable container

Business model

TYF Hay on Earth

- Transparent entrepreneurialism will be key to the future - true costs, true impacts
- Relook at ownership of business
- Challenge current business and lifestyle models
- Invest in local materials - ash etc
- Introduce full producer responsibility for all products by 2012
- Re-incentivise businesses to become responsible employers. with a transparent way of doing business
- Locally strong but internationally influential ; local supply chains maximised embracing workforce who are their communities and consumers; - more demanding accountability both locally and internationally
- Far, far more knowledge about the source and environmental social ethical economic impacts of entire supply chain - making this knowledge available because it influences customers and because it reduces business taxes on ecological footprint of goods so makes businesses more profitable in many ways
- SME/ large company collaboration (moving away from VC based profit investment in innovation) to large corporate "funding" through supply chain engagement of SME
- Localising the global; how can global organisations have a local interface?
- Social enterprise to operate with triple bottom line accounting

Government Policy

- By 2010 we will have got government in Wales to realise that this is a serious economics issue which they need to plan for and prioritise in their spatial plans economic policies government targets etc
- Tax exemptions for zero carbon products and materials
- Rate relief for carbon neutral businesses
- Resource tax (or tax relief) and or waste tax
- Appropriate regulation to encourage carbon reduction - taxation and incentivisation
- Government led enhancement to ISO standards to ensure a clearly defined set of green credentials for companies to meet or exceed, all funding to be exclusively related to new standards
- Business demands lighter touch but more decisive government -- e.g. taxing resources not labour
- Make Carbon reduction the only option through fiscal instruments - to ensure carbon reduction is accelerated

Carbon currency

- All Welsh adults to have a carbon credit card
- Create a carbon currency with individual allocations
- Introduce high individual carbon "ration" now with "spend" confined to high impact products and services e.g. business flights
- My customers want to know how much carbon was used in creating the product
- Transparent entrepreneurialism will include carbon accounting as core element
- By 2010 [we] know the key area of CO₂e emissions impact associated with the business - benchmark direct and indirect impacts; publish them; share ideas with competitors and supply chain over how to reduce them; set individual targets for each business and action plans for reduction and volunteer penalty payments for underperformance to pay for local social initiatives which create similar carbon savings to those which we've failed to achieve in our supply chain

TYF Hay on Earth

Appendix 3.1

Learning from Tomorrow

[Home](#)

1. Family-centred learning is investigated
2. People who know and have experienced lower levels of materialism (in their '60s) share insights on One Planet Living
3. Educational establishments have learned to train people for jobs and technologies that don't yet exist
4. Forget that education finishes when school finishes – life-long learning is key to this; people of 50 -60
5. 70% of the workforce in 2030 has already left education
6. Careers service not really fit for purpose
7. Find new ways of measuring what matters
8. Learn how to make better use of those who are doing the good work
9. Let's not underestimate the ability of younger people to teach older ones
10. A 16 yr old has created the world's first laser photonics seismograph – offer of DD from Cambridge
11. Between school and real world kids lose their enthusiasm – work out how to keep that enthusiasm
12. Critical thinking – oil vulnerability auditing – Liverpool
13. Skills sector teach in
14. Awarding bodies to award credits for SD courses
15. Mentors in schools
16. Developing modules that demonstrate and do case studies
17. Hands on ecoliteracy skills, carbon counting
18. Champions and mentors, with the development of systems thinking tools
- 19.

Notes from discussion

- There's a perception that this is 'someone else's problem' and we'll wait for something really bad to happen
- Higher Education (HE) – perception that it's 'Business as Usual' although a few people are pushing the SD agenda. How do we embed demand into every course?
- Maybe we need a complete change of mindset about way that companies deal with customers
- DCELLS has changed tack towards demand led provision – SD not necessarily top
- Health Safety and Environment is embedded into every programme – but is it at the right level? It needs to be embedded consistently throughout whole curriculum
- Bottom up, community based opportunity to transform the system – using Transition Towns' model as a basis
- There's lots of variety throughout Wales, therefore local solutions are needed
- Children need to learn skills more than facts – question, discriminate and modify – hands on activities
- Basic principles pre-school and primary – question, analyse, discriminate and test
- Need to get away from "One Day Workshop" on SD – more capacity building is helpful
- Education 'teacher knows best' is not same as derivation of *educere* – to bring out (from *ex* – out and *ducere* – to lead).
- A revolutionary change is involved

TYF Hay on Earth

- [We need to] generate a model that's applicable globally; design an education system that can be applicable elsewhere
- Move beyond a sustainability module being added to the curriculum – this has to come from an individual basis – education system has to encourage more involvement than is there – people being able to choose their own path

Participant feedback on Alan Weisman's session: 'The World Without Us'

- Population growth is incredibly important – it almost exactly correlates to CO2 emissions
- WAG ought to be flagging up population with respect to climate change
- Aware of the issue of specialisation in relation to whether or not this is at the heart of creating silos
- Look at emissions decline in relation to the number of specialists we need in each area OR recognise that each individual has gifts that can be drawn out through education
- How can we embed systems thinking in the curriculum?
- Whether the influences of this book kick people into action or lull them into complacency
- Starting with an imaginary, radical scenario allowed discussions of valuable topics
- Our own decadence means that our communities are not suffering from flood and drought every five years etc
- Population control in China would have to have been legislation-driven vs. Italy where low child numbers are driven by choice
- How do we get these ideas (population control) to stick in a democratic society?
- Do we encourage young people into our country to balance ageing populations
- How would a 17 year old react to the theories and concepts in the book – too much like science fiction?
- Need to be more aware of what makes a difference – not always aware of where the connection?

TYF Hay on Earth

Notes on Alan Weisman's group conversation with 'Learning from Tomorrow' group

Andy Middleton: What's your take on what's needed in education to drive the scale of change that we need to see?

Alan Weisman: We've seen schools preaching but not practicing. Earth from space showed us how unique this planet is – Earth Day was declared. As a consequence of my books, I get to see “the solar panel” or “the compost heap” as opposed to seeing the whole roof as a solar collector. Students get this stuff – far and away the biggest issue is where our food comes from. We wouldn't be here if we hadn't been able to live on the food that can grow where we live – to dig up the tropics for winter fruit is asinine.

We need to be at least discussing what population means with our children. I talked about this with 250 Mormons – they're stronger on population discussions than the Catholics. At one point, Mormon doctors realised that their society was disintegrating because women were having too many babies (not recovering and dying in childbirth) – maybe we need to do the same to maintain the health of Mother Nature. Maybe with more recent liturgies you could respond to this more flexibly than older doctrines

In allowing the population to grow so fast, we've reinvented original sin. We deserve to be here – we evolved or were created to have a good purpose. There was a time when human agriculture wasn't a problem for nature e.g. Papago native Indians farmed in Organ Pipe National Park – the farmers had to go – and so did half of the birds.

Organisms go to where resources are; the Mexicans will come across the US border regardless of the number of barriers – and this will happen in Europe; if people can't feed themselves in their country, they'll go to where the food is.

TYF Hay on Earth

Making Change Happen

[Home](#)

Notes

- WAG DE&T currently fail to recognise the strategic vulnerability of the Welsh economy which by virtue of its geographically peripheral location in Europe is more vulnerable to rising fuel prices and reduced oil availability than any other part of mainland UK.
- Europe's largest industrial complex is at Wrexham and Deeside and is heavily dependent on international road freight movements and distribution/ the transport division of DE&T currently prioritises road infrastructure and planning over sea; rail and canal movements.
- British Waterways are working to bring forward proposals for working canals again and need additional funding to accelerate their repair.
- Joint working opportunities exist to enhance use of key ports in Wales and near to Wales (Merseyside and Bristol). Is there an opportunity for a local car tax – e.g. where public sector transport is available but underused – e.g. Ebbw Vale / Cardiff / Valleys / Swansea?
- Need to identify ways to reduce the need to travel – this needs genuine integration between the Economy and Transport and Housing functions of DE&T which doesn't exist now.
- Virtual hubs enabling public transport movement sharing
- Identify best practice internationally.

Brainstorm – list of tools:

- Ecopreneurship College - needed to disseminate key sustainable learning & skills.
- Champions/ Mentors - needed to spread best practice and skills.
- A nation-wide 'teach-in' to ensure that all educational establishments were well informed and current on the nature of the challenge that climate change presents.
- Develop ecological literacy.
- Embed ecological literacy in each discipline - to help each sector of the system address this social level challenge.
- Sustainability skills course developed.
- Local action: encourage & disseminated examples of best practice.
- One Planet Living encouraged as a goal for Wales. Use this model to make environmental information & assessment understandable to mass audiences.
- Social Marketing – develop a more clarity in goals.
- Internet: website resources.
- Develop knowledge base: ecological literacy skills, data to support, and systems.
- Enabling politicians to change: data and ecological literacy.
- Make climate change into a 'ring-fenced' issue.
- Carbon rationing / carbon shares as an alternative to carbon taxation.
- Explore the use of older people to galvanize action.
- Re-Design standards for each profession. Call on professional codes to address the sustainability agenda.
- Create 'environmental certification' programme for kids and adults.

TYF Hay on Earth

Industry

- Redesigned standards and professional codes across sectors to address ecological literacy and climate change.
- New certification programmes.
- Encourage mentors and champions.
- Ecopreneurship College - to disseminate key sustainable skills.

Community

- Encourage local action & re-localization.
- Support local groups engaged with lowering carbon emissions.
- Encourage the use of mentors and older people to share skills.

Government

- Commission social marketing research with different market segmentation for effective engagement.
- Commission other research (see education below).
- Data collection
- Consider developing methodology for carbon rationing.
- Ring-fence the issue of climate change and sustainability as cross party consensus.
- Encourage ecological literacy in business and education.
- Make use of the CAT for wide spread educational programmes.

Education

- Teach-in
- Awards for kids
- Certificates for adults
- Ecopreneurship College
- Champions
- Toolkit for sustainability course
- Embed ecological literacy across the curriculum
- Research on best practice, evaluative methods
- Research on best methods for making One Planet Living understandable to mass audiences
- Media & education

TYF Hay on Earth

Feedback from participants

[Home](#)

General feedback on the four workshops

Thought I would give you a week to recover from the Hay week. What a fantastic gathering and such stimulating conversations. I found the whole day I attended, very uplifting and left me feeling very positive about what is possible if we only remove the "but this is how we do it!!" and think and dream the impossible.

Usha Ladwa-Thomas, Welsh Assembly Government

Thanks for organizing these workshops. I thought they were really excellent and will incorporate some of the processes and into energy descent planning in Brixton.

Jody Boehnert, Transition Towns Brixton

Just wanted to say thanks for inviting me to Hay on Earth last week, thought it was an excellent day and the other attendees who I chatted to also thought it was great - high quality people having a high quality discussion and coming up with some powerful ideas.

Van Griffiths, Groundwork Wales

Thanks again for inviting us. We enjoyed the sessions. You managed to get some really influential contacts to attend and generate some interesting discussions.

Frank O'Connor, Eco Design Centre Wales

Many congratulations on what seemed to be a very successful week and I hope the catalyst for important conversations, initiatives and action... it did come across as a very well thought through series of workshops and the people you had collected together could make a difference in some important ways.

Prof Alan Lovell, Glamorgan Business School

I just wanted to say that you and the team did a great job at Hay. Look forward to working with you on the follow up.

Peter Davies, Sustainable Development Commission Wales

Excellent event

Ian McIntosh, Groundwork Wales

Thanks so much for putting together that think tank... it was very interesting and, I hope, ultimately rewarding all around.

Andre Walton, Nant-y-Coy Arts & Creativity Centre

Very good f/back on the workshops, which I thought were an excellent initiative and went very well

Roger Thomas, CCW

I would like to thank you for your kind invitation and hospitality at Hay last week. I thoroughly enjoyed the event and found the discussions most illuminating and informative. The venue and organisation were fabulous and indeed I find it difficult to imagine a better event.

David Skidmore, Welsh College of Horticulture

Excellent job Friday. Well done. I thought there was some insightful and energetic ideas flying around. Good luck at pulling them together

Prof Stephen Evans, Cranfield University

TYF Hay on Earth

Just to say a big thank you for Friday. I found the day stimulating and a great opportunity to have a mix of sectors and minds working on such an important issue with such different perspectives

Lynnette Evans, CCW

Congratulations!! The organisation, structure, content and delivery of Hay on Earth was just superb and the choice of breakout sessions amazing - they worked really well - especially as time passed by for reflection on them. The hard work behind this event definitely paid off.

Imogen Sherriff, WAG

It was inspiring to see an event like this that builds bridges between those with ideas and those with influence – brilliant!

Michael Pawlyn, Exploration Architecture

Specific Feedback

Day 1: 2030 Vision

The comments from Days 1 & 2 were generated using the Real Tools electronic facilitation process

What did you like?

- Opportunity for everyone to contribute without constraint - in addition to the facilitators, the IT set up was great in facilitating this!
- Email
- Structured approach to deriving outcomes
- Interaction with others attending
- Being able to discuss and reflect on key issues that so far have not been debated/considered by the LHB in Powys
- Liked the interactive nature and that decisions were made to influence real actions towards a more sustainable Powys. So many of these events can end up being talking shops.
- Liked the range of participants
- Informal atmosphere
- Freedom to participate.
- People's honesty and openness.

What could we improve?

- Ensure theatre session more productive
- Focus on specific topic to do with Powys
- Encourage and enable more people within the groups to have their say - some people do all of the talking!
- Cinema session was ill-chosen
- Andrew Simms session - a missed opportunity but it did stimulate some interesting thoughts that surfaced later in the day i.e. supermarkets' role in society

How much did the technology help?

8.63 on a 1-10 scale

Any other reflections?

- Results are live. The offer of feedback from Powys CE Mark Kerr is excellent
- Overall, a good event with a number of key decision makers and policy makers here to influence change. Will be interested to see what ACTUALLY ends up happening from the event.
- Probably need to divide responses into scenario types so as not to get confused, e.g.
 - "minimal", doing what is practical now, but going in the right direction (what Mark Kerr can use)

TYF Hay on Earth

- basic UK Government scenario of 3% decarbonisation (Stern)
- "serious" de-carbonisation at 5-10% (Zero-Carbon Britain)
- These would produce "families" of recommendations and would help clarify the situation. No.3 would serve as a bogeyman that make the others seem more appealing!
- In so many ways this was a prototype -so what happens next? Although Mark Kerr is going to look at this, how do we stay engaged?

Day 2: Fit for the Future

What did you like?

- Use of technology and real time feedback
- M&S and Sky contribution helped people to reframe what is actually possible and happening.
- A way of filtering passionate issues
- Group working; combining outputs; free thinking from all; networking
- Access to decision makers
- Good discussion and interaction
- Thinking time and diverse range of views, rapid feedback on ideas through use of technology
- Talking with like-minded people
- The opportunity to network
- Lots done in a short space of time

What could we improve?

- Fewer priorities. More ruthlessness in editing ideas
- Reached out to get more businesses involved - broader cross section across different levels and degrees - not necessarily companies that are already doing sustainability
- Share experiences from the floor. M&S are not the only ones doing good things. Share expertise. Start collaborating now
- Spend more time evaluating results
- Less rain no moving around and getting to know other tables. no intros at the beginning
- More emphasis on business response - people kept moving into policy and government rather than corporate challenges and opportunities
- Arranged for better weather
- I had never been to Hay before - info on footwear would have been useful! Silly me.

How much did use of the electronic tools help?

- 9. on a 1-10 scale

Other reflections

- Good pace well managed
- Collective rankings don't accurately reflect real knowledge.
- Voting needed more time to consider or an additional option of submitting remotely at a later time.
- Lessons could be learned by WAG on consultation process
- Mind mapping is missing = i.e. unstructured thinking first
- Good that a follow-up and review
- Technology kept locking up?
- Would be nice to think something will happen, but not clear how

TYF Hay on Earth

Resources

[index](#)

Relevant lectures from 2007 and 2008 Hay Festival – available as downloads:

Wally Broecker, Robert Kunzig and Jon Snow: Fixing Climate Change (31 May 2008)
http://www.hayfestival.com/archive/details_320.aspx

Jane Davidson and John Gormley: Governing the Environment (30 May 2008)
http://www.hayfestival.com/archive/details_303.aspx

Alan Weisman: The World Without Us (29 May 2008)
http://www.hayfestival.com/archive/details_302.aspx

Monty Don and Patrick Holden: Food production, organics and supermarkets
http://www.hayfestival.com/archive/details_289.aspx

George Monbiot: Heat; analysis and action on carbon emissions (May 2007)
http://www.hayfestival.com/archive/details_75.aspx

In addition, the following books may be useful

John Kotter: Leading Change, Harvard Business School Press (1 Sep 1996)

Richard Beckhard, Reuben T Harris, *Organizational Transitions: Managing Complex Change*, 2nd Edition, Addison-Wesley Pub. Co., 1987

TYF Hay on Earth

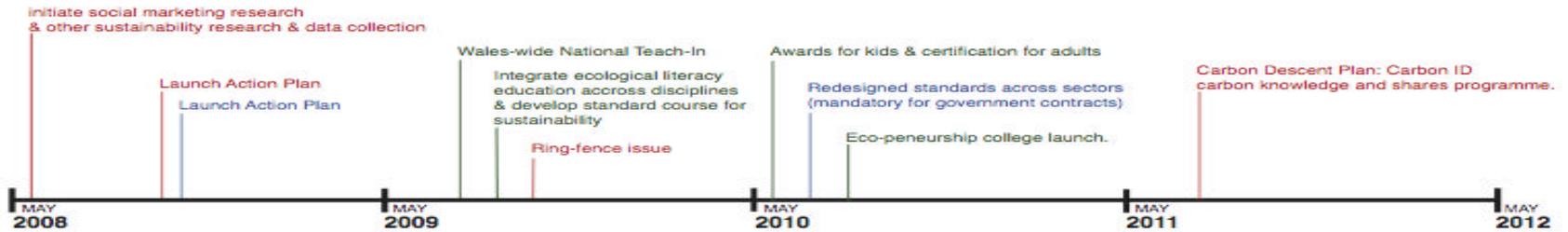
TYF Hay on Earth

Time line for change

This time line was developed by groups working on the 'Making Change Happen' session on day four, and drawn up by Jody Boehnert.

TYF EcoSapiens Workshop: HAY Festival
Timeline for Energy Descent in Wales
May 2008- May 2012

Tools & Processes



RED: GOVERNMENT
GREEN: EDUCATION
BLUE: INDUSTRY & BUSINESS
BROWN: COMMUNITIES

TYF Hay on Earth

TYF Hay on Earth

Participants

[Home](#)

Name	Organisation
Adam Hainsworth	Noughtilus
Alan Horton	Track Training / TYF
Alan Lovell	University of Glamorgan Business School
Alan Netherwood	Netherwood Sustainable Futures
Alan Weisman	The World Without Us
Alex Badley	Cynnal Cymru
Alistair Paul	Stockholm Environment Institute
Andre Walton	Nant y Coy Arts and Creativity Centre
Andrea Collins	
Andrew Padmore	UES
Andy Middleton	TYF EcoSapiens
Andy Williams	Young Enterprise Wales
Anna McMorris	National Assembly for Wales
Anne Meikle	WWF
Antony Turner	Carbon Sense
Ben Stimson	Sky
Bill Purvis	Environment Agency Wales
Brett Sadler	The Transformer Partnership Ltd
Caitlin Davies	Welsh Assembly Government, DCELLS
Carl Atkinson	Countryside Council for Wales
Carl Wannop	Countryside Council for Wales
Carole Anne Davies	Design Commission for Wales
Carrina Gaffney	Guardian News & Media
Cath Ranson	Snowdonia National Park Authority
Chris Mann	Powys Local Health Board
Chris Mills	Environment Agency Wales
Claire Fowler	Welsh Assembly Government
Craig Sams	Green & Blacks
David Skidmore	Welsh College of Horticulture
Dave Hughes	TYF EcoSapiens
Dean Sanders	TYF EcoSapiens
Dee Reynolds	Tourism Partnership Mid Wales
Dr Clive Walmsley	Countryside Council for Wales
Dr Einir Young	Bangor University
Dr. Alan Netherwood	Netherwood Sustainable Futures
Elaine Brook	Gaia Partnership
Elena Dawkins	Stockholm Environment Institute
Frank O'Connor	Eco Design Wales
Gareth Hall	Welsh Assembly Government, DE&T
George Marshall	Climate Outreach & Information Service
Glyn Jones	Pembrokeshire College
Gordon James	Friends of the Earth
Gwyn Thomas	Dyfed Powys Police
Haf Elgar	Friends of the Earth
Haf Roberts	Ty Gwalia
Hannah Curtis	Eco Design Centre Wales
Hannah Lewis	Re-Design
Hilary Neagle	Sustainable Development Commission

TYF Hay on Earth

Ian McIntosh	Groundwork Cymru
Ieuan Wyn Jones	Deputy First Minister, National Assembly for Wales
Imogen Sherriff	Welsh Assembly Government
Jane Davidson	Minister for Environment, Sustainability & Housing
Jo Horton	Travel Line Cymru
Jody Boehnert	Eco Labs
John Bradshaw	Welsh Assembly Government
Jonathan Brown	Land for People
Jonathon Tench	Oxfam Cymru
Judith Pagett	Powys Health Board
Julie Masters	Welsh Assembly Government, EGS
Justin Baird-Murray	The Metropole Hotel
Karen Griffiths	Carbon Trust
Linda Jones	Welsh Assembly Government: DE&T
Linda Pepper/Carl Cooper	PAVO
Lizzi Geary	Guardian
Llinos Price	Countryside Council for Wales
Lori Frater	
Lynnette Thomas	Countryside Council for Wales
Mark Isherwood	Lifelong Learning UK
Mark Kerr	Powys County Council
Mark Shayler	Eco3
Mark Standeven	The Coefficient Company
Martin Fitton	
Matt Harrison	White Design
Matthew Quinn	Welsh Assembly Government, DESH
Michael Pawlyn	Exploration Architecture
Mike Barry	Marks & Spencer
Mike Edmonds	Arup / Value Wales
Mike Jones	Quantum Consultancy
Morgan Parry	WWF
Neil Ingham	Buildings Research Establishment
Owen Evans	Business in the Community
Paul Cook	
Paul Webber	Arup
Paula James -Parry	Welsh Assembly Government
Pete Clapperton	BAE Systems
Peter Davies	Sustainable Development Commission Wales
Peter Marrs	Powys County Council
Peter Walker	TYF EcoSapiens
Prof Alex Lovell	Glamorgan Business School
Rachael Durrant	Bulmers Foundation
Rhiannon Jones	Visit Wales
Rhodri Glyn Thomas	Minister for Heritage & Tourism
Roger Thomas	Countryside Council for Wales
Rosa Blanch	British Trust for Conservation Volunteers
Ruth Davies	Neath Port Talbot Borough Council
Sharanne Basham-Pyke	BT
Simon Bilsborough	Welsh Assembly Government
Simon Marr Johnston	Dan y Castell
Sophie Thomas	Thomas Matthews Ltd
Stephanie Wait	Visit Wales
Stephen Singer	Jump Timbuktu
Steve Bather	Realise Group

TYF Hay on Earth

Sue Price	Countryside Council for Wales
Sue Smith	BAE Systems
Sue Vincent Jones	National Assembly for Wales
Tom Bourne	Welsh Assembly Government
Usha Ladwa-Thomas	Welsh Assembly Government
Vanessa Griffiths	Groundwork North Wales
Yvonne Jones	School of the Environment and Society

TYF Hay on Earth