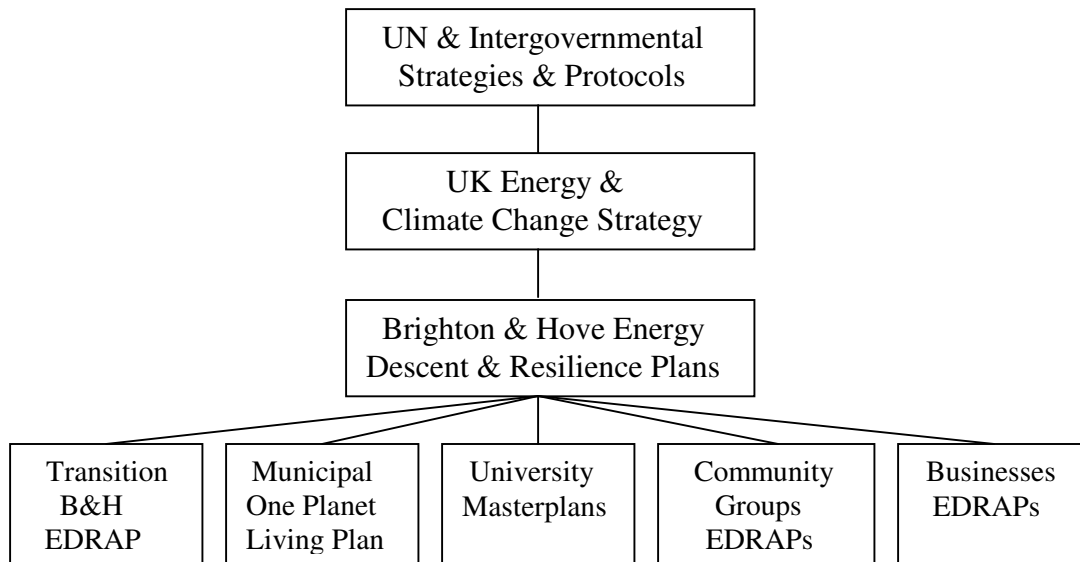


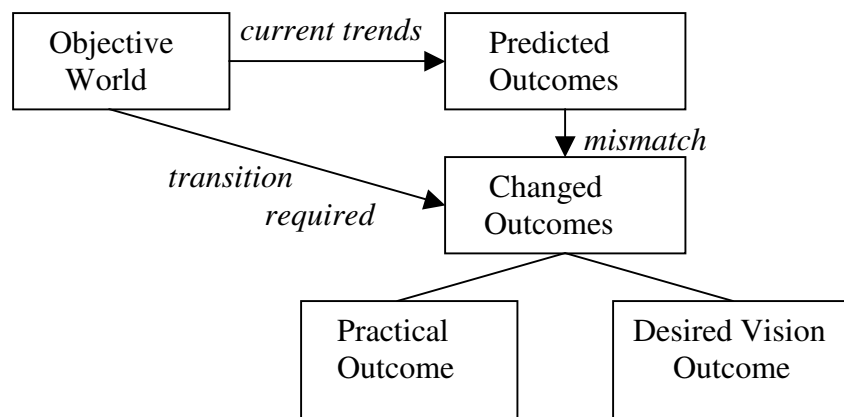
Energy Descent and Resilience Action Plan (EDRAP) Outline

January 27th 2009

This outline local Energy Descent and Resilience Action Plan (EDRAP) for Brighton & Hove and the surrounding area is our attempt at setting out how we could make the transition from a high energy consumption city to a low energy one – in a community response to climate change and oil dependency which will help us all move to a more sustainable future and better quality of life. The plan covers the period up to 2020. It may be thought of as part of the following *nested set* of ‘EDRAP’s.

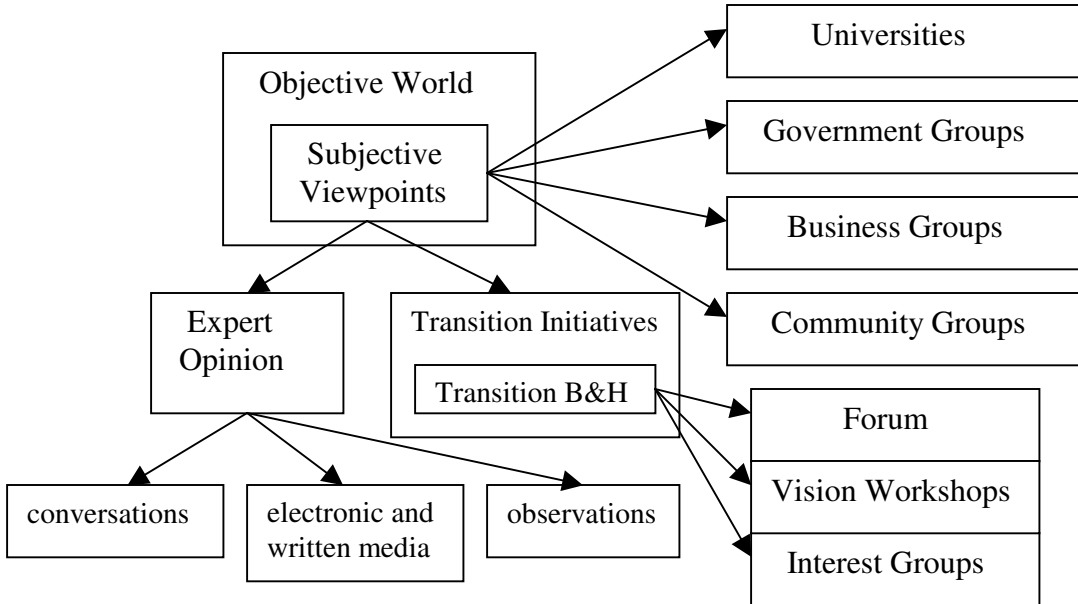


A schematic overview of the scientific outlook of some of us may be represented by



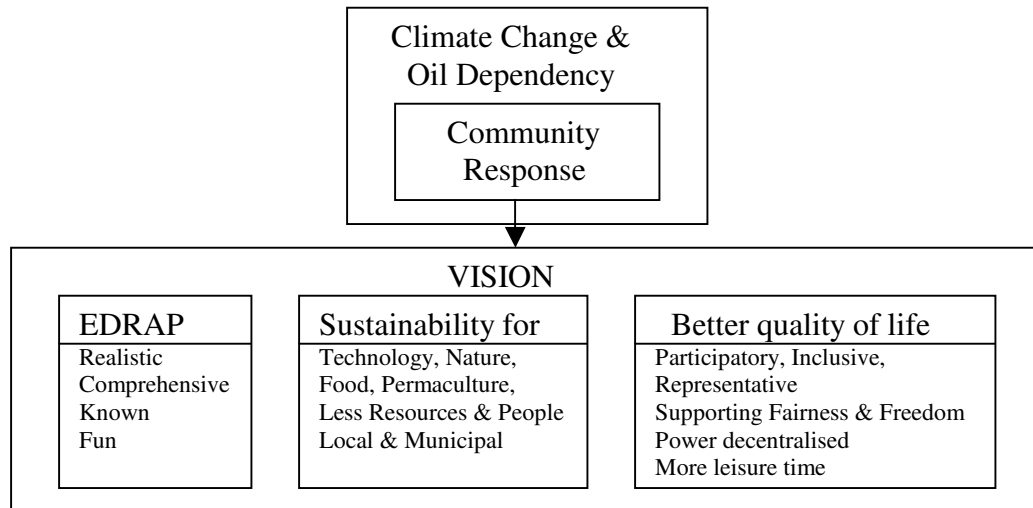
It is our intention to refine the plan’s structure and its contents over the next few months based on inputs from interested groups and individuals. We will also explore how we can best manage the development of the plan and its associated supporting document, etc. in an inclusive and transparent way. The *technical* and *social processes* of developing the plan are probably as important as the plan itself.

The technical processes of *consultation* may be illustrated as follows.



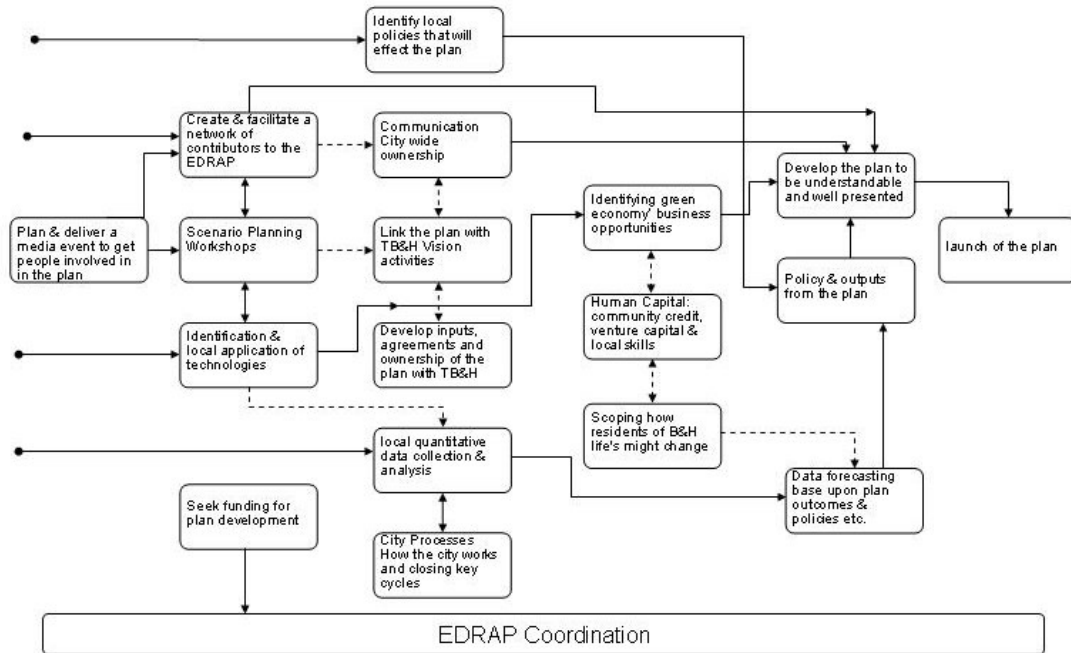
This technical process has included specifying some of the main *aims* of the EDRAP, and is designed to develop the *narrative we wish to tell* or *conclusions* of the EDRAP consultation, and to itemise the *detailed programme* of the EDRAP.

Social processes – workshops – incorporating *visions of a community response* to climate change and oil dependency have taken place and may perhaps be illustrated as follows.



To help towards the merging of technical and social processes, it has been suggested that each Transition B&H Interest Group should be visited by EDRAP members to gauge responses, help developments further, and to inform Interest Group members of the EDRAP narrative and the programme as developed so far. The entire developmental processes are encapsulated in the next diagram.

EDRAP Process Diagram Draft 1



1. Assumptions about the world between now and 2020.

Arising from research and discussions, we assume

- Peak oil has happened or is about to happen (IEA study).
- The emergence of an *energy gap* – where fossil fuels are declining and renewables are not being introduced fast enough to replace them – is highly likely globally and in the UK.
- Climate change is so far exceeding some of the worst scenarios of the IPCC Fourth Assessment Report.
- To avoid disastrous climate change, it is necessary to reduce CO₂ emissions and that of greenhouse gases and absorb CO₂ in the atmosphere.
- It is possible to make the necessary changes to adapt and to prevent the situation from worsening further. This is technically possible and the political will and inertia can be turned round.

2. Principles (*in italics*).

- To be *informed by the best science* available on climate change, resource depletion and the available technology.
- To *involve* experts and local communities in the development of the EDRAP.
- To develop a *shared purpose and informed intention* arising from the EDRAP.
- A strategy to deal with the consequences of the above should incorporate the *precautionary principle* of being adequate to cope with unfavourable scenarios.
- *Proximity* of supply should be encouraged where possible to develop self-sufficiency.
- To develop *sustainability* – where we can continue to use the same processes for the foreseeable future without causing any significant change to the environment.

- To encourage *resilience* – the ability to withstand, recover from and adapt to shocks.

3. Core Ideas.

- Renewables, energy efficiency and energy savings are essential.
- To develop and implement carbon sinks.
- That the economy will be very impacted by peak oil and gas.

4. The EDRAP Overview.

Aims of the project.

- To inform and stimulate action, in facilitating the roll-out of implementations of these plans by Transition Brighton & Hove, local and national businesses, local government and local communities.
- To be prepared for climate change and peak oil and gas.
- To be prepared for crisis (resilience).
- To transition from a high energy to a low energy economy, in reducing energy consumption/capita.
- To increase the efficiency of energy generation.
- To aim for an economy capable of coping with zero growth.
- To increase the localisation of economic activity and develop self-sufficiency.
- To develop renewable energy.
- To improve CO₂ absorption (CO₂ sinks).
- To introduce economic and other mechanisms that restrict CO₂ emissions.
- To reduce the need for transport.
- To support a shared purpose towards these issues based on an informed intent by residents and visitors.
- To understand how energy affects every type of activity in Brighton & Hove.
- To reduce our ecological footprint.
- To supply information, advice and possibly skills to all sectors of the city, including the local authority, local businesses, local community groups, and individuals.
- To focus on the things we can change.
- To be a significant input to local authority plans.
- To become part of a local, national and global dialogue to develop strategies and action on climate change, peak oil and gas, and the elimination of power from coal if it is without carbon capture and disposal.
- To study how central and local government policies affect the capacity of a city to deal with energy issues.
- To set an example of ourselves, being a trendsetter, pilot or policy experiment.
- To propose new local institutions and delivery vehicles to manage local change.

Implementations.

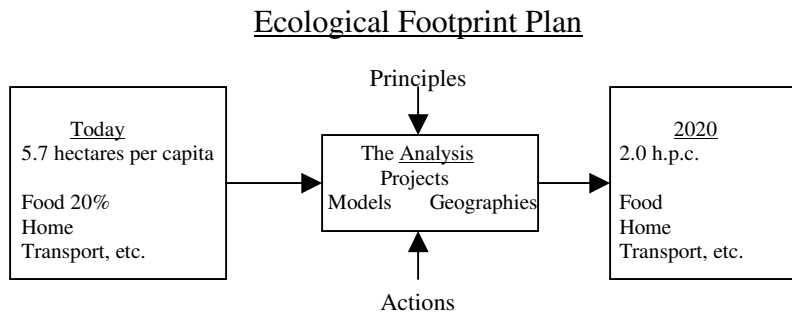
Included in the process of implementation are the Transition B&H Interest Groups. Each subgroup is developing and needs to develop further its own section, its assessment of the current situation and its programme. These sections and programmes where available will be itemised later in this document. The Interest Groups cover the following areas.

- Buildings.
- EDRAP.
- Energy.
- Food.
- Heart & Soul
- Local Government Liaison.
- Livelihoods 2020.
- Neighbourhood Groups.
- Textiles.
- Transport.
- Waste.

Monitoring.

- To monitor projects once implemented, in order to maintain and improve outcomes.
- To obtain information necessary for the development of projects.
- To determine the ecological footprint of Brighton & Hove, on the grounds that “what gets measured gets attention” – this can be both positive and negative – things that are not easily measured can get missed, and also it is possible to draw attention to something just by measuring it. Some of these studies will use information from the Stockholm Environmental Agency (based in York). This footprint will consist of
 - Energy usage by:
 - Source
 - Demand
 - Origin
 - Carbon emissions per capita & per source
 - Standard of living using QOS (quality of life) indicators – how to measure?
 - Index?
 - Self reporting
 - Number of people involved by organisation type
 - Percentage of renewable:
 - Over total
 - Over potential
 - Number of zero emissions:
 - Vehicles
 - Buildings
 - Waste amount and usage
 - Identifying the material cycles

- Amount of carbon sinks
- Water & food availability
- Sea level
- Miles travelled per capita by engine vehicles using oil.
- Resilience indicator using:
 $R = A \times T$
 = gap (between the current situation and the future shock situation)
 $R = \text{Resilience}$
 $A = \text{Adaptation (rate at which it is possible to change)}$
 $T = \text{Time}$



5. Energy.

5.1 Research

- Current situation
 - Calculations of energy intensity for electricity, heating and fuels.
- Renewables resource assessment
 - Biomass
 - Wind
 - Solar photovoltaic
 - Solar thermal
 - Hydro
 - Heat pumps
 - Ground source
 - Air source
- Supply and demand matching
- Sources of information: Government statistics, published studies
- Timescale: March 2009
- Implementer: Includes Transition Brighton and Hove.

5.2 Generation of energy

- Power Stations
 - Aim: Brighton & Hove 100% renewable power (c200MW) by 2020
 - Three wind turbines on the south side of Aldrington Basin

- Wind turbines on South Downs
- Offshore wind/tidal/wave generators, landing their power at Shoreham power station busbars, or at Palace pier
- CHP/District Heating scheme from Shoreham power station to supply hot water to every building in Brighton & Hove (~400MW)

5.3 Resilience (Municipal)

- Municipal power stations to keep the lights on in Brighton & Hove (~50MW renewable by 2020). Model: Woking.
- Diesel standby generators.
- Photovoltaic panels on roofs of BHCC owned buildings, including schools.
- Wind turbines on council owned land, allotments, farms, Sheepcote Valley.

5.4 Domestic and commercial uses of energy

- Increasing energy efficiency in domestic and commercial premises
 - Electricity
 - Voltage optimisation
 - Using off peak electricity
 - Reducing standby
 - Electricity metering.
 - Heating
- Energy generation for domestic and commercial premises
 - Electricity
 - Solar photovoltaic panels on roofs of corporate and private buildings
 - Wind
 - Heating
 - Solar thermal
 - Combined Heat and Power (CHP)
 - Possible projects:
 - Deals with waste companies
 - Examples to learn from:
 - Timescale:
 - Cost: Not currently profitable to manufacture
 - Implementer:
 - Heat pumps

5.5 Industrial uses of energy

- Increasing energy efficiency in industrial sites
- Energy generation for industrial sites
 - Electricity
 - Wind

- Heating
- Other energy sources

6 Transport.

6.1 Increasing energy efficiency in transport

- To improve efficiency in vehicles

To encourage greater use of energy efficient public transport by measures such as -

- Improved bus and rail services
- New initiatives including rapid transit
- Better integration of different modes
- Analysis of routes and desire lines
- Better information

6.2 Encourage carbon-free transport options

To encourage carbon-free transport such as walking and cycling.

Improvements could include -

- Better facilities for pedestrians including increased priority and ease of use at road crossings
- Increase of shared use of streets with higher pedestrian and cycling priority
- Analysis of urban walking and cycling routes
- More cycle lanes better enforced with restrictions on cycling in pedestrian areas

6.3 Carbon emissions

To bring about a reduction in carbon emissions by the use of vehicles powered by fossil fuels. This would include consideration of -

- Parking restrictions/ charges
- Restricted access, shared road use and speed restrictions
- Congestion charging/ road pricing
- Investigating alternative technology (bio-fuels, hybrid vehicles, fuel cells)
- Work with Roger French of the Go Ahead bus company to plan the transition to 100% renewably powered buses by 2020, driven by compressed air, electric batteries, hydrogen, flywheels, etc.
- Greater sharing of vehicle use including car clubs, commercial deliveries.
- To increase efficiency in transport infrastructure, such as streetlights and traffic lights

6.4 Proximity

To ensure new developments consider urban design measures which encourage low energy transport. These should include -

- Relatively high densities
- Restricted provision for private cars
- Consideration of the needs of walking and cycling including safe routes.
- Location of employment close to housing and encouragement of home working

7 Local Government Liaison.

7.1 Knowledge - informing ourselves

Knowledge – to make ourselves aware of:

- [The Sustainable Communities Act](#) and the duties it imposes. See [Sustainable Communities Act 2007: A Guide](#) - published February 2008.
- Council Strategies (The progress of the Council's [Sustainability Strategy](#) - soon to be updated. Note the Key areas.
- The work of the Council's [Sustainability Commission](#).
- The areas of expertise within The Council's [Sustainability Team](#).
- Initiatives involving both Brighton and Hove City Council and other B & H groups with interests in Sustainability, especially the [2020 Community \(Local Strategic\) Partnership](#) (its 8 priority areas), the [One Brighton Partnership](#) at New England Quarter, and [Brighton & Hove Food Partnership](#).
- Council Planning Policies relevant to [Climate Change](#) and Peak Oil: [Sustainability Appraisals](#) - These documents (some will be up for public consultation) will form an important part in the Council's [Local Development Framework](#), which is being phased in to replace [The Brighton and Hove Local Plan](#). Certain adopted and emerging [Supplementary Planning Documents](#) are also relevant to TB&H e.g. the proposed [SPD on Sustainable Building Design](#) on which Transition Brighton & Hove commented.

7.2 Information

Information - relevant to &/or requested by T B&H Groups

- Information on the above to assist TB&H in maximizing its impact through involvement with Local Government and Council-supported initiatives where the activities, strategies and policies are relevant to TB&H's aims RE Climate Change, oil dependency, local resilience etc. We will provide this through websites or briefings when we are requested to do so by Interest or Neighbourhood Groups.

7.3 Dialogue with the Council on behalf of TB&H Groups

- Dialogue with the Council on behalf of Transition B&H to influence and progress policies and moves towards a low energy

sustainable future, and to work with the Council where appropriate to further this aim.

- To assist and encourage TB&H Groups to do the same through suggested initiatives; encouraging involvement in policy consultations & monitoring development proposals in Brighton and Hove.
- To assist the EDRAP Group in the production of a Municipal EDRAP, in particular to
 - Develop a Municipal Emergency Plan.

7.4 Monitoring the Press and the Media

- Monitoring the Press and Media – note: Sarah Lewis, Editor of [Rocks Magazine](#) has offered a workshop & access to the Rocks Magazine Blog.

7.5 Reporting and Accountability

Reporting and Accountability – good collaborative arrangements with the Forum and all TB&H Groups

- We will seek good collaborative arrangements with the Forum, Interest, Neighbourhood and other Liaison Groups to ensure that all we do is relevant to and compatible with Transition Brighton & Hove's core purpose.
- We would welcome feedback on the usefulness of any briefings or other type of information offered by members of our Group to other TB&H Groups.
- We can also give updates on relevant events and initiatives within the Council to general Transition meetings.

8 Food.

8.1 Relocalisation

- Strengthen the resilience of production and delivery of food
- Develop a relocalised food infrastructure
- Promote better utilisation of existing allotments, and create more allotment space.
- Encourage individual and community action on growing our own food.
- Permaculture
- Widening the variety of local foods produced

8.2 Climate change

- Bio char
- Tree planting

9 Waste.

9.1 Research

- Current situation
- Resource assessment
 - Potential for waste gasification
 - Potential for second generation biofuels

9.2 Disposal

- Cancel the Veolia contract for the incinerator at Newhaven, as its technology is out of date.
- Model: towns in the USA. Establish bioreactors (plasma or depolymerisation) on BHCC land (e.g. Sheepcote Valley, Hangleton, Leighton Rd).

9.3 Resilience

- Municipal storage areas for recycled materials – wood, coal, petrol (like Leighton Rd Hove) which are sold to the public when shops have run out, and rationed.

10 Buildings.

10.1 Research

- Alternative Technology Centre (ATC) at Sheepcote Valley on the model of the ATC at Machynlleth, N. Wales, as a show place for sustainable living.
- Remove barriers to residents wanting to install renewable solar panels on their roofs.

11 Business & Economics.

11.1 Resilience

- BHCC to establish a Brighton & Hove Bank or Credit Union, and issue BHCC bonds in it, to invest in projects like an ATC.