**25-Year Environment Plan - submission from AECB**

**(1) Ambition and Reporting**

**To what extent does the Plan set a sufficiently ambitious agenda across Government? How far do the objectives, targets and indicators set out in the plan reflect a higher level of ambition than existing targets (including European Union targets and the Sustainable Development Goals) and current performance? Are there any major gaps?**

The AECB is involved with all aspects of reduced building environmental impact. We are pleased that the Plan lists the benefits of using wood in construction and acknowledges that there are serious emissions from large wood combustion plant. But the Plan has serious omissions; see below.

AECB is concerned that pertinent topics to reducing buildings' impact on the environment are not mentioned once in a 150 page plan. They include:

* energy efficiency
* thermal insulation
* draughtproofing
* low-CO2 heat, e.g. this example of a solar-fed district heating technology heats 50-60% of four Danish towns <http://www.solarthermalworld.org/companies/vojens-district> but the UK absence of many low-temperature heat networks limits the near-term potential; by contrast, Denmark has a 100% renewable heat target by 2035 <http://www.solarge.org/index.php?id=1235&>

Buildings account for over 40% of UK CO2 emissions. So it is unexpected to see so little coverage of buildings in about 160 pp. While the above are acknowledged elsewhere in various government documents, e.g. Heat Network Investment Project, earlier work on Green Deal, we are unaware that there was any meaningful consultation on this. Integrated thinking is particularly absent.

What would success or failure look like for the Plan? To what extent will the Government’s proposals for reporting on the Plan allow for proper scrutiny of its performance against its objectives? Are the commitments to legislative action in the Plan sufficient to ensure it will endure beyond the current Parliament?

Success/failure might involve (in)ability to meet the 2008 Climate Change Act (CCA). Unfortunately, we see before us loopholes, anomalies and even examples of gaming the system. These need to be addressed before the policies we have can be fit for purpose.

**Wildlife**

The impact of the now widespread use of Breathable Building Membranes for new and renewed roofing work is resulting in significant numbers of deaths of bats across the UK. AECB is working closely with its members and Dr Stacey Waring, ex Reading University, to progress awareness of and solutions to, this issue, Dr Waring is advising Natural England and The Bat Conservation Trust, however urgent action is required. We are happy to advise Government further on this issue.

**(2) Implementation**

**The Plan sets out a natural capital-led approach and a principle of “environmental net gain” when undertaking development. What are the risks and benefits of adopting these approaches? What steps need to be taken during development and implementation to ensure they lead to positive environmental outcomes, especially in respect of biodiversity?**

'Natural capital' seems to be a new name for 'sustainable development', i.e. as per the 1992 Earth Summit in Rio de Janeiro. By coincidence, that event was held about 25 years ago.

Reading the 'warm words' in this plan, we are concerned that they are in danger of eclipsing action. AECB's previous evidence to select committee enquiries has highlighted areas where the UK is not very successful in reducing the environmental impact of buildings and other sectors of the economy.

The Plan cites the Forestry Commission's Carbon Code, at <https://www.forestry.gov.uk/carboncode>, as a way for businesses to obtain carbon credits. The Carbon Code appears to allow double counting. This happened in another field, i.e. with 'green electricity tariffs' in around 2005.

The UK government counts wood as a zero-carbon fuel on the basis that trees which are cut down regrow over time and absorb CO2. There are landscapes where this does not happen, both in the UK and abroad. Moreover, as the last paragraph has implied, the loss of trees in one location is not being counted as a 'carbon debit', yet the planting of trees at another location is counted as a 'credit'.

We recommended in 2012 [[1]](#endnote-1) that the government use greenhouse gas (GHG) accounting methods which enable it to track separately, year by year, the gross GHG emissions, sequestration and net emissions, i.e. in a particular year

* net emissions = gross emissions minus sequestration

The net emissions calculated as above may be either positive i.e. bad, or negative, i.e. good.

However, this has not apparently happened. As a result, the UK cannot say with certainty whether emissions from UK economic activity are stable or falling because the procedures allowed pose risks of double counting or may exclude some 'debits' by drawing boundaries in a misleading way.

The document seems to embrace the view that 'the market will provide'. Although the market can be a very good 'servant', in recent years government has often treated it as 'master'. This has adverse consequences if the limitations of markets are not recognised, e.g. they tend to extreme short-termism, they are unable to work if any actors lack full information, existing players can fairly easily devise methods to keep out unwanted new entrants, etc, etc.

On 'natural capital', we are struck by the small size of the sums quoted in relation to the size of the UK economy. We wonder how many individuals not having 'environmentalist' values would change their lifestyle to secure a sum of £2.1 billion per year, i.e. the stated extra benefits from UK woodland, in the context of a UK GDP of £1,600 billion per year. It is a 0.125% saving.

Few individuals act to save money in the 'rational' way that economists predict. Individuals who own SMEs normally find that an SME that seeks to survive and prosper has to apply totally different financial criteria, i.e. far more short term, than those the public sector is in principle able to use.

We think that a 'natural capital' approach is likely to be ineffective unless it is merely the new phrase for 'sustainable development'. If it ignores approaches elsewhere which have actually worked, such as California's least-cost planning on electricity use and Denmark's least-cost planning on heat supply, it will be less successful than it could otherwise be. This is not clear.

**To what extent does the Plan set out effective delivery mechanisms to ensure DEFRA, other Government departments and public bodies have the resources and responsibilities to implement it? Where should the Government seek agreement with the Devolved Institutions to ensure a common approach across the UK?**

DEFRA has no responsibility for Building Regulations or energy-related and other infrastructure. Successive governments seem to have struggled with where to put responsibility for energy and the environment.

Integrating the two was apparently not regarded as vital – however, integration *is* vital. The UK had a Department of Energy from 1974 to 1992 and a Dept. for Energy and Climate Change from 2008 to 2016. For the other 18 years, no dedicated government department was in charge of energy policy.

Environmental policy went from the Department of the Environment to the Dept. of Environment Transport and the Regions and to the Dept. of Environment, Farming and Rural Affairs. In 1995, the Environment Agency (EA) was formed. The EA does not have specific responsibility for air pollution but it does for water pollution.

Over all the period, responsibility for energy and the environment has been split between different departments. In 2018, responsibility for building heating systems is split four ways:

* DEFRA deals with their air pollution
* BEIS deals with the industries that supply their energy
* DCLG sets Building Regulations which partly determine the heating systems going into new buildings (and the level of fabric performance that dictates the level of winter heat demand to be serviced)
* OFGEM administers the domestic Renewable Heat Incentive via which the government subsidises some heating systems
* A branch of OFGEM administers the Energy Company Obligation scheme and approved measures under that scheme for emissions reductions and insulation and comfort improvements in existing dwellings: <https://www.ofgem.gov.uk/environmental-programmes/eco/contacts-guidance-and-resources/eco-guidance>

As this illustrates, clearer thinking is needed in the allocation of goals and the split of responsibilities between government departments and independent agencies.

**(4) Implementation**

**The Government has proposed an independent statutory body to “champion and uphold environmental standards as we leave the European Union”. What role, legal basis and powers will it need to ensure the Government fulfils its environmental obligations and responsibilities? How do these compare to the role of the European Institutions in the existing arrangements? What standard would it have to meet to be “world leading”?**

To be regarded as 'world leading', UK agencies would have to be as well-resourced as California's Environmental Protection Agency or Air Resources Board.

We cannot follow why the UK created a body called the *Environment* Agency whose only or main remit is water resources. The EA has been criticised too for not being independent enough of government.

To respond to criticisms, a new body would need to cover all resources including energy. It would need to be more independent of government.

We note that bodies such as the Institute for Fiscal Studies and Office for Budget Responsibility produce regular critiques of government economic and social policy. But there appears to be no well-resourced charitable or statutory body which makes the same authoritative analyses of government environmental policy.

There are of course non-governmental bodies which regularly comment on government policy. But their campaigning is heavily driven by funding constraints, members' views and a need to secure media coverage to keep their activities in the public eye.

* The Plan sets out a series of objectives and the Government says it will consult on a policy statement on environmental principles to underpin policy-making after leaving the European Union. What principles should the Government include as part of that consultation? What legislation might be needed?

The UK would do well to

* adopt future EU Environmental Directives as the default legislation, i.e. to mirror them
* agree to the principle that UK environmental legislation will not be less bold than Directive(s) provide(s) but that on occasions it may be bolder.

On the second point, being outside the EU permits higher standards. Two examples are Switzerland and California.

California is of course within the USA. But legal proceedings with respect to the US constitution and its provisions for 'states' rights' have allowed it on occasion to set higher standards than the federal government. Under federal law, other US states can now either emulate the Californian standard or the federal one.

**(5) Technical Accuracy**

The document is full of inaccuracies and failures to draw important insights. The government could have benefited from asking expert(s) to check it before publishing.

On p. 20 of the Plan, we read:

Individual small choices – which coffee to buy and in which kind of cup; whether to drive to work or take the train – add up to a big impact on the environment.

As DECC's last Chief Scientist [[2]](#endnote-2) pointed out, tiny savings have small impacts. He was referring to the electricity saved by unplugging mobile telephone chargers, but the point applies widely. The correct procedure is marginal cost-benefit analysis, but it usually pays to start with the largest numbers first.

For instance, in the UK economy, here are two widely different numbers. Peak UK natural gas consumption, mostly for heating buildings, is thought to be 200 million kilowatts. If we assume TV standby power has now been reduced to 0.1 watts per set (0.1 W), the UK-wide consumption might be of the order of 3 million watts (three thousand kilowatts).

200 million is *seventy thousand* times higher than three thousand. So tackling the gas usage for urban space and water heating comes rather before further cuts in TV standby power, although a detailed study should consider both.

The Plan says on p. 24:

Meeting legally binding targets to reduce emissions of five damaging air pollutants. This should halve the effects of air pollution on health by 2030.

Some legally binding targets were supposed to have been met by 2010. Hence the legal action against the government by the EU and Client Earth. Since when has delay in meeting the law of the land been a virtue?

The Plan says on p. 67:

The proliferation of invasive non-native species can also prompt unwelcome changes in the wider ecosystem that climate change might further exacerbate.

This is correct. But England and Wales are warming at a rate of some 4 K per century. The south-eastern and eastern regions may warm faster than this average. Some tree planting could be unsuccessful if it does not take the warming rate into account.

A 4-6 degK rise in mean ambient temperature over a tree's life is tantamount to moving a tree from Leeds to Lyon or Bristol to Bordeaux. [[3]](#endnote-3) The same trees and plants do not flourish in Lyons as in Leeds.

Consequently, we may be obliged to plant some 'non-native' trees, both as part of urban landscaping schemes and in new woodland, to be more confident that the new tree cover will survive and flourish over the next 200 years. In this context, opposition to 'non-native' trees seems illogical, given the arbitrary definition of what is 'native' and what is not.

There seems to be excessive stress on northern tree planting. We do not mean that too many trees are proposed in the 'M62 corridor'. But it could be logical to aim to raise tree cover in all UK regions to the existing level in the far south-east, [[4]](#endnote-4) i.e. from around 8% to 14%, if not to 15-20%. While 'M62 corridor' sounds impressive, it is probably a smaller land area than the area of well-wooded countryside in the south-east, between the Weald and the New Forest.

The Plan says on p. 94:

Since 2000 we have diverted significant quantities of residual waste - i.e. waste that cannot be reused or recycled - from landfill through the development of energy from waste (EfW) facilities.

There are now suggestions that rather than incinerate it might be more beneficial to send unrecycleable plastics to landfill and 'mine' the resource after the UK clarifies its plastics policy. Given the difference in energy value, i.e. exergy, between chemical and thermal energy, the optimal outcome could possibly be to reconvert mined materials to feedstocks rather than the costly process of sorting hundreds of polymers from each other. Thermosetting polymers cannot be reused anyway.

The Plan says on p. 99:

To tackle air pollution we are already taking action to target both businesses and individuals. We are bringing forward legislation to cut industrial emissions from medium combustion plants and generators. At present, these are significant but largely unregulated sources of air pollution. We are also working with Local Authorities ... to advise ... impact of the domestic burning of wood and house coal – which together account for nearly 40% of total emissions of harmful particulates that can cause heart and lung damage. In September 2017, the ‘ready to burn’ wood certification scheme was launched. This industry initiative supported by DEFRA persuades people to move away from wet, unseasoned wood to ‘ready to burn’ wood, which can halve emissions from this source.

The above paragraph offers little practical help. A 2015 *British Medical Journal* article stated that UK-wide wood combustion emits 2.4 times as many PM-2.5 particles as diesel engines. [[5]](#endnote-5) It is hard to reconcile

* wood : diesel emissions are in a ratio of 2.4:1

with

* wood accounts for 40% of emissions.

Which is correct? *If* both statements are true, diesel engines would account for only 40/2.4 = 17% of UK PM-2.5 emissions. A 17% figure would imply that current policy is disproportionately focused on diesel emissions and lags behind on reducing particulate emissions from woodburning if wood counts for 40%.

Bear in mind that UK wood burning is not a 'zero-carbon' activity. GHG emissions from wood burning are also significant. They comprise for instance, the CO2 and the impact of the soot particles on the Arctic ice sheet.

The UK regulated the local burning of house coal in *1956*. Burning wood in small appliances emits comparable levels of PM-2.5s and carcinogens to small-scale burning of house coal in similar stoves. Should the Committee desire more information, we refer members to our October 2017 evidence to the joint enquiry into air pollution of the Health Committee and three other parliamentary committees: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/environment-food-and-rural-affairs-committee/joint-inquiry-into-improving-air-quality/written/73067.pdf>.

Cleaning up both these major sources:

* wood-burning appliances

and

* diesel vehicles

appears to differ in difficulty. The diesel vehicles having the highest PM-2.5 emissions appear on average to be 15-20 year old ones. These are at the end of their life and will probably soon be scrapped anyway. German cities recently won the legal right to ban them from urban use now, not just in two or three years' time.

By contrast, new woodstoves are likely to have PM-2.5 emissions as high as old woodstoves, especially given that the basic technology has only changed at a slow pace. Unlike diesel vehicles, which have changed radically since the advent of the first diesel private car in 1976, log-burning cast iron woodstoves appear incapable of being radically cleaned up. Has the government factored in the presumed long renewal cycle of woodstoves and the resulting 'locking in' of emissions 30-40 years into the future?

The principal step in cleaning up wood burning was the development of pellet boilers and stoves in the 20th.C. However, these do not make up a high percentage of woodstove installations. They need pellet fuel and cannot burn waste wood or logs.

If woodstoves continue to be installed, emissions will probably remain high. At this writing, a site in Hampshire has a PM-2.5 concentration of 66 μg/m3, i.e. three times the EU legal limit and six times the WHO limit. [[6]](#endnote-6)

The proposal to outlaw the use of wet or treated wood will only bring woodstove emissions closer to 'laboratory test' levels. The 'inconvenient truth' is that emissions in laboratory tests already relate to dry, clean, seasoned fuel. Even pellet stoves and boilers usually have emissions very much higher than the oil- or gas-fired appliances that the wood replaces. 'Very much higher' can mean thousands of times greater.

The Plan says on p. :

We will also work with industry and support Grown in Britain to increase the amount of home grown timber used in England in construction, creating a conveyor belt of locked-in carbon in our homes and buildings. A wide range of economic and environmental benefits will flow from commercial afforestation to meet the growing demand for timber.

Wooden construction can help to sequester C almost regardless of where in the world the wood came from. It is not only UK wood which is beneficial: www.katedeselincourt.co.uk/tag/carbon-sequestration/.

**Notes and References**

1. https://www.aecb.net/publications/less-is-more-energy-security-after-oil/ [↑](#endnote-ref-1)
2. The late Professor Sir David MacKay FRS. [↑](#endnote-ref-2)
3. Except that while temperatures rise solar radiation does not necessarily change significantly. [↑](#endnote-ref-3)
4. England's three most wooded counties are Surrey, Sussex and Hampshire. https://www.forestry.gov.uk/pdf/englandsmostwoodedregioninventory.pdf/$FILE/englandsmostwoodedregioninventory.pdf [↑](#endnote-ref-4)
5. http://www.bmj.com/content/350/bmj.h2757/rr-1. [↑](#endnote-ref-5)
6. https://aqicn.org/city/united-kingdom/chilbolton-observatory/. Site accessed on afternoon of on 22 February 2018. [↑](#endnote-ref-6)