

A RENEWABLE ENERGY TARGET FOR WEST BERKSHIRE

TV Energy has been requested by the Local Strategic Partnership to recommend a target for renewable energy contribution that West Berkshire (WB) might adopt. This based on a strategy paper completed in 2012 (a summary of findings is presented here).

The national target that WB might aspire to is 15% renewable energy primary generation by 2020. This would need to be achieved from a very low starting point of an estimated 2.5% contribution. However, this would be purely aspirational and from the analysis carried out in 2012 would seem far too high to be credible and highly unlikely to be achieved. Of course, the national target will include a significant contribution from off-shore generation of which wind energy will play the greatest role. As years go by, tidal, tidal stream and perhaps wave power might also contribute significantly.

WB is landlocked and **only on shore technologies are relevant**. Great advances are being made in the deployment of some appropriate technologies such as solar PV and thermal, heat pumps and increasingly biomass/ woodfuel. Government incentives remain (FIT, ROCs, RHI, Green Deal etc.) and the domestic renewable heat incentive has just been published and will, for example, pay 12.2p/kWh for biomass installations. **This must accelerate deployment for domestic retrofit and new developments.**

For green field sites, there remains considerable reluctance to embrace wind energy at scale (locally and politically), this would be a major component of achieving the higher targets set out in the report. A number of solar farms are being proposed and these seem more likely to make progress as they are less visually intrusive.

On the negative side also, is the likelihood that the Biofuels Directive will not be fully implemented. However, this is very hard to call and as a result, **it is recommended that a target be set without the inclusion of transport.**

For final consideration is the future trend in energy consumption. Over recent years there has been a steady reduction but this is not expected to continue as the economy moves out of recession. **Prudently, a figure that assumes zero or a modest further reduction in energy use should be used.**

Taking into account the above remarks, losing transport presents the range 2.5 – 11% contribution. Low or no change in consumption narrows the range to 3.6 – 8.5%.

An aggressive approach (business+ in the modeling) for domestic and other installations and a business as usual/ modest take on greenfield projects (so minimal wind and some solar farms for example) would reduce the 8.5% figure to nearer 7%.

On this basis, a target of a minimum of 7% should be set for renewable energy contribution by 2020 from local sources representing at least a doubling of output from that currently being achieved.

SUMMARY OF STRATEGY FINDINGS (2012)

West Berkshire (WB) is a landlocked, mainly rural constituency and has considerable potential for renewable energy production and use based on deployment of technologies generating power from the wind, sun, waste and plants (primarily trees). The accessible potential available from these renewable resources is of a similar order to the total primary energy needs of the area in terms of heating and power as well as transport and could theoretically make WB self-sufficient in energy.

Such a whole hearted transition to a 'low carbon economy' would create considerable socio-economic benefits for the community in terms of job and business creation, wealth creation and retention plus a range of social gains resulting from the availability of cheaper energy (e.g. the ability to address fuel poverty and energy affordability). However, in order to harness large amounts of these renewable resources there would by necessity be major implications for landscape, biodiversity, infrastructure and development. Such impacts are seen to be highly contentious in many instances and as such will severely constrain deployment in at least the short to medium term (up to 2020). Longer term with uncertainties in conventional fuel availability for heating (coal, oil, gas) and for power supply (coal, gas, nuclear) at acceptable prices, what is deemed unacceptable currently is likely to change and greater deployment might be expected as a result. Added to this long term, is the impact that climate change is likely to have causing unpredictable changes to our local environment, for example through an increase in wind speed and duration, solar gain and rainfall frequency and amounts of precipitation (affecting rivers and plant growth).

The rate and degree of these economic and environmental changes is hard to predict but will surely influence local people and social attitudes to beneficial change to ameliorate these impacts as much as possible. The interaction with the planning and development policies of West Berkshire Council (WBC) and the leadership shown by local councillors will become increasingly important in plotting the way ahead.

Ultimately, the main report carried out for the LSP in late 2012, sets out to illustrate what immediate potential exists to harness local renewable energy resources in WB and so to continue the move towards a more sustainable way of living and working for local people providing greater security of supply, affordability and lower emissions. The report shows how the technical potential is essentially illusory but through applying various constraints (physical environment, regulation and designations) a core of activity and 'accessible potential' exists that could catalyse real change in WB and potentially contribute up to 11% of primary energy by 2020 to be met from local renewable energy sources.

CONCLUSIONS

- A core of activity and ‘accessible potential’ exists that could catalyse real change in WB and potentially contribute up to **11% of primary energy by 2020** to be met from local renewable energy sources.
- Given the very many constraints on development, what then might realistically be achieved over the next 6 years in WB? Taking a pragmatic view there are seen to be three general areas where WB might seek to bring forward and influence renewable energy projects:
 1. Projects based on existing developments and housing (so ‘retrofit’ technology’)
 2. Projects based on planned housing and commercial developments/ infrastructure (so ‘new’ but integrated developments)
 3. Projects based on ‘greenfield’ sites (so completely ‘new’ developments)
- The first two areas are less likely to have a significant additional visual impact over and above that anticipated by the existing or planned developments and as such should be less controversial. *However, it is the third area where most untapped potential lies.* To note also that installing retrofit technology at scale can also be disruptive unless well planned and executed.
- The 6 years to 2020 will pass quickly and hence if significant impact is to be achieved to increase the amount of renewable energy used then urgent action is needed. The LSP including the council can only expect to have limited influence so where best to focus efforts bearing in mind the rapidly evolving national energy policy and fiscal incentives directed at supporting greater use of renewables.
- The following table sets out what might realistically be brought forward in WB by 2020. The following sections then go on to explore the numbers included in the table. Two scenarios are considered (1) a **Business as Usual** or BAU based on zero local intervention and allowing the market place to dictate progress – extrapolating largely from TV STATS figures and (2) a more progressive scenario based on LSP (including WB council) prioritisation called **Business+** delivering a x3 benefit in terms of GWh produced.
- The Table below explores the estimated levels of renewable energy contribution that might result from bringing forward the packages of projects outlined earlier. Note the significant impact that the national programme extending renewable energy use with transport fuels (based on the Biofuels Directive seeking 10% of fuels to be renewable by 2020) has on the totals. However, a note of caution when interpreting these figures since there is some debate as to whether this Directive will be fully enforced.

	Heat and Power without Transport	Heat and Power with Transport
Lowest consumption vs. progressive Business	11.00%	10.89%
Slower reduction of consumption vs. progressive business	10.00%	10.37%
No change in consumption vs. progressive Business	8.50%	9.26%
Lowest consumption vs. BAU	3.60%	6.76%
Slower reduction of consumption vs. BAU	3.25%	6.62%
No change in consumption vs. BAU	2.50%	6.27%

Table 1, Percentage of heat, power and transport consumption vs. BAU and Progressive business figures

