

Response to Kingsway stage two consultation – County and District Cllrs Henry Batchelor and Geoff Harvey

Poorly considered location and wasteful connection scheme

The proposed 15km 500MW rated overhead line is appallingly wasteful of financial, landscape, ecological, societal and skilled workforce resources. The cumulative impact it causes will damage public acceptance of essential future grid upgrades, and by consuming at least one new bay at the proposed Burwell South substation, potentially preclude other more necessary schemes that deliver far more in relation to the resource they consume.

The capacity factor for solar in the UK is approximately 10%. Thus, if considered without the BESS installation, this national scale pylon infrastructure would be used at only 10% of rated capacity. It would lay nearly dormant during the winter months and entirely unused on any night of the year. The addition of BESS does not improve much on 10%, because the primary BESS function is merely to store and delay dispatch from the solar array, hence BESS dispatched power represents part of the same appallingly low 10%. An average grid-services-only BESS achieves between 1-2 charge/discharge cycles per day, but when collocated with solar, 1 cycle per day would seem to be a reasonable assumption for the additionality of grid services activity as a stand-alone. For the proposed 350MWh capacity in a 2hour charge-discharge cycle, a further 6% ($=2 \times 350 / 24 \times 500$) can be added to the overall capacity factor, giving a derisory 16% total capacity factor (though see below, there is no compelling reason for the pylon run to carry the grid services element).

Kingsway have stated, without apology, that they did not reach out to those at local government bringing forward the LAEP (Local Area Energy Plan), nor to those in central government bringing forward the SSEP (Strategic Spatial Energy Plan). Indeed, we understand that Kingsway have made very little attempt to engage generally. This very significant piece of grid infrastructure has thus been designed in a strategic vacuum, ignorant of the rapidly increasing energy demands on the southern Cambridge arc. At 500MW capacity, if properly considered, unused capacity could have met the projected energy demands of the southern Cambridge arc for years to come. Instead, it ends in a field somewhere north of Balsham. Through cumulative impact concerns and blocking of limited connection capacity at Burwell, this poorly designed and hopelessly under-utilised infrastructure may well make future, necessary grid upgrades very difficult.

[We note that the entire scheme is contingent on a connection at Burwell which is not yet assured.]

BESS

The first point to note is that there is no compelling reason for the BESS to be positioned as proposed. The proposed new pylon connection is rated at 500MW which is also the installed capacity of the solar array, so the proposed new pylon run can always cope with the solar output. Therefore, we ask, has the alternative siting of the BESS at the Burwell end been properly assessed and compared to the proposed one in terms of groundwater risk, fire service response time, availability of any specialist fire equipment etc. - and where is the evidence for this? It is acknowledged that Burwell already hosts a number of BESS installations, but cumulative impact concerns must be weighed against risk to watercourses and aquifer.

From the site map, the area allocated for BESS and substation is roughly 250 metres x 200 metres, or 50,000 square metres. Given this includes an allocation for the substation, albeit the BESS is 350MWh (not 500MWh) the area allowed per 1MWh container is ~ 100 square metres. Each 1MWh

container of a standard 6x2.5metre size, when surrounded by the minimum 2.25-metre separation (4.5 metres unit to unit) that insurers require, would take 73.5 square metres, so the area depicted in the consultation proposal is not adequate, once maintenance and fire access avenues are included. The Fire Services, have concurred with this inadequacy in their communications with KCSA (Kingsway Community Action Group)

It might be expected that Kingsway will respond to this inadequacy by specifying 3.5MWh 12-metre-long containers, but we feel that would be ill-advised –

- The underlying cell technology will be the same.
- Any one container, once ignited, will burn until all the battery chemical energy is exhausted.
- A 3.5MWh based array therefore will produce 3.5 x the volume of toxic contaminant in the event of a fire (thermal runaway) following a single cell failure, compared to that caused by a single cell failure in a 1MWh based installation, appropriately spaced.

The 3rd party liabilities and clean-up cost, especially in view of the danger to watercourses and aquifer that the site implies, could be extremely expensive in the event of a fire. There is a moral hazard if, for example, the cost of environmental damage or aquifer contamination is ever allowed to fall on the public purse. Therefore, more detail (and ongoing transparency, in the event of approval) is needed on the terms of insurance and arrangements for ongoing oversight, to ensure that insurance is always more than adequate for all possible scenarios.

Array Area 'C'

Area 'C', we view as being entirely unsuitable and it does not deliver enough public benefit in carbon abatement to balance the harm. This area has been chosen for commercial expediency, not suitability. The difficulties that this area presents in terms of protecting the views over partially wooded and gently rolling landscape are insurmountable and the proposed shrinkage of arrays into the centres of naturally delineated areas only results in the despoiling of a large area of natural beauty for a modest gain in renewable energy. The intrusiveness of the area 'C' into the settlements of Weston Colville, Weston Green, West Wrattling, Willingham Green and Brinkley is in no way balanced by a public benefit. While we wait for details of the anticipated Land Use Framework, it seems impossible to imagine that area 'C' could score anything but very poorly indeed. The applicants have not demonstrated that there is **not** far more suitable land available elsewhere either locally or along the proposed 15km pylon run to Burwell.

General Comments

The proposal appears as a drunkard's walk, from a plausible starting point to an insupportable conclusion. When first presented to residents, before the informal consultation, the whole rationale presented for the location (though Kingsway later denied it) was based on the fact that Area 'A' lay under the existing Burwell – Stocking 400kV line. When this connection, for whatever reason, proved problematic, the hugely environmentally inefficient Area 'C', we suggest, was added to help to carry the capital cost of a hugely economically inefficient 500MW pylon run. Though we support large scale solar as a necessary component of a clean energy system, there is no need, only greed, in pushing for 500MW schemes, squeezed into an unsuitable locale, when schemes in the range 100 to 200 MW would capture all of the engineering economies of scale, make a substantial contribution to the 2030 target and yet not undermine public support for the energy transition. Either a major rethink is needed, or the project should be abandoned. We do not support the application in its current form.

Community benefits and our proposal to fund a bus service for affected villages.

Should the scheme go ahead, the unusually high cost to the community and environment should be fully recognised and should be benchmarked upon the £5000 per installed MW used in relation Scottish onshore wind, but it could take into account -

- Solar has a roughly 1:3 (lower) capacity factor compared to Scottish onshore wind, arguing for reduced multiplier on the 500MW nominal capacity of the scheme.
- Conversely, a substantial portion of income will come from BESS grid services, which are additional to the 500MW nominal solar capacity of the scheme, arguing for an increased multiplier.
- The environmental and community impact costs of an excessively long pylon run, since these are not accounted in the unadjusted multiplier on the installed capacity, likewise argue for increased multiplier.
- A Scottish onshore wind scheme of 500MW nominal capacity would provide £2.5million per annum to the community.

We consider the offered £300k per annum to be wholly inadequate and note the following -

- The scheme, including the pylon route and the highly intrusive and destructive nature, particularly of array area 'C', in total delivers far less compared to what it consumes compared to an exemplar scheme; thus, it demands a community benefit very much at the higher end of the best-practice range.
- We note that notwithstanding the wholly inadequate level of the £300k offered, there is no mention of indexation. At the UK current inflation rate of 3.8%, the value of £300k would be eroded to a derisory £67.5k per annum in real money terms by the end of the 40 lifetime of the project. Meanwhile the income to Kingsway is effectively indexed with rising electricity market prices in line with CPI.

Appropriate indexation is particularly important when planning community services. A longstanding concern for residents of the affected area has been the lack of comprehensive and sustainable transport link, especially to Cambridge (for schools, sixth form colleges and services) and to Linton for schools, GP and local services. The lack of a comprehensive service means that many pupils are excluded from after school activities and many elderly people must spend excessive time, sometimes in cold weather, to reach a GP appointment. Thus, we propose that Kingsway begin a serious engagement Cambridge and Peterborough Combined Authority (as transport authority) along with community engagement, to scope out a comprehensive service, and to commit to funding the service for the lifetime of the project. We further propose that to align with the stated aims of the project, this service should be based on fully electric drivetrains from the outset.