

# Feckenham Parish Council

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11<sup>th</sup> June 2023

Dear Paul

## **Objection to Planning Application 23/00417/FUL Construction of 200MW BESS Facility Land North of Astwood Lane Feckenham**

Feckenham Parish Council (FPC) objects to Immersa's Planning Application 23/00417 to construct a 200MW Battery Electrical Storage System (BESS) on Land North of Astwood Lane Feckenham.

### **Executive Summary**

Feckenham Parish Council objects to Planning Application 23/00417/FUL on the basis that:

1. This is the fourth Battery Electrical Storage System (BESS) planning application for Feckenham, and in terms of Context, FPC fears it will become the next step in a massive cumulative industrial development within protected Green Belt agricultural land.
2. There is documented evidence from National Grid that a further 2,201MW of so-called Renewable Energy and BESS schemes have been promised connections at the Feckenham Substation, which is acting as a magnet for planning applications. Applicants typically claim energy conservation credentials justifying "Very Special Circumstances", allowing them to breach Green Belt protection regulations. But there is a limit to how much Green Belt land can be sacrificed. FPC, say we have reached this limit with the consented 50MW Statkraft BESS facility, which is awaiting implementation.
3. Immersa claims their stand-alone BESS facility will save energy. Yet by Joule's Law, there is strong evidence that energy wastage in terms of cable transmission losses would be greater if their BESS was built in Feckenham, compared to the east coast of the UK or Scotland near the UK's biggest sources of renewable energy – namely wind farms. Hence there is no technical energy conservation case to justify "Very Special Circumstances". Thus, Green Belt regulations forbidding this BESS development apply.
4. National Grid has confirmed that electrical connection hardware up to 10m tall will need to be installed in the southwest corner of their development site. Otherwise, the 240 BESS units will be unable to connect to the grid. Immersa's planning statement shows this equipment on page 9 of its planning statement but omits it on page 6. They

also base all their expert reports on the basis that this essential connection equipment is absent, which is highly misleading. In truth, there will be a very substantial amount of industrial-scale electrical equipment visible from Astwood Lane and the surrounding countryside, which will also harm the setting of neighbouring Grade II Listed Mutton Hall Farm and Grade II\* Feckenham Church.

5. Immersa's Battery Safety Management Plan is completely non-compliant with the June 2023 recommendations in the National Fire Chief's Council Grid Scale BESS planning guidance for Fire and Rescue Services. As such, the development poses a very significant fire and safety risk to the locality – especially the neighbouring Primary School and National Grid substation.
6. Immersa's Transport Statement claims that construction of their 200MW BESS facility can be achieved with 3 HGV movements a day for 40 weeks, whereas Statkraft UK, in their 21/00195/FUL application for a 50MW BESS facility (a quarter the size), say construction will take 78 weeks with up to 57 HGV movements daily. FPC thinks Immersa's statement is not remotely credible and cannot be relied upon. We think this report has misled the Highways officer. Immersa has also omitted the fact that the only two access roads to the development site both have 7.5-ton weight restrictions, which has major implications for construction traffic and fire-appliance access.
7. The Lithium-ion Battery Units each have a lifetime of about 8 years and will need replacing up to five times during the 40-year duration of the BESS site. Each lorry-sized container weighs 19 tons. Thus the facility will generate about 22,800 tons of heavy-duty industrial waste, including 5,000 tons of toxic lithium chemicals. Immersa, whilst claiming they are contributing to Net-Zero, makes absolutely no mention of this massive toxic legacy. The planning officer has not accounted for this in reaching his recommendation to forego a full Environmental Impact Assessment, which is wrong.
8. FPC notes with surprise that Immersa does not give any technical facts or statistics whatever to support their bold assertion that this massive BESS facility will actually help with national energy conservation or the drive for Net-Zero. We suspect this scheme is not as "green as it seems" and challenge Immersa to produce the facts and figures to back up their bold claims.
9. FPC also identify a long list of other faults and inaccuracies in Immersa's scheme.
10. FPC reviews all the relevant planning considerations and the planning balance and concludes that the planning application should be refused.

## **Introduction**

Immersa has submitted the largest industrial planning application FPC has ever seen for a gigantic 200MW stand-alone BESS facility adjacent to National Grid's Feckenham substation. We acknowledge that the UK's future energy needs are changing rapidly, and that new power generation and storage technologies are evolving to match these requirements. Also, we realise that everybody wants to support "Green initiatives" by backing renewable and sustainable energy sources and by reducing electricity wastage. It is, therefore, very easy for Immersa to tap into these laudable ambitions by claiming that their planning application is the best way forward. Yet the real question we should all be asking is, "Does Immersa's plan actually do what it claims and offer the best solution for the nation's BESS energy storage requirements?" Feckenham is being asked to sacrifice 13 acres of its precious Green Belt setting in the name of this project, and it is all too easy to answer "Yes" to this question in our enthusiasm to support the environment; whilst forgetting to look at the important detail of

what this planning application will actually deliver. FPC has looked very carefully at Immersa's proposals and claims. We have consulted experts from National Grid and the local Fire and Rescue Service and done our own thorough technical research. We have also sought the opinion of local residents. At the end of this process, however, we are seriously concerned about Immersa's fanciful claim that Feckenham is the best location for a large stand-alone BESS facility. We think this bold conclusion is completely unjustifiable, and indeed, it is not supported by a proper consideration of the laws of physics – namely Joule's Law. Worse still, national regulatory controls and planning guidance have not kept pace with the rapid technological changes. FPC fears this mismatch could result in a poor planning decision with this current application. Overall, we are extremely worried about a number of specific issues in this proposed BESS application, not least the fact that Immersa has completely failed to include a proper evaluation of safety matters and fire risks and that their application is non-compliant with the latest recommendations detailed in the June 2023 Grid Scale BESS Planning Guidance for Fire and Rescue Services, written by the National Fire Chiefs Council. In short, we conclude that Immersa's planning application does not deserve to be granted planning permission because it is deeply flawed. We have prepared this document to explain how and why we have reached these important conclusions.

First, FPC will explain the context of this planning application - which consists of the recent local history of BESS applications and the extremely alarming "pipeline" of agreed connections that National Grid has already offered at their Feckenham substation.

## **Context**

There have been three previous BESS planning applications in Feckenham so far: -

1. 17/00453/FUL by Anesco was an 18MW BESS facility on agricultural land south of the B4090, near the Feckenham National Grid substation. Concerns about safety and noise risks and its adverse heritage impact on neighbouring Grade II\* Listed Shurnock Court were raised. The application was withdrawn before these issues were addressed.
2. 17/01445/FUL was for an 18.75MW BESS facility at Saltway Farm north of B4095. Astonishingly, this scheme was granted planning permission, even though the BESS containers were positioned extremely closely together in an existing part-enclosed steel agricultural building. Worryingly, the design specified that cattle livestock would be housed within the same building as the BESS units, separated only by very low concrete block walls. The Parish Council pointed out that these BESS containers would generate over 1MW of waste heat (enough to heat about 75 houses). Yet, there was no cooling or ventilation facility in the design. FPC was extremely concerned about the fire risk and potential harm to livestock. Fortunately, the facility was never built; however, it is a shocking indictment of the inadequacy of the planning system that this reckless planning application was ever approved.
3. 21/00195/FUL Statkraft's Greener Grid 50MW BESS facility was granted planning consent 26.1.22; construction has not yet begun.

National Grid has supplied FPC with the following list, dated 4th May 2023, detailing all agreed grid connections to their Feckenham substation, which includes Immersa's two 99.4MW connections, forming this planning application: –

Applicant	Purpose	Power in MW
IGP Solar	BESS & Solar	500
Statkraft	BESS Oct 2023	12
Statkraft	BESS Oct 2023	150
Innova	BESS & Solar	1025
Croome Airfield Solar	Solar	49
CS UK Holdings III	Solar	32
Aurapower UK 6	Solar	30
Reger8 SPV 1	Solar	40
JBM Solar	BESS & Solar	49
Littleton Pastures Solar	Solar	22
Elgin Energy Esco	Solar	25
Balance Power Projects Ltd	Gas	7.12
Auk wr11	Solar	21
Green Switch Capital Ltd	Solar	13
Immersa	BESS	99.4
Infra3 Ltd	Solar	25
Immersa	BESS	99.4
My Power	Solar	0.24
FRC Mercia Holdco 2	Gas Turbine	6.9
Centrica barry Ltd	BESS	20
		<b>Total (as of May 2023) = 2201.3MW</b>

Whilst this list does not guarantee that all these plans will come to fruition, FPC thinks Redditch Planning Department should thoroughly consider the **cumulative effect of all current possible energy developments near Feckenham** before determining this application. Though this may not be typical "planning practice", we point out that the Immersa application specifically claims that their BESS facility forms an essential part of the **continuum of the Nation's ongoing total energy strategy**. FPC know from our discussions with National Grid that there is an extensive list – shown above, totalling 2,201MW of BESS and Solar schemes, which have all been promised grid connections at Feckenham Substation. Doubtless, all these other developers will, in due course, claim similar qualifying credentials, i.e., that their facilities will also form essential parts of the Nation's ongoing energy plan. Furthermore, we all know Immersa's scheme follows Statkraft's consented BESS facility, which supports our view that this application is not an isolated entity. Thus, FPC believes that the inevitable cumulative development of renewable energy generation and storage facilities in Feckenham needs to be carefully assessed in the context of "Incremental Development", which will cause incremental and cumulative harm to the protected Green Belt land. Unfortunately, the Planning Officer has already neglected to consider this cumulative impact when making his screening decision on whether an Environmental Impact Assessment was needed, and this has had the unfortunate consequence that the only mechanism for a thorough environmental

assessment has been completely bypassed. FPC says it is wrong because this complex planning application is now being considered without this crucial detailed environmental background information. In due course, we intend to appeal the officer's unreasonable EIA screening decision to the Secretary of State and hope this decision will be reversed. Immersa has also failed to mention any of these other possible future energy developments anywhere in their planning application, which is both disingenuous and misleading. These omissions matter because they conceal the fact that the historic village of Feckenham and its unspoilt surrounding Green Belt agricultural land is now clearly at ongoing risk from a series of speculative and inappropriate industrial development planning applications, which, if granted, will cause progressive and incremental harm to the Green Belt land. FPC didn't want the Statkraft BESS development but has accepted that it will happen because planning consent has already been granted. However, moving forward, we firmly believe that, once Statkraft's 50MW facility has been built, Feckenham's contribution to Green Energy infrastructure will be complete and that any further local energy storage development would be unduly burdensome and represent further unjustified harm to the surrounding Green Belt land. We certainly do not accept that the already consented energy infrastructure should justify any further development locally, and if it does, then where will this justification end? Will the same argument that Immersa are now using, that Very Special Circumstances exist to overcome Green Belt harm, apply to all of the 2,201MW infrastructure listed in the table above? If so, we calculate that these so-called "essential energy schemes" could fill up approximately 11,500 acres of precious local agricultural land close to Feckenham with solar panels and BESS containers. This prospect is unconscionable and must be resisted at all costs. Enough is enough; only one BESS facility in Feckenham should be allowed, and that is the consented Statkraft scheme.

Thus, FPC says that Immersa's application is simply part of a "wild-west style gold rush" phenomenon, whereby a series of inexperienced small companies are lodging an avalanche of poorly thought out, speculative and incremental planning applications for land adjacent to National Grid electrical substations. Local farmers, seduced by the prospect of lucrative land rental agreements, are signing up for long-term contracts without understanding the technology or risks involved. Sadly, these inappropriate schemes, touted in the name of energy conservation, are also cropping up near other electrical substations all over the UK. National Grid acknowledges that they are not part of a coordinated and well-thought-out national energy strategy; they are simply opportunistic attempts to make a quick profit on the back of a planning system that is ill-equipped to resist. This is not good planning practice and manifestly fails to assist the drive for national energy conservation in a coordinated and efficient fashion. FPC has read that better policies, safer technology, and coordinated infrastructure plans are coming. We think it would be better to wait for these systemic improvements rather than accepting Immersa's poorly designed and ill-thought-out planning application on a first come, first served basis. This alarming background is the real context of this planning application. Next, we describe the technical faults in the planning application.

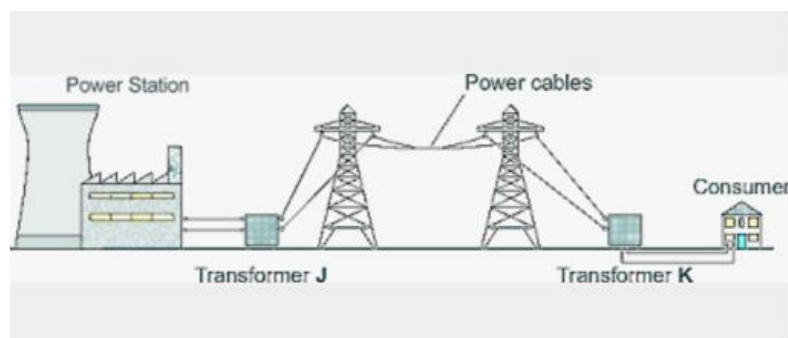
### **Where is the best place to site this particular BESS Facility – Consideration of the Joule Effect**

1. To answer this question, it is essential to understand the purpose and functioning of this particular BESS facility and the origin and destination of the energy it stores. Immersa is quite clear in their application that the function of this specific BESS facility

is purely for the stabilisation of national electricity supplies originating from power generation sources **DISTANT** from Feckenham; thus, it sources its energy from the National Grid at times of excess generation and returns it to the National Grid at times of shortage, thereby providing **NATIONAL** energy stabilisation. Importantly this facility, described in detail in Immersa's planning application, is **NOT** attached to (or dependant on) any local intermittent renewable energy generation (e.g. local solar farms). Thus, to avoid doubt, we repeat that all the energy stored and released from these particular 200MW BESS batteries arrives and leaves via the UK's National Grid infrastructure and is not dependent on any electricity generation facilities **NEAR** Feckenham. Indeed Immersa does not mention local renewable energy generation, such as local solar farms, anywhere in their planning specification. Immersa clearly explains all this in paragraphs 5.7 – 5.10 of their statement.

2. The fundamental law of physics that informs on the energy efficiency of the National Grid transmission and distribution networks is called "Joule's Law" – also known as the "Joule Effect". This law should be familiar to anyone with GCSE Physics or above, and we will try to explain it here as simply as possible, as below:

The diagram below represents how electricity was traditionally generated and transmitted in the UK.



Power was generated in power stations; these were connected to a transformer (J), which steps up the voltage and transmits via cables on pylons to another transformer (K), which steps down the voltage and distributes it to consumers.

Some of the energy produced by the power station is wasted as heat generated in the transformers and transmission cables (typically between 2 and 15% of the energy generated is wasted as heat according to the cable voltages and lengths), and the Joule's Law formula can calculate this energy wastage: -

$$P = I^2 R \times t$$

Where

P is the power lost as heat energy in Joules,

I is current in Amperes in the cables

R is the resistance in Ohms in the cables

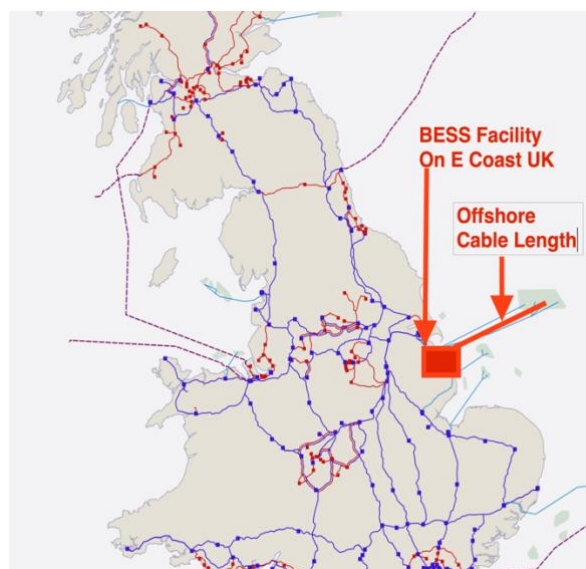
t is the time in seconds the current is allowed to flow

The electrical resistance of the cables is proportional to the length of the cable – i.e., a long cable wastes more energy than a short one. Thus, for instance, when assessing the heat loss for a cable measuring one kilometre and comparing it to a cable measuring one hundred kilometres in length (assuming both cables are carrying the same current for the same time), – the long cable will waste a hundred times more energy than the short one.

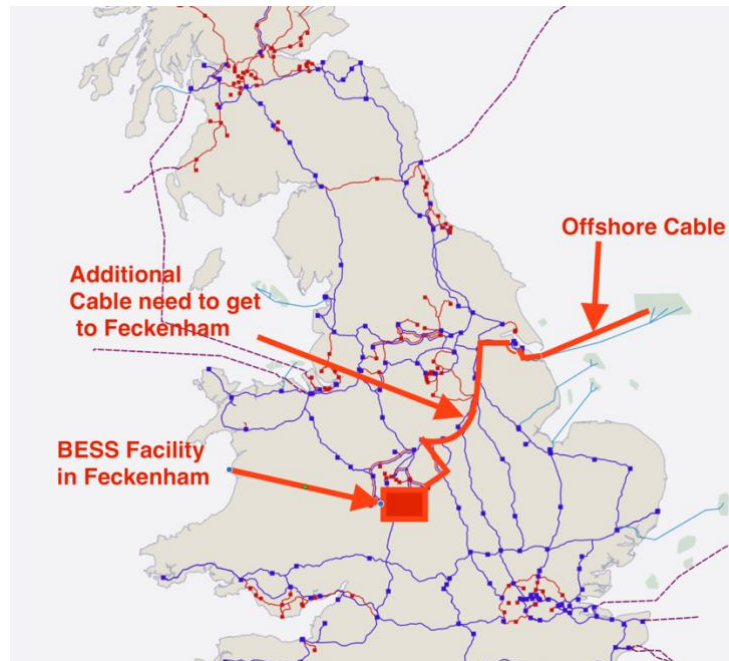
With the demise of fossil fuel power stations and the increasing reliance on renewable energy sources such as wind and solar, which only provide energy when the wind is blowing, or the sun is shining, there is a need for energy storage systems (BESS) to ensure continuity and stability of supply. When considering where to site BESS facilities for maximum efficiency, it is necessary to consider where this renewable energy is generated. For a single day in November 2022, National Grid posted figures showing that more than 20GW of electricity was produced by wind for the first time, representing over 70% of the Nation's electricity generated at that point in time. The source of this wind energy was almost exclusively from wind turbines sited in Scotland and off the East Coast of England. At the same time, solar energy produced only 4.4% of the Nation's power. So, the proportion of renewable energy production was heavily biased in favour of wind production, and the generation site was off the east coast of the UK and Scotland.

When considering Immersa's claim that Feckenham is the optimum site to locate their BESS facility "for the good of the Nation", it is necessary to consider how the choice of this location affects energy loss in the transmission cables, as calculated by Joule's Law. Consider the following two scenarios: - the first is where renewable energy generated in an offshore wind farm is stored at the waterside, and the second is where the same power is transmitted by the National Grid for storage at a BESS in Feckenham.

The Cable Route for the BESS Facility located near the Offshore Wind Generation Site, shown on the Map of the National Grid below, demonstrates a short cable linking the wind farm to a BESS facility on the mainland shore nearby and thence to the National Grid. The light green shaded areas offshore mark the location of the UK's wind farms. In this example, using Joule's Law, the energy wastage in the cable transmission only applies to the length of cable from the wind farm to the BESS facility on the nearby shore – some 30 miles of cable.



Compare this to a system where the same wind energy from the same wind farm is stored in a BESS facility in Feckenham – after it has been transported there through the National Grid. This Cable Route shown on the National Grid map reveals a much longer cable, perhaps measuring 90 miles in length. By considering Joule's Law again, the energy wastage in the longer 90-mile cable is **three times** the wastage in the shorter 30-mile cable – i.e., there is **three times** the energy wastage consequent upon locating the BESS facility in Feckenham rather than on the east coast of England close to the wind farm.



Given that up to 70% of the UK's energy is currently coming from offshore windfarms rather than renewable sources such as solar farms inshore or near Feckenham, by Joule's Law, it is evident that energy wastage from the UK's renewable energy sources will be subject to less energy wastage in transmission cables, if BESS stations are located near the windfarms – i.e., in this example on the East Coast of the UK.

Immersa's extravagant claim that it is in the national interest for energy conservation to site their BESS facility in Feckenham is clearly nonsense. When considering Joule's Law, the exact opposite conclusion predominates – it would disadvantage the national interest in terms of energy conservation and efficiency if Immersa's BESS were located in Feckenham. Instead, in the interest of national energy conservation, it should be sited near where the majority of renewable energy is (and will be) generated in the UK, namely at the nearest convenient location to the vast wind farms on the east coast of England and Scotland. This conclusion, based on the laws of physics, applies to all "Stand-Alone" BESS facilities in the UK and holds true for the foreseeable future in terms of the types of renewable energy sources in the UK and their current and future locations. We have checked these facts with National Grid's latest document describing how renewable energy provision is forecast to evolve up to 2050 in their guide – Future Energy Scenarios 2022- confirming our analysis. As detailed above, the current Immersa planning application is for a stand-alone BESS facility drawing its energy from the National Grid and not from locally sited renewable energy sources. Immersa claims that it is



in the interests of national energy conservation to locate their stand-alone BESS facility in Feckenham. This is simply not true according to Joule's Law.

FPC also note that in the case of the Statkraft facility, one of the arguments put forward for locating the BESS units in Feckenham was that the B17 zone in the West Midlands was mentioned in National Grid's Ten-Year Statement as an area specifically requiring power stabilisation and a confirmatory reference was quoted in this document. National Grid has told us that they have now withdrawn this document because they have resolved this specific need for local stabilisation. This fact reinforces FPC's assertion that there is no technical need for another stand-alone BESS facility in Feckenham.

Importantly Andrew Akani & Adam Pritchard, both Senior Technical Staff at National Grid, whom we consulted, agreed with our analysis, as stated above, when we met with them in May 2023 at the suggestion of John Pettigrew, National Grid's CEO. They offered no counterarguments whatsoever. Therefore, in summary, we say there is no technical justification to locate Immersa's BESS facility in Feckenham. Free-standing BESS facilities, such as this scheme, by Joules Law, should all be located as near as possible to the main UK national sources of renewable energy, which are known to be located mainly on the east coast of the UK and Scotland. In turn, this means that Immersa cannot claim very special circumstances justifying breaking Green Belt Policy because it is actually against the national interest in terms of energy conservation to locate their BESS in Feckenham. Thus, this ill-conceived planning application fails on technical grounds because it will waste energy unnecessarily.

### **Immersa's Plans are Incomplete and Misleading.**

FPC note that the Planning and Access Statement Immersa's planning application expressly excludes the empty rectangular parcel of land in the southwest corner of the development site shown below. However, confusingly, later in their design statement, they show this rectangular area to be fully occupied by a significant amount of sizeable electrical equipment – as below.



Figure 1 Location Plan



We have asked National Grid whether the BESS facility could operate without the equipment shown in the second picture above – and they are emphatic that the BESS facility could NOT function without it. National Grid says the "BUS BAR" system at their substation (which forms the electrical connection to the grid) is full. Immersa will necessarily have to install more connecting equipment – and this is the hardware shown in the second picture. National Grid showed us what this equipment would look like and pointed out that it can be up to 10 metres tall. We show a picture of this sort of equipment below, which, when installed, will be glaringly apparent from Astwood Lane.



FPC note that Immersa has misleadingly based its various expert reports (e.g., the landscape and views report) on the presumption that this land is unoccupied and that the site's visual impact will largely relate to the "low profile" Battery containers. Indeed, the Council's Conservation officer has based her opinion on this presumption, too, based on Immersa's statement. It is evident to us, from the sheer size and appearance of the necessary electrical equipment shown above, that there will be a very much greater adverse impact on the landscape and setting of nearby listed buildings than Immersa is acknowledging. We request that the Conservation Officer review her findings on this basis. This is another powerful example of why it is important to examine the cumulative impact of this development and not make a decision based on this planning application alone.

## **Fire and Safety Issues**

There have been nearly 100 documented serious fire and safety incidents worldwide with BESS facilities. It is known that Lithium-ion technology is subject to "thermal runaway" failure, where battery cells overheat. This phenomenon causes an extremely dangerous chain reaction where intense heat and fire spread rapidly within the BESS Units at temperatures of up to 800-2,000 degrees Celsius. Deflagration, explosion, and the release of highly toxic gas clouds containing hydrofluoric acid and hydrogen cyanide can also occur. These fires do not require oxygen to burn and can be very difficult to extinguish. The current "best-practice" firefighting technique involves the use of water to cool the burning batteries. Alternatively, some fire incidents have simply been left to burn themselves out. Where water is used, this must be applied for a long time in copious quantities because of the documented risk of re-ignition. For instance, the severe BESS fire in Australia at the Tesla Victorian Big Battery facility in July 2021 involved two BESS containers. It required 900,000 litres of water to be applied over six hours. Scaling up this requirement for a fire involving all 240 containers at the Feckenham location could require up to 108 million litres – which FPC say would be technically impossible to deliver without a vast, dedicated reservoir on site – and this volume corresponds to the size of 43 Olympic swimming pools. Lastly, water used to extinguish a fire would inevitably become contaminated with toxic chemicals; thus, runoff would pose a significant environmental hazard and would need to be recovered and decontaminated. We think the Environment Agency and Health and Safety should be consulted on this matter, and this has not happened.

FPC note Immersa have produced an extremely flimsy, so-called "Battery Safety Management Plan". We note that this wholly inadequate document does not include a single fire hydrant anywhere on the site. This astonishing omission strongly suggests that Immersa do not understand the vital safety considerations that should accompany all BESS installations. The plan also claims that Immersa will "engage" with Hereford and Worcester Fire and Rescue (HWFR) – but as far as we know, this has not happened.

FPC has compared Immersa's planning application and their Battery Safety Management Plan to the National Fire Chiefs Council document "Grid Scale Battery Storage System planning – Guidance for FRS", – which is the latest national Fire and Rescue guideline, dated June 2023, and supplied to all UK Fire and Rescue Authorities. This document will likely provide the standard evidence-based criteria against which all UK fire authorities will judge all planning applications for the foreseeable future. We note that Immersa's proposal is defective and non-compliant with this guidance in the following essential areas:

1. There is no information detailing the specification of the BESS Units or their safety testing data.
2. There is no information on the container layout measurements and inadequate road access information. The only diagram supplied suggests that the containers are aligned in pairs closer than the recommended minimum separation distance of 6m and that the access road system is wholly inadequate in terms of road size and turning space for fire appliances. Part of the perimeter contains combustible trees closer than the 25m specified separation distance.
3. There is no provision or specification for any water supplies on site.
4. The facility seems to rely solely on Fire Suppressions Systems (FSS) within the BESS containers. FSS only provides a "hold time" of 10 minutes in the event of a fire and is not considered adequate as the sole firefighting method.
5. There is no mention of Deflagration Prevention and Venting facilities.
6. There is no formal Risk Management or Emergency Plan
7. There is no provision for collecting or dealing with water runoff which may pose a severe chemical contamination risk.

We note also that the development site is about 7 miles from the nearest fire station and only accessible down Astwood Lane/Rockhill Lane, both of which are narrow, tortuous, and have 7.5-ton weight restriction limits (see also comments on pages 11-13). According to their specifications, standard fire appliances used by HWRF weigh between 13 tons and 30 tons.

The site is also 600m distant from Feckenham Primary School with its 114 children and 16 staff – directly across uninterrupted open countryside; it is also within 100 m of Feckenham National Grid substation. A significant BESS fire could have dire consequences at these neighbouring locations. These real risks need to be meticulously assessed and addressed BEFORE this planning application is determined. Given the enormous range of possible variations in these risks according to the specification, number, and configuration of BESS Units on the site, it would be illogical and reckless for Redditch Planning Authority to rely on planning conditions post-determination to resolve these issues. To do so would be like saying, "Permission is being granted for a power station; we can decide afterwards whether a nuclear reactor or a windmill should power it".

FPC has arranged a meeting with Adrian Elliott, Assistant Chief Fire Officer, and Steven Andrews, Station Commander at HWFR, on 22<sup>nd</sup> June 2023 to discuss matters in more detail. Further information may follow this meeting.

FPC says this BESS facility exposes Feckenham and its residents to unacceptable fire and safety risks. It is very clear from the current recommendations of the Fire Chiefs Council that Immersa's planning application CANNOT possibly proceed in its present format. Without effective fire and safety precautions, Immersa's planning application must be refused.

## Highways, Transport and Construction Problems

We know that the Council's Highways Officer, Sukvinder Agimal, has already recommended the refusal of this planning application because the proposal does not comply with the Streetscape Design Guide – in particular, the design of the access entrance needs to be enlarged and modified. Furthermore, if planning permission is to be granted, he recommends certain specified conditions – e.g., the provision of a Construction Management Plan. We are also aware that the same officer was also involved in assessing the Statkraft BESS planning application 21/00195/FUL and made specific recommendations to be included as planning conditions in the decision notice.

FPC points out that there appears to be a very significant discrepancy between the data and information provided by "Magna Transport Planning Ltd" on behalf of Immersa in their Transport Statement for this planning application when compared to the Transport Note produced by "Arcus" on behalf of Statkraft for their earlier consented proposals. Specifically, we highlight the fact that:

1. Statkraft say they will build a 50MW BESS facility over a period of 78 weeks, involving up to 58 HGV movements daily.
2. Whereas Immersa astonishingly claims they can build their 200MW BESS facility (which is four times bigger) in an improbable 40 weeks and that it will involve only an average of only 3 HGV delivery vehicles daily. FPC simply do NOT believe these figures, which appear to be a gross underestimate of the likely construction and transport burden. At best, we think the figures appear to be "back-of-an-envelope estimates" concocted by someone with absolutely no construction experience. FPC ask Immersa to state who provided these transport estimates for this huge project and what are their "construction related" qualifications enabling them to do this.

More worryingly, Magna's Report for Immersa has overlooked the fact that the only two access routes to the proposed development site both have 7.5-ton weight restrictions. This should have been obvious to anyone visiting Feckenham to inspect the topography. Below are pictures of the two blue "information" signs clearly showing these weight restrictions.

Blue "Informational" Sign on B4090 in Feckenham indicating the 7.5-ton weight limit on the route through Feckenham village, via Astwood Lane to Astwood Bank



Blue "Informational" Sign on B4090 at turning into Rockhill Lane



When considering both reports, FPC is seriously doubtful that Immersa's consultant has accurately or truthfully described the construction requirements needed to build this massive 200MW BESS facility. In contrast, we believe Arcus' earlier transport report for Statkraft's consented 50MW facility is highly credible. Moreover, given the weight restrictions on the ONLY access roads and the fact that numerous large HGVs will be required to deliver the 240 nineteen-ton BESS units and their foundations (the total weight of each of these HGVs, when loaded, will be 30 tons), we believe this will inevitably cause very significant damage to these small access roads. This concern is precisely why Sukvinder Agimal specified Condition 14 in the Decision Notice for 21/00195/FUL, which says that Statkraft will have to take financial responsibility for documenting the condition of these roads before and after construction and must pay for any road damage caused by their construction vehicles.

Of further concern, it appears that Sukvinder Agimal has erroneously based his opinion on the assumption that Immersa's transport statement regarding the volume of construction traffic is both truthful and accurate. We believe he is mistaken in this assumption because Immersa's report seems, very obviously, completely unrealistic and inaccurate. We think this invalidates Mr Agimal's conclusions about the impact of construction traffic. We think Mr Agimal's report is also inconsistent with his earlier opinion on 21/00195/FUL regarding road weight limits and road damage restitution. We draw his attention to the fact that precisely the same road access has been proposed for both the Statkraft and Immersa BESS developments (with their sole access via carriageways with 7.5-ton weight restrictions). Yet, incomprehensibly, his recommendations are very different for the two schemes. We think his conclusions are, therefore, significantly flawed.

We respectfully request Mr Agimal to take note of these important observations and to correct his recommendations accordingly.

## **No Provision for Recycling of Lithium and Other Consumables**

### **No Statistics to prove a Contribution to Net-Zero**

The justification for Immersa's BESS project in Feckenham is based on its supposed contribution to the UK's Net-Zero initiative. FPC has already noted above that this choice of location is significantly less energy efficient than, for instance, a site near the wind farms on the east coast of England due to Joule's Law. We are further surprised that their planning statement includes little by way of description of the overall impact of lithium-ion technology on the environment.

In this regard, we point out that this BESS facility is NOT a renewable energy generation source at all; it is merely a vehicle for energy arbitrage – in other words buying electricity when it is cheap and reselling it at a profit when national energy generation is insufficient. Immersa fails to mention that the extraction of Lithium salts from mining and water evaporation is a highly carbon-negative process, as are the manufacturing processes involved in battery production and the transportation of heavy battery containers from distant locations, such as China, to where the BESS facilities are being built. Worse still, it is known that lithium-ion batteries have a limited lifetime and become much less efficient as they age. Typical BESS batteries have a lifetime of 4,000 to 9,000 charging cycles, following which they need to be de-commissioned. Each container weighs 19 tons and, over the lifetime of this BESS facility, will need replacing at least four to five times – creating a total of 18,240 to 22,800 tons of heavy-duty industrial waste containing at least a 4,000 to 5,000 tons of highly toxic lithium iron phosphate chemicals. It is absolutely staggering that Immersa, whilst trumpeting their green credentials in this planning application, have made absolutely no mention of this huge burden of toxic waste material. Even more surprising is the fact that the planning officer, Paul Lester, has apparently also completely overlooked this colossal poisonous legacy when he dismissed the need for a full EIA assessment. FPC further point out that recycling this material is an extremely carbon-negative process involving the smelting of vast quantities of spent battery material followed by the High-Tec industrial remanufacturing of new batteries. FPC deplore Immersa's apparent disregard for the waste implications of this project; Mr Lester's neglectful dismissal of the need for an EIA assessment will be appealed to the Secretary of State.

FPC say Immersa's omission of these necessary carbon-negative processes in their documentation gives a significantly distorted and unduly optimistic picture of the contribution to Net-Zero. In reality, this BESS facility is not as "green" as it seems. Furthermore, it is very telling that Immersa completely fails, anywhere in their planning statement, to quantify, in numerical or financial terms, how this BESS facility will actually contribute to Net-Zero. FPC believe that this basic numerical information is an absolute requirement if they are trying to convince a Planning Committee to sacrifice Green Belt land. We ask, "Would you buy a solar panel system with a Lithium Ion Battery for your home without looking at the specification of the hardware and the cost of the system versus the projected future financial and energy savings"? Of course, you wouldn't – so why on earth should anyone accept Immersa's grandiose claims about their massive 200MW BESS in the total absence of ANY supporting performance figures or statistics whatsoever? We say the absence of this vital factual information should raise serious doubts about the overall credibility of this planning application. In short, FPC fears that this planning application is little short of a conjuring trick, whereby Immersa loudly proclaims that their BESS facility will contribute to Net-Zero whilst

hoping that nobody will notice that they are not providing ANY factual evidence whatever to quantify or even justify this bold assertion. They are also hiding the significant waste implications by omitting them from their documentation. We request that Redditch Planning Authority make specific enquiries to clarify these important points.

FPC challenges Immersa to produce the actual figures and statistics which support their claim that this massive BESS facility helps Net-Zero. If they are unable to do this, we say that they cannot justify claiming "Very Special Circumstances" permitting them to industrialise precious Green Belt Land, and their planning application must be refused.

### **Other Issues with Immersa's Planning Statement**

FPC also dispute the following assertions in Immersa's Planning Statement – these are referred to under the same paragraph numbers used in their document:

2.9 "The site is unaffected by heritage assets within or adjacent to the site."

FPC say that the interrelationship between this 13-acre development site and the historic village of Feckenham and its Conservation Area will inevitably be adversely affected by the sheer scale of this incongruent industrialised development, which is totally alien to its present status as an important parcel of agricultural pastureland. The field due for development shows evidence (albeit degraded) of form Ridge & Furrow soil artefact – which is associated with Feckenham's moated manorial site – which is a scheduled national monument. The site is also within direct visibility of Mutton Hall Farm & water wells which are Grade II listed and whose settings will be adversely affected. The Conservation Officer has deemed that this represents "less than substantial harm" to these assets, but the NPPF requires this harm to be given significant weight in the planning balance.

We also point out that the visibility of these industrialised features will be much greater than Immersa claims because, according to National Grid, they will be obliged to install the tall and unsightly connection hardware shown on page 9 to make the BESS functional.

3.4 "The proposed batteries are to be set in an attractively landscaped site".

FPC say this site is not attractively landscaped – it is an ugly industrial development in an otherwise traditional rural landscape.

4.10 "Call for Evidence 2021 – Storage across days, weeks, or months could greatly reduce the costs of meeting Net-Zero."

Lithium-ion BESS facilities can only store electricity in charge-discharge cycles lasting a few hours – and this BESS facility is incapable of storage for days, weeks, and months – which can only be done with other technologies such as Hydrogen, pumped hydro, compressed air etc. So, this quote from "A Call for Evidence" is, in fact, a strong argument AGAINST BESS facilities in favour of other longer-term technologies.

4.13 "Remove barriers to co-location of storage."



This is a stand-alone BESS facility and does not generate any electricity at all – and, specifically, it is not co-located with any local renewable energy generation source, as this reference suggests. As explained above, stand-alone facilities should, in the interests of energy efficiency, all be located near where the majority of wind energy is generated in the UK, as this is, and will be, the dominant provider of renewable energy in the future.

- 4.17 "Appeal Decision quoting benefits of carbon saving being the justification of BESS facilities".

This BESS facility is not directly linked to any carbon-saving reduction in power generation from fossil fuel sources, so this appeal judgement is irrelevant. In fact, it is wasteful of energy resources because of the fact it is not located appropriately to minimise transmission losses due to Joules Law.

- 4.18 "National Grid's Future Energy Scenarios (2021) target capacity for energy storage is 40GW by 2050."

Immersa have misquoted National Grid's statistics here, and the correct targets published in their latest document in this series – "National Grid's Future Energy Scenarios (2022) page 180 – says there are two targets for **all forms** of energy storage for 2050; their most optimistic forecast referred to as "Leading the Way" is 43GW, but their expected delivery – referred to as "Steady Progression" is only 20GW. This forecast includes all forms of energy storage, namely Vehicle to the grid, Liquid Air Energy Storage (LAES), Compressed Air Energy Storage (CAES) and battery storage. Whilst we agree that Battery storage requirements will increase by 2050, it is not known what proportion or quantum of energy storage by 2050 will be provided by BESS facilities. It is quite possible that the entire contribution from BESS technology to energy storage could be easily met by co-locating these facilities near existing wind generation locations. Immersa's claim is misleading and inaccurate.

- 5.5 "The equipment within the site is all of relatively low scale.....3-4m in height...set back from the site frontage"

National Grid has told us that tall, heavy-duty grid-connecting hardware will necessarily need to be sited in the southwest corner of the site (as per the photo on page 9), to enable the BESS units to connect to the Grid and become functional. This extra hardware is very tall and unsightly and will be highly visible from Astwood Lane and as far as Grade II Listed Mutton Hall Farm (NHLE ref 1157335), Grade II Listed Water pumps (NHLE ref 100063) and Grade II\* listed Feckenham Church.

- 5.6 d "This site is not within or adjacent to a historic town".

This is clearly false: it is next to the historic village of Feckenham and its Conservation Area

5.8 "Government Call for Evidence 2021 – requiring electricity storage for long durations".

Immersa is making a false claim - BESS facilities cannot store energy for long durations – see 4.10 above.

5.12 "Feckenham is a major transmission link between the Midlands and southern England....one of six transmission links...this justifies location of BESS facilities in Feckenham."

This statement is total nonsense, according to our technical information from two senior employees working for National Grid – Andrew Akani and Adam Pritchard. Feckenham does have "400 kV national Transmission Service Operator (TSO) facilities on site. However, the two 99.4MW connections that National Grid has allotted to Immersa are District Network Operator (DNO) Connections and have nothing to do with the 400kV TSO national transmission network; DNO are local input connections, which could easily be sited elsewhere – e.g., at one of the six other substations Immersa mentions here. The true reason for locating this BESS in Feckenham is because they have secured a suitable site to rent, which is close to the substation, and they won't have to pay for a long connecting cable – these are purely economic factors – which CANNOT be taken into account in a planning decision.

5.14 "In terms of landscape impacts, the proposed development would not lead to the loss of any valuable landscape features..."

FPC strongly disagree with this statement – replacing a 13-acre parcel of historic pastureland with a massive BESS facility with all its associated hardware – will most certainly cause a loss of valuable landscape features. We are also concerned that even if the BESS facility is removed later – this land will then be deemed to be a "brownfield site" and, therefore, prioritised for alternative development – e.g., housing.

5.45 "Noise"

Whilst noting the contents of the report by Hepworth Acoustics, we note that noise levels will certainly be higher than are currently present, which is unwelcome. There is little information on low-frequency noise – which is a known noise pollutant with electricity facilities operating at 50Hz. These low-frequency noises can travel very long distances, and we anticipate that the Primary School might be adversely affected.

5.47 "Flooding"

Feckenham Residents have noted that Astwood Lane, close to this development site, is a known blackspot for flooding. We anticipate that the construction of a significant area of access roadway, plus the roof areas of 240 containers and the other buildings, will significantly increase water run-off and may exacerbate local flooding. This seems especially undesirable because of the proximity to high-voltage electrical equipment.

5.48 "Heritage Considerations & Intervisibility with Feckenham St John the Baptist Church"

FPC note that Immersa's Heritage Consultant incorrectly states that St John the Baptist Church is Grade II Listed; it is, in fact, Grade II\* listed and one of only a dozen or so buildings with this status in the entire Redditch locality. Planning applications affecting Grade II\* assets merit a mandatory referral to Historic England – this has not happened. We also note that the heritage report does not take into account the tall (up to 10m) connecting hardware which National Grid say will need to be sited in the southwest corner of the development land. We think this equipment will easily be visible from the Feckenham Church tower and adversely affect its setting. Even if this amounts to less than substantial harm, significant weight should be attached to it in the planning balance.

#### 6.9 "Economic Objective/Benefit"

FPC dispute the assertions that there will be national economic benefit. This stand-alone BESS, by Joules Law, would provide more economic benefit, and a bigger contribution to national energy conservation, if it were sited elsewhere near a substantive renewable energy generation source. Locating it in Feckenham is, in truth, an economic disadvantage to the nation.

### **Planning Considerations and Planning Balance**

Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that planning decisions are made in accordance with the approved Development Plan unless material considerations indicate otherwise. In this case, the approved development plan is BORLP4, and we quote the following paragraphs where there are policy conflicts or infringements. We also assess national policy against the relevant documentation.

#### **Principle of Development & Policy Conflicts**

1. The application site lies outside of any defined settlement. Under the locational strategy for the Borough, BORLP4 Policy 2 (Settlement Hierarchy), development, in the first instance, should be directed to the existing urban areas and defined rural settlements. This proposal is against Policy 2.
2. The site is in the West Midlands Green Belt, where development is strictly controlled. In this instance, the National Policy Statement for Energy (NPS EN-1)<sup>13</sup> sets out the government's policy for the delivery of major energy infrastructure in this location.
3. Section 5.10 of EN-1 looks specifically at the issues surrounding the development of energy infrastructure projects in the Green Belt. It recognises in paragraph 5.10.3 that although the reuse of previously developed land can make an important contribution to sustainable development, it may not be possible for many forms of energy infrastructure.

4. Paragraph 5.10.17 states that when located in the Green Belt, energy infrastructure projects are likely to comprise inappropriate development. This development is, therefore, inappropriate.
5. Very special circumstances will not exist unless the harm by reason of inappropriateness, and any other harm, is outweighed by other considerations. There is no specific definition of very special circumstances. However, paragraph 5.10.17 states that the extent to which a development's physical characteristics are such that it has limited or no impact on the fundamental purposes of Green Belt designation should be considered. Paragraph 5.10.17 does not apply because the harm to the Green Belt is significant – see below.
6. Paragraph 148 of the National Planning Policy Framework (NPPF) states that inappropriate development is, by definition, harmful to the Green Belt and should not be approved except in very special circumstances.
7. Paragraph 151 goes on to state that while elements of many renewable energy projects may be considered inappropriate in the Green Belt, the wider environmental benefits associated with increased production of energy from renewable sources may constitute very special circumstances. Paragraph 151 does not apply because no very special circumstances exist – see below.
8. The NPPF states that the fundamental aim of the Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence. The proposed development site is located within the Birmingham Green Belt, which serves five purposes, as set out in paragraph 138 of the NPPF - namely
  - a) to check the unrestricted sprawl of large built-up areas.
  - b) to prevent neighbouring towns from merging into one another.
  - c) to assist in safeguarding the countryside from encroachment.
  - d) to preserve the setting and special character of historic towns; and
  - e) to assist in urban regeneration by encouraging the recycling of derelict and other urban land.

FPC consider this application to be in conflict with paragraphs (a), (c), and (d).

9. BORLP4 Policy 8 (Green Belt) states that applications for development in the Green Belt will be determined in line with national planning guidance on Green Belts and other relevant policies within the development plan.
10. Openness - the Courts have made several rulings on how the effects of development on openness should be assessed. These judgments have established that both the spatial and visual aspects should be assessed to arrive at a rounded decision on the effects on openness.

11. The National Planning Practice Guidance (NPPG) summarises the position as follows: the impact of a proposal on the openness of the Green Belt, requires a judgment based on the circumstances of the case... these include, but are not limited to:
  - a. Openness can have both spatial and visual aspects.
  - b. The duration of the development and its remediability.
  - c. The degree of activity likely to be generated, such as traffic generation.
  
12. In terms of the spatial aspect of openness, the site comprises a very large area, namely 5.38 hectares. The proposed infrastructure visible from Astwood Lane would be up to 10m tall, consisting of the electrical hardware needed to connect the BESS facility. Overall, FPC considers the spatial impact of the development would be highly significant and harmful. In terms of visual impact on openness, the site of the proposed battery facility is directly visible from Astwood Lane and the surrounding open countryside. The facility comprises large-scale industrial infrastructure, including 240 BESS Containers on concrete foundations, the substation, tall connecting hardware, access roads and massive electrical pylons to the rear of the plot. The substation will be seen from vantage points surrounding the site, including Grade II listed Mutton Hall and Grade II\* Listed Feckenham Church tower, and will be viewed as densely built industrial development, which is alien to the surrounding agricultural land. It will also add significantly to the adverse appearance of the Statkraft site across Astwood Lane. Clearly, the proposal will have a big impact on openness from the introduction of multiple industrial structures in an area currently free of any development. Overall, while there would be a significant loss of openness in spatial and visual terms, the impact of the development on the openness of the Green Belt would be substantial.
  
13. When considering proposals for the Green Belt, the NPPF states that the extent to which a development's physical characteristics affect the purposes of the Green Belt (as defined in paragraph 8 above) should be considered. FPC considers Immersa's development to be an example of urban sprawl and an extension of the consented Statkraft scheme (albeit of an industrial variety). As such, its alien features will adversely affect the wider Green Belt open countryside between the settlements of Feckenham and Astwood Bank. Furthermore, FPC considers that it would set a precedent for future commercial or residential development in these areas.
  
14. Very Special Circumstances: The proposal has been identified as representing inappropriate harmful development in the Green Belt. This harm relates to the significant impact on openness caused by the development and harm to the landscape and visual character of the area. The development can, therefore, only be approved in very special circumstances. The following very special circumstances have been put forward by the applicant: Decarbonisation, Net Zero and the Climate Emergency. However, the development will not generate energy; and by Joules Law, it will create more energy wastage than if it were located elsewhere, nearer the site of any of the UK's major renewable energy resources, it will also create a significant carbon-negative burden from the fact that all the BESS containers will need to be decommissioned and recycled five times in the lifetime of this facility. The main function of the development is grid stabilisation. However, National Grid has confirmed that this function is not now needed in Feckenham and has withdrawn the document saying this, which applied to

the Statkraft facility in 2021. The development could be better sited elsewhere to assist National Grid's target to operate the electricity system with a zero-carbon grid by 2050. As such, the contribution of the development to the decarbonisation of the grid should be assigned limited weight when considering the Climate Emergency declared by Redditch Borough Council in 2019, the UK's commitment to achieving net zero greenhouse gas emissions by 2050 and the Government's commitment to providing a flexible grid as set out in the Energy White Paper.

15. Loss of Agricultural Land Paragraph 174(b) of the NPPF, as amplified by Footnote 53 of the NPPF states, "Where significant development of agricultural land is demonstrated to be necessary, areas of poorer quality land should be preferred to those of a higher quality." The application site has a provisional agricultural land classification (ALC) grade of 4 of 5 (poor quality agricultural land with severe limitations which significantly restrict the range and level of yield of crops) and has no known history of crop cultivation. ALC Grades 1, 2 and subgrade 3a are considered within the 'best and most versatile' land category in the planning system and materials. Despite this low rating, FPC maintains that the animal grazing function of this pasture contributes to food production locally, which would be lost if development proceeded.
16. Policy 36 Historic Environment is relevant in that it sets out that designated heritage assets will be given the highest level of protection and should be conserved and enhanced. Paragraph 199 of the NPPF states that: "When considering the impact of a proposed development on the significance of a designated heritage asset, great weight should be given to the asset's conservation (and the more important the asset, the greater the weight should be). This is irrespective of whether any potential harm amounts to substantial harm, total loss or less than substantial harm to its significance." Paragraph 202 of the NPPF states that: "Where a development proposal will lead to less than substantial harm to the significance of a designated heritage asset, this harm should be weighed against the public benefits of the proposal". Paragraph 206 of the NPPF outlines that Local planning authorities should look for opportunities for new development within.... the setting of heritage assets to enhance or better reveal their significance. Both policies conflict with Immersa's proposals because they damage the setting of neighbouring listed buildings. Though this harm is less than substantial, the NPPF requires it to be assigned significant weight in the planning balance.
17. In conclusion, it is considered that the proposed development would conflict with the purposes of the Green Belt. Set within the context of the existing substation-associated infrastructure and neighbouring future Statkraft BESS facility, it would lead to further substantial encroachment of the countryside. The effects on openness, in both spatial and visual terms, are significant in terms of the surrounding context and the very large size of the development. Any harm, moderate or otherwise, to the Green Belt attracts substantial weight. The 'very special circumstances' required to approve 'inappropriate' development in the Green Belt will not exist unless the potential harm to the Green Belt is clearly outweighed by other considerations. In this instance, the applicant has failed to demonstrate that very special circumstances exist which justify this proposal in the Green Belt because the BESS facility would be more

advantageously located elsewhere in terms of energy efficiency (by Joule's Law). In the absence of very special circumstances and the fact that the development will cause certain harm to the Green Belt, the application must be judged in accordance with the policies of the BORLP4 Redditch Development Plan and NPPF, which dictate that the development should be refused.