



Stowe by Chartley Parish Council

For the attention of:

The new planning case officer, for Yew Tree Farm 25/40571/FUL
Planning Department,
Stafford Borough Council,
Civic Centre,
Riverside,
Stafford,
Staffordshire,
ST16 3AQ

30th September 2025

URGENT MAIL - copy sent by email only. Sent via planning@staffordbc.gov.uk

Dear Sir or Madam,

Concerns with regards to proposed Solar Farms in Drointon, Yew Tree Farm 25/40571/FUL and Lower Farm 23/36938/FUL – Fire Hazard.

As chair of Stowe by Chartley Parish Council, I have written to Mr Tim Clegg Chief Executive Officer on Friday seeking the name of the new planning case officer for Yew Tree Farm planning application 25/40571/FUL. In the absence of any reply as yet, we have therefore decided to address this correspondence to the general email address planning@staffordbc.gov.uk and trust it will be dealt with appropriately and forwarded to the new case planning officer concerned.

We also trust we will receive correspondence from Mr Tim Clegg the Chief Executive Officer to inform us of the name and contact details of the new case planning officer for Yew Tree Farm 25/40571/FUL, as soon as possible.

You will have hopefully already seen the letter from the above Parish Council's response to the planning application and subsequently our detailed concerns about the viability of the land following past Gypsum and Salt extraction.

We write to you as the new planning case officer of the Yew Tree Farm application to question why the issues of water to fight any possible fire hazard is adequate, and again question the **due diligence** of the developers Push Energy for not addressing this issue and Stafford Borough Council, and regarding the lack of consultation with Severn Trent Water and the danger of the risk of a BESS Batteries fire, which we feel is a major health and safety issue and has possible been blatantly ignored, when submitting the planning application by the developers for Yew Tree Farm. we make this statement as details from the Staffordshire Fire and Rescue Service, was clearly set out on the planning application documents relating to Lower Farm 23/36938/FUL .

Please also note, we have written directly to Mr Tim Clegg the Chief Executive Officer of Stafford Borough Council to address the issues we raise regarding Lower Farm and again we question if this application should yet again be considered as, **"An Unsafe Application"** as these issues were not considered or addressed prior to approval.

It is fascinating to see how little of both planning applications detailed above is given over to the possible fire hazard relating to the proposed solar farms and the BESS proposals. Not only is detailed planning missing, but the whole area of Health and Safety seems to have been ignored. We argue that this demonstrates **a total lack of due diligence** on behalf of both the developers.

The concern of this letter is "Health and Safety" and, in particular, the fire hazards which are threatened by BESS – Battery Electricity Storage Systems. The technology for these is relatively new – as is the methodology for addressing issues when systems are damaged, fail or catch fire.

It is interesting to note that neither Staffordshire Fire and Rescue Service nor Severn Trent Water has been a statutory consultee in the planning process when there seems to be growing national and international concern over the possibility of fires in BESS clusters, and in the appropriate ways to fight such fires. However, during the planning process for the planning application at Lower Farm, Drointon, a response was received from Staffordshire Fire & Rescue Service on 17 November 2023 and it stated the following:

“To reassure you through the planning application process our Protection and Response teams ensure the following areas are addressed:

1. Siting of renewable energy infrastructure so as to eliminate or reduce hazards to emergency responders.
2. Safe access for emergency responders in and around the facility, including to energy storage infrastructure and firefighting infrastructure.
3. Provision of adequate water supply and firefighting infrastructure to allow safe and effective emergency response.
4. Effective emergency planning and management, specific to the site, infrastructure and operations.
5. Owner has a comprehensive Emergency Response Plan, showing full understanding of hazards, risks and consequences.
6. Effective identification and management of hazards and risks specific to the siting, infrastructure, layout and operations at the facility.
7. Impact on surrounding communities, buildings and infrastructure.
8. Vegetation sited and managed so as to avoid increased bushfire and grassfire risk.
9. Prevention of fire ignition on site
10. Prevention of fire spread between the site infrastructure (solar panel banks, wind turbines, battery containers/enclosures.)
11. Prevention of external fire impacting and igniting site infrastructure.
12. Provision of accurate and current information for emergency responders during emergencies.”.

Despite the comments from Staffordshire Fire and Rescue Service (SF&RS) report, which were recorded on the planning application on Lower Farm 23/36938/FUL under the document section, we note there is still no evidence to prove that the developers of Lower Farm, have identified a management of hazards or a comprehensive Emergency Response Plan. **Why has this not been supplied for the Lower Farm application and why is there no such plan for the Yew Tree Farm planning application?**

Very few of the detailed points given above in the SF&RS response are mentioned in the Push Energy’s planning application for Yew Tree Farm, and there is certainly **NO** “effective identification and management of hazards” nor “a comprehensive Emergency Response Plan”. We would argue that unless an acceptable and realistically effective plan is presented the application for Yew Tree Farm should also be considered as an **unsafe planning application**, and should, therefore, be rejected.

In the Fire and Rescue Service’s response to the Yew Tree Farm application, the responding officer states that ‘National Fire Chiefs Council (NFCC) guidance recommends as a minimum hydrant supplies for boundary cooling to be located in a safe location to the BESS containers. The supply should be capable of delivering no less than **1900 litres per minute for a minimum of 2 hours**’.

Equally, the details given above call for **“Provision of adequate water supply and firefighting infrastructure to allow safe and effective emergency response”**. Experience of the residents living in the area of Yew tree Farm and Lower Farm, shows considerable variation of pressure in the water supply on a daily basis. Severn Trent have made comments regarding our questions, and we quote below from these emails, which are listed in full in appendix 3, for reference.

Severn Trent Water PLC have not been consulted by either the developers for Lower Farm, or Yew Tree Farm, Drointon to determine if the water supply in the area is sufficient to deal with the above. They also, do not consider adjacent woodlands and if water supplies, or access would be sufficient in dealing with a fire or thermal runaway both to a BESS installation and to these adjacent woodlands, which have no direct access, either from the site or adjacent fields.

Why has it yet again been down to the Parish Council to address and identify these issues, that the water main which serves Drointon is a 125mm Medium Density Polythene (MDPE) supply, which at best can only service the properties in Drointon and Grindley. How would this also then cope with a BESS fire and any woodland fires. A Parish councillor has spoken with Severn Trent Water and asked several direct questions to confirm the facts:

- ‘Do you think a 125mm water main could handle the Fire Services required flow of 1900 litres per minute (L/min) to deal with a Battery Energy Storage System (BESS) fire for a minimum period of 2 hours’. The response from Severn Trent (copy emails attached in Appendix 3) was:
- A 125 mm diameter watermain might be able to deliver 1900 L/min, but it depends heavily on several factors:
 - System pressure (available pressure at the hydrant or connection point)
 - Pipe material and age (affects internal roughness and friction losses)
 - Length of pipe run (longer runs = more friction loss)
 - Elevation changes (can reduce pressure head)
 - Flow velocity limits (to avoid excessive turbulence or pipe wear)

- A 125 mm pipe under good pressure (say, 300–400 kilopascal (kPa) or 45–60 pound per square inch (Psi) might deliver 1500–2500 L/ per minute, under ideal conditions, but a sustained flow at 1900 L/ per minute, could be borderline or unreliable if pressure drops or pipe losses are significant.

Therefore, both the developer and the Stafford Borough Council need to review the relevant fire regulations to confirm the minimum pressure requirement for this hazard level. **It is therefore clear to the parish council, that a dedicated fire water supply separate from domestic mains, may be required.**

Now we know the Staffordshire Fire and Rescue service have stated a minimum water supply of 1900 litres is required for a minimum of 2 hours. We are also aware other BESS storage fires, in some areas have taken over 59hrs to extinguish. If a similar fire occurred at either solar farm in Drointon (which is feasible) then this would equate to 114,000 litres of water per hour, or over 6,726,000 litres of water over an extended period – excluding any potential woodland fire.

Please explain where this highly contaminated water is expected to drain to - potentially to Chartley Moss, or Blithfield Reservoir via the Bourne Brook and the River Blythe (see appendix 4), which feeds directly into the reservoir. This will leave the area as a contaminated wasteland for years to come, and should such volumes of water get to Chartley Moss then this delicate and rare eco system and one of the largest floating peat bogs or Schwingmoors in Europe will be lost forever, which would be an ecological disaster. This raises very great concerns for Stowe by Chartley Parish Council, who are custodians of the Parish regarding the **due diligence and lack of care** by developers for both Lower Farm and Yew Tree Farm. Have they considered how they could deal safely with a BESS fire, given that:

- Severn Trent say the existing 125mm MDPE pipe is unlikely to cope with 1900 litres per minute over a prolonged period
- The average British Fire Engine carries between 1,800 to 2,400 litres of water (approximately 400 to 530 gallons). This would equate ONLY 1 minute to 1.5 minutes of continuous fire suppression.
- Should the water supply fail then what back up systems are in place, no contingency plan is identified by either developers or indeed the Fire and Rescue service. If this means fire engines need to be used to deal with a fire at a BESS installation or adjacent woodland, it would require around 3,375 fire engines worth of water. This is neither realistic or indeed feasible.
- As such, Severn Trent recommend that a separate dedicated water supply separate from the domestic supply should be installed. In either application there is no indication as to how, where, or when such a water main will be installed, and there is no indication of any consultation with Severn Trent, or adjoining land owners.
- We do not accept the methodology used by the developers to determine both the risk of a fire starting at the BESS storage, or the response to dealing with such a fire.

The potential fire risk (of whatever likelihood) has not been thought through properly, no contingencies exist, and the developers have simply glossed over the matter.

Whilst we are aware that the developers have produced reports that indicate Chartley Moss may not be affected by a solar farm under normal operational conditions (although data is unsubstantiated), none of the reports deal with the effect upon the eco system in the event of a BESS fire. As mentioned above, any water used to deal with a fire will be contaminated with chemicals and heavy metals. These are bound to eventually end up in water courses that ultimately feed to either Chartley Moss or Blithfield Reservoir. It is not acceptable for members of the public, or SBC Planning Department to take the developer's report at face value. It is likely that such a report will contain a bias – particularly a bias of omission. Due diligence demands that totally independent reports are sought to ensure that all consequences of a BESS fire are investigated and made public.

Please explain why the issue of adequate water has not been considered or addressed as part of the Lower Farm application. This we consider to be very poor due diligence on behalf of the developers, Stafford Borough Council and indeed the Planning Inspector who was made aware of resident's concerns at the Planning Appeal hearing for Lower Farm.

When considering the above weaknesses in the plan, it must be remembered that the Government Inspector granted the appeal of the developers of Lower Farm, Drointon. Also, during the Lower Farm appeal hearing residents did raise concerns about the water supply; these questions were **not answered** by the developer and were not challenged by the Planning Inspector. The parish council is convinced that this is totally unacceptable. These concerns are compounded enormously by the cumulative effect brought about by the Planning Inspector's granting of the appeal by the developers of Lower Farm

It might be assumed that PUSH Energy have not provided the Health and Safety data because the risks of the BESS are not objectively defined. This is difficult territory because there appears to be little accepted knowledge of fighting a BESS fire. However, even if there is little understanding there is general agreement that such fires do occur and that they are extremely difficult to extinguish. Appendix 2 shows notes from the BBC News On-Line published on 11 September 2025. To quote from the appendix:

“At a BESS facility in Essex in February 2025 a fire took almost 24 hours to extinguish.”

“A fire in Liverpool in 2020 took 59 hours to put out.”

“A fire at one of the world’s largest BESS plants in northern California led to the evacuation of around 1500 people and the closure of a major highway.”

From the data above it might be assumed, that the incidents above were recorded when the sites had sufficient water and pressure, and an Emergency Response Plan. It is vital to ensure that the already-agreed application for Lower Farm and the current application for Yew Tree farm have the best possible provision.

An Emergency Response Plan and the detail regarding the suitable availability of water are flagrantly missing from the current applications. It is difficult to believe that such a major Health and Safety concern could have been omitted by accident. If it was not, one can assume only that it was omitted on purpose! In either event, we would argue that there has been no due diligence shown by the developer.

Stowe-by-Chartley Parish Council look forward to an acknowledgement of this email as soon as possible, and a full reply answering the very important questions posed in this letter. We believe that the health and safety of residents in the area concerned will be put at risk if solutions are not found to counteract the fire hazard potentially raised by the large number of BESS battery storage facilities, currently agreed for Lower Farm and proposed for Yew Tree Farm.

Key Questions arising from this document:

1. Is Lower Farm an **unsafe application** because again, **due diligence** has not been carried out by the developers or Stafford Borough Council, regarding provisions should a fire occur due to the BESS Batteries?
2. Could Yew Tree Farm also be considered as an **unsafe application** because again **due diligence** has not been carried out yet, by the developers or Stafford Borough Council, regarding the provision should a fire occur due to the BESS Batteries?
3. Why have Staffordshire Fire and Rescue Service or Severn Trent Water not been statutory consultees regarding the fire hazard of a BESS storage facility for Lower Farm?
4. Why have Staffordshire Fire and Rescue Service or Severn Trent Water not been statutory consultees regarding the fire hazard of a BESS storage facility for Yew Tree Farm?
5. Why have the developers at Lower Farm failed to submit **a management of hazards document** yet despite the comments made by the Staffordshire Fire and Rescue Service under planning application 23/36938/FUL?
6. Why have the developers at Lower Farm failed to submit **a comprehensive Emergency Response Plan** yet, despite the comments made by the Staffordshire Fire and Rescue Service under planning application 23/36938/FUL?
7. Why have the developers at Yew Tree Farm as yet failed to submit **a management of hazards document** despite the comments made by the Staffordshire Fire and Rescue Service under planning application 23/36938/FUL for Lower Farm and Yew Tree Farm 25/40571/FUL?
8. Why have the developers at Yew Tree Farm as yet failed to submit **a comprehensive Emergency Response Plan**, despite the comments made by the Staffordshire Fire and Rescue Service under planning application 23/36938/FUL for Lower Farm and Yew Tree Farm 25/40571/FUL??
9. Would you not conclude that any responsible developer would observe fully any recommendations made by the Staffordshire Fire and Rescue Service, in the case of a similar planning application on a neighbouring property. If the developer did not so do, would you question their **lack of due diligence**?
10. So why have Push Energy not addressed the issues or made any attempt to submit **a management of hazards document** or **a comprehensive Emergency Response Plan**?

11. In light of the facts supplied regarding the inadequate water supply and firefighting infrastructure to allow safe and effective emergency response, please can you explain what action you are going to take regarding **the unsafe application** relating to Lower Farm planning application which has been approved?
12. In light of the facts and information regarding the inadequate water supply and firefighting infrastructure to allow safe and effective emergency response, please explain what action you are going to take regarding the proposed Yew Tree Farm planning application which has yet to be determined?
13. Please can you explain and confirm what provisions will be put in place to provide the water needed to fight a BESS battery storage fire, should such a fire occur, in the Drointon area.?
14. Please can you explain and confirm where this highly contaminated water is expected to drain to, should a fire occur?

We would appreciate a reply, no later than Tuesday 28th October 2025.

For your information we have attached four appendices to this email.

Your sincerely,



Mrs Sue Buxton CiLCA
Clerk and RFO of Stowe by Chartley Parish Council



Cllr Peter Coote BA(Hons)MA(Ed)
Chair of Stowe by Chartley Parish Council,

Address: Four Oaks Farm, Hadley End, Yoxall, Burton on Trent, Staffordshire, DE13 8PF Telephone: 07398 756549 Email: clerk@stowe-by-chartley-pc.gov.uk	Address: 2 Chartley Manor Mews, Chartley, Staffordshire. ST18 0LL Telephone: 01889 270571 Email: cllrpcoote@stowe-by-chartley-pc.gov.uk
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Circulated to:

Mr Tim Clegg, Chief Executive Officer for Stafford Borough Council
Cllr Aidan Godfrey, leader at Stafford Borough Council,
Cllr F Beatty MBE ARAGS, – councillors at Stafford Borough Council
Cllr K Aspin – councillors at Stafford Borough Council
Cllr Andrew Mynors - Staffordshire County Council,
Sir Gavin Williamson CBE MP
Mr Ben Adams Staffordshire Commissioner for Police, Fire & Rescue and Crime and
Stowe by Chartley Parish Councillor's
Members of the Stowe by Chartley Parish Council
Members of the Working Party for Solar Farms.

Appendix I

Useful Technical information regarding water supplies

Why Water Mains are Insufficient for a Battery Energy Storage System (BESS) Fires

Introduction

- The growing use of Battery Energy Storage Systems (BESS) in energy infrastructure is concerning.
- Unique fire risks are associated with lithium-ion batteries.
- Importance of understanding limitations of traditional firefighting methods.

Nature of BESS Fires

- **Thermal runaway:** Self-sustaining chemical reaction.
- **Toxic gas release:** Hydrogen fluoride, CO, etc.
- **Re-ignition risk:** Can reignite hours or days later.
- **Adjacent woodlands :** Can increase magnitude of fires

Why Water Mains Are Insufficient

Electrical Hazards

- Risk of short-circuiting and arcing when water contacts live systems.

Ineffective Suppression

- Water does not stop thermal runaway.
- Cooling may delay but not prevent re-ignition.

Environmental Contamination

- Firewater runoff contains hazardous chemicals.
- Standard drainage systems can't manage this safely.

Supply Limitations

- Required flow: ~1,900 litres/min for 2+ hours.
- Many water mains systems can't meet this demand.

Can a 125mm Water Main Deliver 1900 Litres/Minute for 2 Hours?

Objective

Evaluate whether a 125mm diameter water main can deliver the required flow rate of **1900 litres per minute** continuously for **2 hours** to support firefighting efforts for a Battery Energy Storage System (BESS) fire.

Required Flow

- **Target flow rate:** 1900 litres/min = 31.67 litres/sec
- **Duration:** 2 hours = 120 minutes
- **Total volume needed:** 1900 × 120 = **228,000 litres**

Pipe Capacity Estimate

Using the **Hazen-Williams equation**:

$$Q = 0.278 \cdot C \cdot D^{2.63} \cdot S^{0.54}$$

Where:

- Q = flow rate (L/s)
- C = Hazen-Williams coefficient (typically 130 for plastic pipes)
- D = internal diameter (m) = 0.125 m
- S = slope of hydraulic grade line (assumed 0.01)

Estimated flow rate:

Approximately **20–25 litres/sec**, depending on pressure and pipe condition.

Conclusion:

A 125mm water main is unlikely to reliably deliver 1900 litres/min over 2 hours due to:

- **Insufficient diameter** for sustained high flow.
- **Pressure losses** over distance.
- **Competing demand** from other network users.

Recommendations

- **Supplement with on-site emergency water storage** (e.g. tanks or reservoirs).
- **Install booster pumps** if relying on mains supply.
- **Co-ordinate with Fire Services and Severn Trent** to assess hydrant capacity and access.
- **Design containment systems** for firewater runoff.

Recommended Mitigation Strategies

- **Defensive cooling:** Fog patterns to cool adjacent modules.
- **Water mist systems:** More effective and environmentally safer.
- **On-site Emergency Water Supply (EWS):** Tanks or open sources.
- **Containment design:** Penstocks, impermeable surfaces, attenuation basins.

UK Fire Service Guidance

- Early engagement with fire services.
- Use of NFPA 855 standards.
- Install CO and smoke detection systems.
- Strategic hydrant placement and access planning.

Conclusion

- Water mains alone are not suitable for BESS fire response.
- Integrated planning, alternative suppression systems, and collaboration with fire services are essential.
- Proactive design and emergency planning can mitigate risks.

Appendix 2

News Reports regarding BESS storage systems

Quotes from BBC News online from Emma Woollacott, reporter, dated the 11th September 2025:

Battery storage systems are vital to the plans to move towards renewable energy. This means that wastage of power is minimised; it is generated when conditions are right and used when demand dictates. Without such storage, renewable energy loses its effect and its financial returns are diminished.

BESS uses the same principle as computers and electric cars – lithium-ion batteries. These are stored, thousands together, in large metal boxes. However, the technology is far from perfect. The biggest issue – and the most concerning – is the installations' potential vulnerability to fire. At a BESS facility in Essex in February 2025 a fire took almost 24 hours to extinguish. A similar fire in Liverpool in 2020 took 59 hours to put out. In January 2025, a fire at one of the world's largest BESS plants in northern California led to the evacuation of around 1,500 people and the closure of a major highway.

The cause of such blazes is a process called "thermal runaway". This can be triggered by events from short-circuits to physical damage and manufacturing defects, and which allows heat-producing chemical reactions to start within the battery. This can lead to the release of flammable and toxic gases, which can then explode. BESS facilities contain vast numbers of battery cells that, if not shielded or widely -enough separated, allow fires to spread fast.

When fires do occur, contaminants can be released into the air and water – although a recent review of large-scale BESS fires in the USA since 2012 found that emissions are largely confined to the immediate vicinity of the fire.

At Rothienorman in Aberdeenshire Blackford Renewables has put forward plans for a BESS installation. There have been local objections and a spokesperson for the company has stated: *"We take local concerns about fire safety very seriously, and we are committed to maintaining the highest safety standards through the use of advanced technology, fire safety systems and close coordination with emergency services."*

NB: It is interesting to note that no detail is given of how "highest safety standards", or "use of advanced technology" are employed.

Appendix 3

Email response from Severn Trent Water

----- Original message -----

From: Jeremy Newman <Jeremy.Newman@severntrent.co.uk>

Date: 03/09/2025 12:50 (GMT+00:00)

To: XXXXXXXX

Subject: J-250828-26617 Size and capacity of water main Drointon, ST180LS

ST Classification: OFFICIAL PERSONAL

Hi XXXXXX

Thanks for your email, That is an interesting question.

A 125 mm diameter water main might be able to deliver 1900 L/min, but it depends heavily on several factors:

- System pressure (available pressure at the hydrant or connection point)
- Pipe material and age (affects internal roughness and friction losses)
- Length of pipe run (longer runs = more friction loss)
- Elevation changes (can reduce pressure head)
- Flow velocity limits (to avoid excessive turbulence or pipe wear)

A 125 mm pipe under good pressure (say, 300–400 kPa or 45–60 psi) might deliver 1500–2500 L/min under ideal conditions, but a sustained flow at 1900 L/min could be borderline or unreliable if pressure drops or pipe losses are significant.

You should review the relevant Fire regulations to confirm the minimum pressure requirement for the particular hazard level. A dedicated fire water supply separate from domestic mains may be required.

Kind regards,

Jeremy Newman

Asset Protection

Asset Strategy and Planning

Civil Engineer, Severn Trent Water

Email: jeremy.newman@severntrent.co.uk

From: XXXXXXXXX

Sent: 31 August 2025 19:55

To: Jeremy Newman <Jeremy.Newman@severntrent.co.uk>

Subject: Re: J-250828-26617 Size and capacity of water main Drointon, ST180LS

Caution: This is an external email originating outside Severn Trent. Think before you click on links or open attachments.

Jeremy

Thank you for your email. Do you think a 125mm water main could handle the Fire Services required flow of 1900litres per minute to deal with a Battery Energy Storage System (BESS) fire for a minimum period of 2 hours.

XXXXXX

On 31 Aug 2025, at 19:15, Jeremy Newman <Jeremy.Newman@severntrent.co.uk> wrote:

ST Classification: OFFICIAL PERSONAL

Hello XXXX

Thank you for your email.

I attach an extract from our mapping system and can confirm the watermain shown is a 125mm diameter pipe made from medium density polyethylene.

The exact location can only be confirmed by carrying out trial holes at the location that you need to confirm.

I do not have the information relating to capacity of the water main and the capacity of hydrants in litres per minute supply.

Kind regards,

Jeremy Newman

Asset Protection

Asset Strategy and Planning

Civil Engineer, Severn Trent Water

Email: jeremy.newman@severntrent.co.uk

From: XXXXXXXX

Sent: 27 August 2025 12:10

To: Asset.Protection <Asset.Protection@severntrent.co.uk>

Subject: Size and capacity of water main Drointon, ST180LS

You don't often get email from XXXXXXXXX

Caution: This is an external email originating outside Severn Trent. Think before you click on links or open attachments.

Dear sir

Is it possible to know the size, location and capacity of the water main that runs along Drointon Lane, Stafford, ST180LS.

I attach a screen shot of the location.

Is it possible to know the size of the main, its location and the capacity of the water main in terms of the capacity of hydrants in litres per minute supply.

Thank you

XXXXXXX

Appendix 4 - Watercourse plan shows the natural flow of water should Contamination or Pollution occurs

