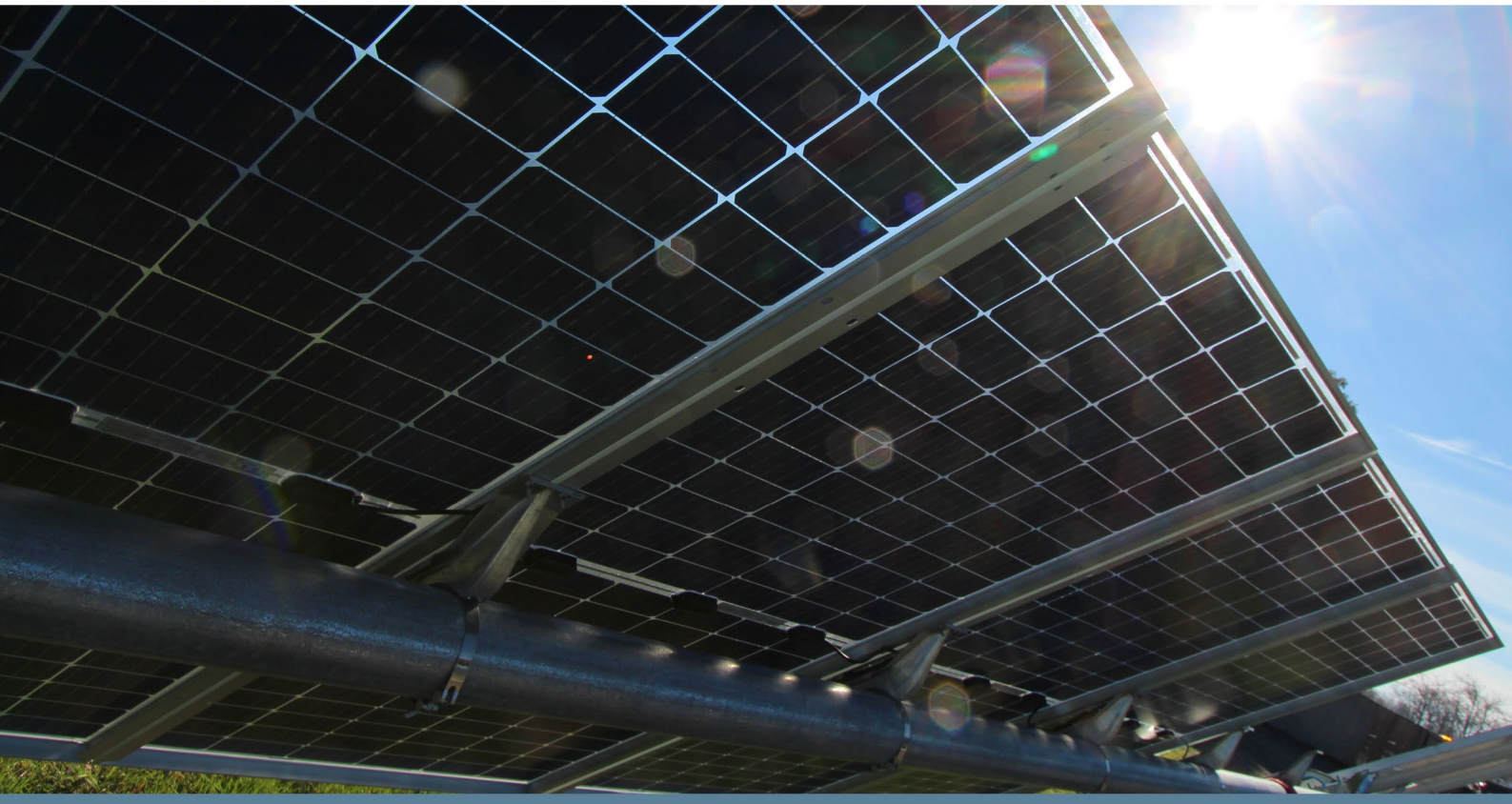
OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

GOLDBOROUGH ROAD BATTERY ENERGY STORAGE SYSTEM
LAND SOUTH OF GOLDBOROUGH ROAD, HUNDLETON, PEMBROKE, NEAR SA71 5SH
P16-01-OCEMP JANUARY 2024



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1. INTRODUCTION

1.1 This Outline Construction Environmental Management Plan (CEMP) has been prepared on behalf of Pembroke Green Limited ("The Applicant") to accompany a planning application to Pembrokeshire County Council. The planning application relates to the proposed installation of a Battery Energy Storage System (BESS) with associated infrastructure and works ("the Proposed Development") on land south of Goldborough Road, Hundleton, Pembroke, near SA71 5SH ("the Site"). The Site is located within the administrative area of Pembrokeshire County Council (PCC).

1.2 This CEMP first provides an overview of the Site and Proposed Development (Section 2), before detailing an overview of the construction processes and construction practices (Section 3) with the CEMP then concluded (Section 4).

1.3 Upon any grant of the planning application, it is envisaged that a planning condition would require the preparation of a detailed CEMP. The detailed CEMP would to be submitted to and approved in writing by PCC as the determining authority for the planning application, prior to the commencement of the development.

2. THE SITE AND PROPOSED DEVELOPMENT

The Site

2.1 The proposed BESS Site, including access from the public highway and cable corridor to the point of connection (see Appendix 1) occupies approximately 6.8 hectares (ha) of land. The main BESS site sits within an irregularly shaped agricultural field, with the cable route to the point of connection crossing agricultural land, Goldborough Road, and land south of Pembroke Power Station. The grid reference for the proposed BESS site is *SM 92762 01061*.

2.2 With regards to topography, the main BESS Site has a southerly aspect, sloping gently from approximately 60m above ordnance datum (AOD) on the northern boundary to 55m AOD on the southern boundary.

2.3 The immediate context comprises agricultural land set within fields which have strong hedgerow boundaries. The southern and western boundaries of the Site are bounded by a belt of trees. The eastern and northern boundaries comprise hedgerow planting. There is a small gap in planting on the north-western boundary.

2.4 Agricultural land and the settlement of Wallaston Green are located to the south; The C3101, agricultural land and two solar farms (Hoplass Solar Farm and Wogaston Solar Farm) are located to the west; Green Hill Reservoir is located to the north with Pembroke Power Station, the Valero Oil Refinery beyond; agricultural land and Lambeth Farm are located to the east. Pembroke Dock is located approximately 3.5km to the north-east of the Site. Milford Haven is located approximately 5km to the north-west of the Site.

2.5 The Site is accessed using existing agricultural access tracks roads from the C3101 (Wallaston Green - Valero Refinery), leading to the B4320 towards Pembroke with the A477 beyond.

2.6 There are no public rights of way within the Site. A single public footpath (ref: SP34/6) is located approximately 180m to the northeast of the BESS site. SP34/6 connects to the Wales Coast Path, which is approximately 1km from the BESS site at its closest point. The cable route passes under SP34/6 and the Wales Coast Path, west of Lambeeth Farm.

The Proposed Development

2.7 The Proposed Development is for a 'Battery Energy Storage System with associated infrastructure and works'. The BESS will provide high-speed energy balancing services to the National Grid. All associated plant and equipment, together with associated development (such as CCTV and

fencing), landscaping, surface water drainage system and works are included within the proposals. The main components of the Proposed Development comprise:

- Battery storage facility comprising a series of linked batteries housed within shipping containers (or containers of similar appearance);
- Inverter/transformer stations with cooling equipment and associated electrical infrastructure distributed evenly across the site housed within metal containers;
- Underground cabling to connect the battery storage facility and inverters/transformer stations to the proposed on-site 132kV substation and control room, which comprises the plant and equipment necessary to export the electricity stored on-site to the electricity network;
- Underground cabling from the BESS to the National Grid Pembroke Substation;
- Security fencing (2.4m high metal weld mesh) and monitoring CCTV/infra-red cameras mounted along the perimeter of the BESS Site;
- Landscape planting, biodiversity enhancements and surface water attenuation measures;
- Groundworks; and
- land for the temporary construction laydown area and site access from the public highway.

2.8 The Proposed Development will connect to the electricity network via the National Grid Pembroke Substation, located approximately 1.3km northeast of the BESS compound.

Temporary Construction Compound

2.9 During the construction phase, a temporary construction compound will serve the Proposed Development.

2.10 The construction compound, together with the construction processes and construction practices, are set out further within this CEMP.

Operation

2.11 During the operational phase, the activities on site would amount to maintenance activities, including servicing of plant and equipment and vegetation management.

Decommissioning

2.12 At the end of the project's operational life, and as part of the contractual obligations with the landowner, the Site would be decommissioned. It is anticipated that decommissioning of the Proposed Development would be controlled by planning condition.

3. OUTLINE CONSTRUCTION ENVIRONMENTAL MANAGEMENT PLAN

3.1 The Proposed Development will be constructed within a single phase of works lasting approximately 12 months.

3.2 The specific works order and sequencing will be developed further by the appointed contractor following the grant of permission. However, the general sequencing will be as follows:

Site establishment

3.3 Prior to the commencement of the development, contact details of the person(s) on site responsible for the overall compliance with the CEMP shall be identified and contact details shared with the relevant bodies.

3.4 The initial stage of works will include establishing access, creation of the construction compound and temporary welfare facilities, together with the installation of the perimeter fencing (and other temporary tree protection fencing) and other temporary fencing installed where required to secure the site. During this stage initial deliveries of materials and temporary matting/site hoardings to form the construction compound (where required) would be undertaken.

Site groundworks

3.5 The next stage of works will comprise the installation of the internal access roads from the construction compound, the necessary earth reprofiling works to the agreed height AOD upon which the BESS will be located, establishing the relevant drainage infrastructure, the excavation then laying of the foundations and granular sub-bases (where required) to associated buildings, equipment and works compounds. The 132kV substation groundworks will be undertaken including the necessary earth reprofiling works. Trenches for the cable connections within the site will be excavated.

Battery Energy Storage System Installation

3.6 Following survey and site marking out, the installation of the Battery Energy Storage System along with the inverter/transformer units, substation compound and the supporting infrastructure is initiated. The energy containers themselves are likely to be delivered as pre-constructed units which would be installed on the foundations and connected to each other and the substation. The foundations associated with each building or electrical plant is generally limited to the footprint of the building, located above (or surrounded by) a permeable sub-base.

3.7 The method for piling will be determined prior to works commencing, based on the results of further ground studies and in consultation with a qualified ecologist.

3.8 The sequencing of construction will be determined by the appointed contractor.

Associated equipment installation

3.9 The installation of associated equipment, for example CCTV and other security systems is completed and cable is laid and connected.

3.10 It is possible that the associated equipment installation will be undertaken concurrently by a separate specialist contractor.

132kV substation installation

3.11 The substation will be constructed on an aggregate base (following the earth reprofiling). This would be established first together with the excavation of the foundations and cable trenches between the equipment forming the necessary plant and equipment. Fencing around the 132kV substation compound would also be installed as part of the works.

Testing and commissioning works

3.12 The penultimate stage of works includes the commissioning and testing of all systems on site, including electrical testing. The relevant installation, safety and compliance certificates are issued prior to the first export of electricity from the proposed development.

Landscaping and site restoration

3.13 When the temporary site working compounds are removed, any disturbance to the construction compound area will be repaired and land restored. Landscaping is then undertaken, and then managed in accordance with the approved details.

3.14 Given the nature and extent of the site, the phasing across site may not follow in sequence but be undertaken concurrently.

Temporary site compound including temporary structures/buildings, fencing, parking and storage

3.15 While the precise location and form will be determined by the appointed contractor, the compound will be located to the west of the Site. The construction compound will accommodate all temporary welfare buildings, contractor and visitor parking and material storage areas required

for the construction within a 'Lay Down Area'. The compound will be enclosed within suitable temporary fencing or hoarding. Temporary modular buildings are expected to be limited in number and include: a site office, welfare facilities (including canteen, rest room, drying room, toilet block) and equipment/tool stores.

3.16 A typical construction compound is detailed in Figure 1. The actual arrangement and size of the compound will be determined by the appointed contractor.

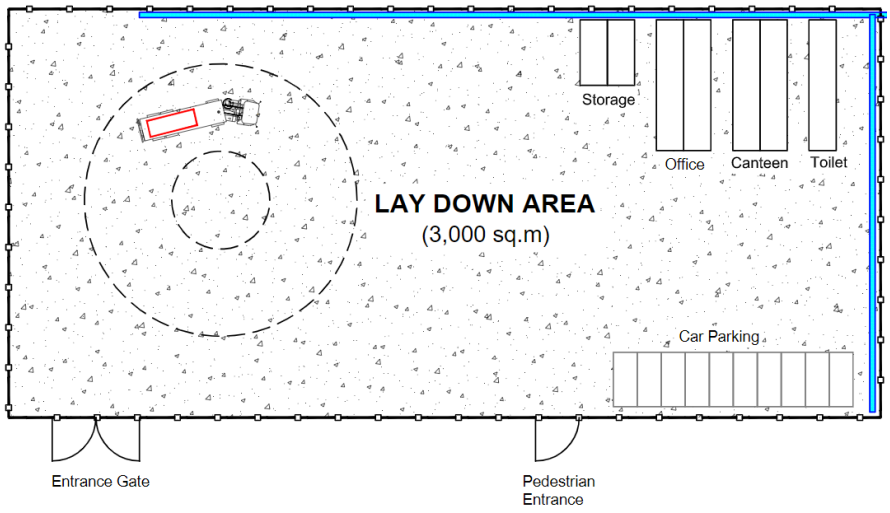

Figure 1. Typical Construction Compound.

3.17 Parking provision will be made in accordance with a Construction Traffic Management Plan (CTMP), to be submitted to and approved by the Local Planning Authority prior to the commencement of the development. The CTMP shall provide adequate onsite parking for contractors and visitors. As part of the site induction it will be explained there is to be no offsite parking on local roads.

3.18 The equipment within the compound will be removed following the completion of construction works and returned to its current use.

Details of proposed storage of materials

3.19 All materials necessary to construct the BESS will be stored within the temporary construction site compound. Materials will be stored only for a short time period prior to being utilised on site after being delivered at regular intervals. Nine HGVs are expected per day. Certain equipment may be delivered directly to a particular install location within the site such as inverter stations which are required to be directly unloaded onto foundations.

3.20 All materials will be stored appropriately and in a safe manner. For example, fuel for construction plant and equipment and other flammable materials, will be stored within bunded containers, located away from sources of accidental ignition and in accordance with all applicable legislation and guidance. The site and construction site compound will be kept to an appropriate standard of tidiness.

Temporary site illumination

3.21 No external lighting is expected to be required during the construction stages. It may be necessary for the doorways of the welfare cabins and other temporary buildings, within the temporary construction site compound, to be externally illuminated utilising PIR sensor lighting activated by pedestrian movement approaching/leaving buildings. Such lighting would be appropriately shielded/cowls fitted to prevent light spill away from the doorways.

Dust management and cleaning of wheels

3.22 Construction traffic will be managed to ensure that the construction route and access to the site off are kept clean of dust, debris and mud during the works. Wheel cleaning of HGVs exiting the site will be undertaken when necessary.

3.23 Measures will be put in place to ensure that wheel wash runoff (or other run off from rainfall) does not drain onto the public highway or carry sediment. As an additional measure, as required, a road sweeper will be deployed by the site manager if necessary.

3.24 The CTMP will set out the approach to cleaning of wheels upon leaving the site and repair of any highways damage caused during the construction works.

3.25 Dust suppression measures will include:

- sand and other aggregates are stored in bunded area and, where possible, not allowed to dry out;
- avoid dry sweeping of large areas; and,
- ensure surfacing equipment is only operated with any manufacturer's dust measurements in place.

Air Quality measures

3.26 Good industry practice dust management practices will be followed during the work. As required access tracks and areas of hardstanding, such as the construction compound, on the site will be

dampened down with a water bowser to prevent any dust created being blown. HGVs leaving site with materials (such as waste) will be sheeted to prevent the spillage of the load onto the highway and minimise dust created from HGVs. The site manager will take additional measures, as considered necessary, to prevent dust being blown.

3.27 The measures outlined in this CEMP, to be secured by planning condition, would ensure temporary air quality impacts arising from construction are reduced and managed. Construction vehicle movements and the associated emissions will also be managed through the CTMP.

Details of surface treatments and the construction of any hard surfaces and tracks

3.28 Most of the site will be retained as existing with no change to the surface treatment. The Flood Consequences Assessment sets out the area of impermeable surface is limited to the footprint of the inverter/transformer units, substation buildings and the energy storage containers. The proposed access tracks will form hardstanding of a permeable design.

3.29 While details accompanied the application, including the cross section of the access track (shown in Figure 2), these will be of permeable design and implemented according to the drainage strategy outlined in the accompanying documentation.

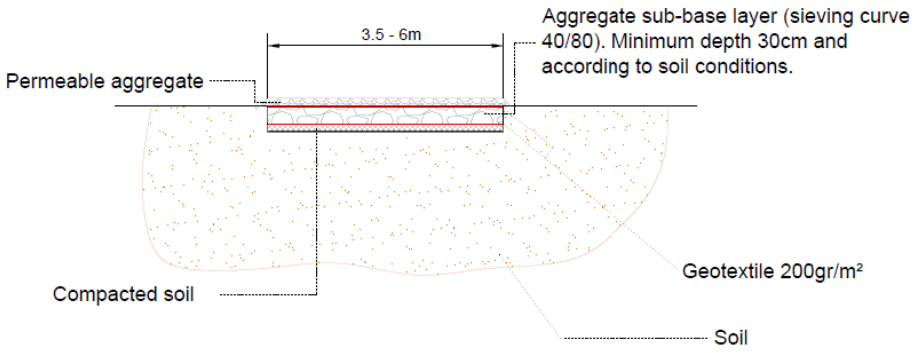

Figure 2. Extract of typical access road.

3.30 During construction temporary matting can be deployed as necessary to protect ground from damage. Any bare ground resulting from construction activities should be re-seeded.

3.31 Landscaping improvements will be undertaken in accordance with the requirements of any permission granted as set out in the accompanying Ecological Impact Assessment and Detailed Landscape Design to secure biodiversity enhancement.

Pollution measures in respect of overland water flows and ground water, bunding and storage areas and foul sewerage

3.32 The presence of any overland water flows within and adjacent to the BESS Site will be noted as part of the site inductions given. Good industry practice construction measures will be deployed to ensure the construction works have no adverse impacts on onsite and offsite drainage ditches and water courses or groundwater.

3.33 Construction vehicles will be maintained appropriately in accordance with good site practices to reduce the risk of hydrocarbon contamination and to ensure that construction plant will only be active when required.

3.34 The site manager will be responsible for checking the mitigation measures are implemented to ensure environmental and legal compliance.

3.35 Additionally, the appointed contractor will subscribe to the applicable Flood Alerts.

3.36 Any construction materials will be stored, handled and managed with due regard to the sensitivity of the local aquatic environment and thus the risk of accidental spillage or release will be minimised. All materials and plant and equipment will be stored within the temporary construction compound prior to installation. Wherever possible, these will be located outside of flood zones, surface water flood extent and away from areas of the site which are more susceptible to a pollution event (i.e. away from watercourses).

3.37 Welfare facilities for construction workers will be managed by an appropriately licenced provider who will be responsible for emptying, suitable disposal and upkeep the foul sewerage and toilet facilities on site during the construction period.

Details of emergency procedures and pollution response plans

3.38 Emergency contact details for the site manager will be placed on a notice board near the site entrance and the construction compound. The contact details will also be shared with representatives of the Community Council at the commencement of construction works.

3.39 A pollution response plan will be prepared by the contractor following appointment. The pollution response plan will follow appropriate guidance and cover matters including: Fuel delivery and fuel storage, provision and control of silt, working near waterbodies and sources of soil and groundwater contamination.

3.40 The pollution response plan will fully outline the measures to be adopted in the event of a spill or pollution incident. These will include:

- Stop release of fuel by removing the source or by using plastic sheeting and bunding.
- Excavate oil contaminated soil and place in an airtight container. This must be disposed of by a specialist waste handler as special waste.
- If spillage is onto a hard surface, all drains and gullies must be sealed immediately.
- Absorbent materials such as sand, sawdust, straw or oil absorbent granules/mats are to be placed over the contaminated area to soak up the spill. These should then be removed and stored and disposed of as special waste. Impermeable gloves and boots and disposable overalls are to be worn.
- The above items will be found in the oil spill kit, which will be made readily accessible to site personnel.
- Spill kits will be available on site and in all vehicles that transport hydrocarbon fuels for dispensing to other vehicles on the construction site. Spill kits will be made up of materials/products that are in line with environmental practice.

3.41 All incidents will be reported and it will be the responsibility of the site manager to notify relevant agencies and bodies (such as the Natural Resources Wales, IACC Environmental Health) as applicable to the incident.

Construction noise mitigation

3.42 Construction activities can give rise to noise associated with the works required to construct the approved development. Any piling necessary for building foundations is typically the activity which generates most noise during the construction phase. Where possible, plant and equipment utilised in construction works, will be deployed with suitable noise mitigation or specification (i.e. the quietest plant or construction method feasible) and shall be maintained in good and efficient working order.

3.43 All plant and machinery in intermittent use shall be shut down in the intervening period between works. Wherever possible, battery powered equipment shall be used instead of diesel or petrol powered generators.

3.44 All construction works will be undertaken within the hours specified in the associated planning condition.

3.45 Good industry practice, such as that set out in BS5228, will be followed by the appointed contractor. Measures to minimise noise will be explained as part of the site induction. The site manager will be responsible for investigating and resolving any noise complaints received.

Ecology mitigation

3.46 All construction and operational activities with the potential to affect legally protected species would be subject to precautionary measures to be consistent with environmental good practice and to comply with wildlife legislation.

3.47 Prior to the start of construction, a walkover survey will be undertaken by a suitable qualified ecologist to confirm that no new ecological features (flora and fauna) have been established within areas affected by the Proposed Development. At the outset of ecologically sensitive works, an Ecological Clerk of Works (ECoW) will deliver a 'toolbox talk' to the site construction team, briefing them on all ecology and nature conservation requirements on site.

3.48 Within the construction area, any excavations will be covered overnight or a provision of escape will be provided to prevent animals becoming trapped in the unlikely event they enter the construction area.

3.49 To prevent animals from being attracted into the Site, good housekeeping shall be maintained so that the area is kept clear of food debris and rubbish.

Vibration mitigation

3.50 Fencing and digging of required cable trenches will be undertaken only following further ground condition studies. The piled foundations will be undertaken at a distance which ensures ground vibrations from pilling works, typically to a depth of between 1m and 2m, will not impact nearby designated sites.

3.51 Further consideration of the designated sites is set out within the associated planning application and accompanying reports.

Soils

3.52 The appointed contractor will be responsible for the designation and maintenance of any temporary soil storage areas. This may also include the temporary storage of materials including demolition waste.

3.53 Regular site inspections shall be conducted which shall include the need for stockpiling and/or controlling the size of stockpiles and environmental monitoring of the stockpiles.

Waste Management Plan

3.54 The appointed contractor will prepare a Site Waste Management Plan. The plan will detail the approaches to waste minimisation and management during the construction phase in accordance with the principles of the waste hierarchy.

3.55 It is not expected that significant quantities of waste would be created during the operational phase.

3.56 The decommissioning stage and removal of the Proposed Development from the Site will be detailed within a decommissioning plan.

Oversight and responsibilities

3.57 The site manager will be responsible for the implementation of the CEMP and the development of the detailed CEMP.

4. CONCLUSION

4.1 This Outline Construction Environmental Management Plan has been prepared to support a installation of a Battery Energy Storage System with associated infrastructure works on land South of Goldborough Road, Hundleton, Pembroke.

4.2 This document has set out a summary of construction processes and construction practices to be implemented during the construction of the Proposed Development. Through the implementation of measures set out the construction works can be undertaken in accordance with the principles set out in the application documents to safeguard the amenity of local residents and the environment.

4.3 It is concluded this Outline Construction Environmental Management Plan sets out in sufficient detail the general construction approach and can be approved subject to a suitably worded Condition should additional matters be required to be further detailed in addressing further comment within a Detailed Construction Environmental Management Plan prior to construction commencing.

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