Planning, Design and Access Statement

Flexible Generation Project at New Farm, Land off Burton Road, DE13 9NF

Issued by: Alison Leeder

Date: August 2016

Submitted to: East Staffordshire Borough Council on Behalf of New Farm Energy Limited

Contents

Quality Assurance

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Version History

VERSION	DATE	AMENDMENTS
1	August 2016	Issue to Client
2		
3		
4		

1. Introduction

This Planning, Design and Access Statement (PDAS) has been prepared by ADAS UK Ltd to accompany the planning application for a 10MW Flexible Generation Facility (FGF) at New Farm, Land off Burton Road, DE13 9NF ('the site').

The scheme will include a compound containing up to 25 generators and 4 transformers. An access road is proposed to the development utilising the existing farm access from the eastern side of the A511 (Burton Road). The internal access road is approximately 200m in length.

The PDAS provides a description of the development and an assessment of its compliance with the planning policy framework and the surrounding context in which the FGF is proposed.

1.1 Content of the Planning Application

This PDAS should be read alongside the rest of the application documents, which are listed in Table 1.

Table 1: Planning Application documents

Title	Includes	Produced by
Site Location Plan	Plan showing the location of the site and ownership details	Lyric Energy
Layout Plan	Layout of development within site. One plan at 1:1000 and one at 1:2500	Lyric Energy
Elevations	Elevation drawings for the generator, fuel tank, transformer, switch room, substations/cubicles, fencing	Lyric Energy
Ecological Impact Assessment	Assessment of the impacts of the scheme on ecology, including a Phase 1 Habitat Plan.	ADAS UK Ltd
Air Quality Assessment	Assessment of air quality impacts on nearest residential and ecological receptors.	ADAS UK Ltd
Noise Assessment	Assessment of noise impacts on nearest residential properties.	Ion Acoustics
Transport Note	Assessment of the transport and access considerations	Local Transport Projects
Application Form	Application form providing details of the proposal.	

1.2 Environmental Impact Assessment (EIA)

Consideration has been given to whether the proposed development constitutes EIA development.

The relevant EIA Regulations are set out in the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 and The Town and Country Planning (Environmental Impact Assessment) (Amendment) Regulations 2015. Paragraph 3 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 provides thresholds for development for which an EIA is a mandatory requirement (Schedule 1) and where it is a discretionary requirement (Schedule 2).

The proposed development does not fall within Schedule 1. Paragraph 3 of The Town and Country Planning (Environmental Impact Assessment) Regulations 2011 sets advisory threshold at which an EIA may be required, which are presented in Table 2 below. The development falls under the category of *'industrial installations for the production of electricity, steam and hot water'* in Schedule 2. The applicable threshold for such Schedule 2 development for the possible need for EIA is if the area of development exceeds 0.5ha. In this case the application site is 0.4 ha and the compound area itself is only 0.16 ha and as such the development does not fall within this threshold so no EIA is required.

Table 2- Extract from EIA Regulations

Description of Proposed Development	Applicable Thresholds and Criteria
3 Energy industry	
(a) Industrial installations for the production of electricity, steam and hot water (unless included in Schedule 1);	The area of development exceeds 0.5 hectare.

2. The Site and Context

2.1 Site description

The application is leased by New Farm Energy Limited (the applicant) and is currently an agricultural field used for grazing. The site is located to the south-east of New Farm, near the village of Tutbury to the north-west and Rolleston on Dove to the south-east. Figure 1 shows the location of the site.

There are no statutory or non-statutory areas designated for landscape or nature conservation purposes within the site boundary or its immediate vicinity. There are no statutory or non-statutory sites designated for heritage conservation purposes within the site boundary and the nearest statutory designation is 0.3km to the north-west of the site.

There are no Public Rights of Way (PRoW) within the site boundary or its immediate vicinity. The closest PRoW is located approximately 0.7km north-west of the northern boundary starting at Cornmill Lane and ending approximately 0.6km north-west of the northern boundary at Burton Road (identified as Tutbury 6a). There is a further PRoW located approximately 0.6km north-west of the northern boundary starting east of the Tutbury by-pass to the north of New Farm and ending approximately 0.6km north east of the northern boundary at Cornmill Lane (identified as Tutbury 6b).

2.2 Access

The vehicular access to the site would utilise the existing farm access via the eastern side of the A511 (Burton Road). Access would be required for the construction period and for infrequent diesel deliveries during the operational period.

The internal access track materials will depend on site conditions but are likely to consist of compacted recycled material, cleaned and selected from borrow pits, of typically 300mm thick on top of geotextil. This would be topped with 100mm of recycled material. A Transport Note has been prepared demonstrating the suitability of the access and assessing potential impacts (see Local Transport Projects, August 2016).

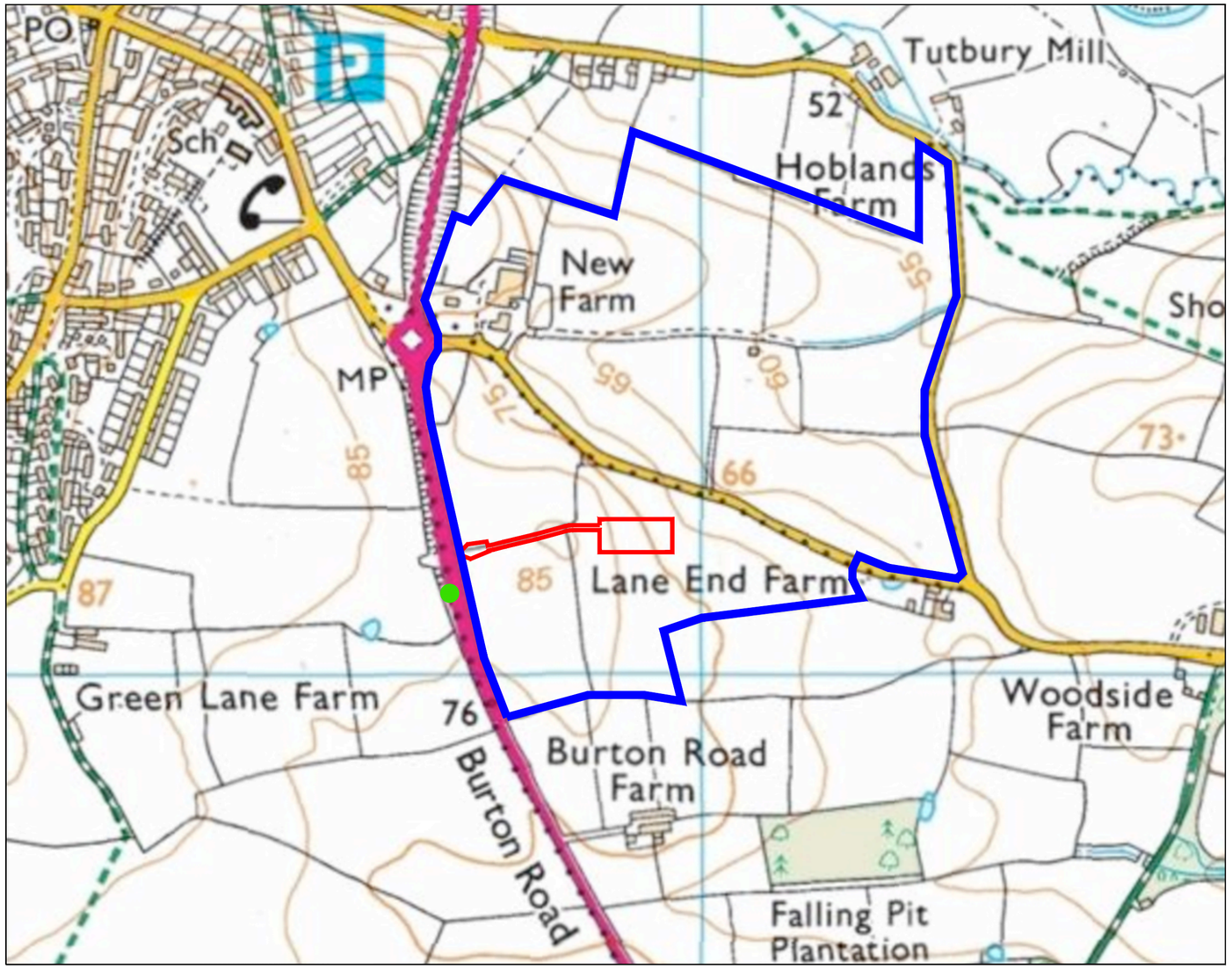
2.3 Design of Proposal

The project will be a small scale, rapid response, capacity mechanism plant. These unmanned emergency back-up power plants operate autonomously and form part of the solution to the problems facing the electricity generation and supply industries brought about by the retirement of old plant and decarbonisation of electricity production. These plants can be 'switched on' at very short notice to ensure the lights stay on when there is a significant demand for electricity or an unexpected drop in supply. When operating at its full capacity of 10MW the plant could power the equivalent of over 20,000 homes[1]. FGF plants are necessary to cope with peaks in electricity demand in the context of the closure of old electricity generating plants, the intermittency of renewable energy generation and the continuing increase in demand for electricity. The plants will supply electricity to local businesses and dwellings, via the National Grid.

The site area is 0.4 hectares, with a new internal access road of 200m in length. The development would be enclosed within a secure compound for security purposes, with an acoustic fence to minimise noise impacts. The project would be fuelled using diesel and consequently the location has been selected to minimise air and noise impacts on residential properties. Impacts are further minimised by the fact that the plants are emergency back-up plants and consequently only operate for only 2% of the time. It is estimated that the plant would be operational for approximately 200 hours per annum for an average of

[1] This is based on the assumption that the plant is operating at the full 10MW/hr, with the household calculation based on the average household electricity consumption of 4,266kWh per year.

Figure 1: Location Plan



KEY

- SITE LOCATION
- EXTENT OF THE PROPERTY AROUND SITE
- PROPOSED POINT OF CONNECTION

System Details

System Size DC:	~10.0 MW
Cable Length:	~200 m
Development Area:	0.41 ha / 1.03 acres
No of Diesel Generators:	25 x 500kW
No of Transformers:	4
Access Road Lenght:	280 metres
Compound Area:	0.16 ha / 0.40 acres

DRAWING NUMBER

1 - Site Location Plan - New Farm

DRAWING TITLE

Diesel Generation 10 MW,
OS Master Map,
Site Location Plan

ADDRESS

New Farm,
Burton Rd, Burton-on-Trent,
Staffordshire
DE13 9NF

Lyric Energy

39 Austenway,
Gerrards Cross Bucks SL9 8NN
Company Number 10077874
info@lyricenergy.co.uk

Rev	Date	Drawn	Check	App'd
00	08 / 07 / 2016	NMR	AM	PVR
01	28 / 07 / 2016	NMR	AM	PVR
02	01 / 08 / 2016	NMR	AM	PVR
03	05 / 08 / 2016	NMR	AM	PVR

0 100 200 300 400 500m

1 : 5000 @ A3

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Our Ref number: 15

55 minutes at a time. The operation would generally coincide with peaks in demand, for example, early evenings in winter. The generators are not anticipated to operate during the nigh time period of 22:30 to 07:00 hours.

The layout of the scheme includes up to 25 generators, each generator will have a capacity of 400kW.

The scheme will include a compound containing:

- 25 diesel generators
- 4 transformers
- A Distribution Network Operator cubicle and a Customer Substation
- Diesel will be stored on-site in a double bunded storage tank. The tank would be 10.5m x 2m by 2.5m and will have a storage capacity of approx. 52.5 cubic metres. The diesel will be discharged from the delivery tankers directly into the storage tank.
- Infra-red and/ or thermal imaging CCTV cameras will be installed to the fence to provide security coverage of the site
- Acoustic Fence

A layout plan of the proposed facility is presented in Figure 2. The development would be low lying, with the generators, transformers and fuel tank all being 2m or under in height. The DNO cubicle, customer substation and security fencing would be necessarily higher than the main development, but would cover a limited area.

The application would be for a temporary development with a lifetime of 25 years. This is anticipated to be the time required to adapt our electricity supply system to cope with demand without back-up plants by, for example, developing new generation plants

Generators

The generators will be located within individual modular enclosures, which would be constructed of galvanised steel protected by polyester powder coat paint. The enclosures are protected to ensure they are water resilient. The candidate generator is the Himoinsa HSW-505 T5, see Appendix 1 for details.

The site would include 25 generators, with each one being 5m x 1.7m x 1.5m. Each generator would have a capacity of 400kW, providing a total capacity of approximately 10MW at the site. The 25 generators would be installed in four rows.

The candidate generator has been used as the base for assessments, although given that the cost availability of generators can vary over time, a similar but alternative generator may be purchased.

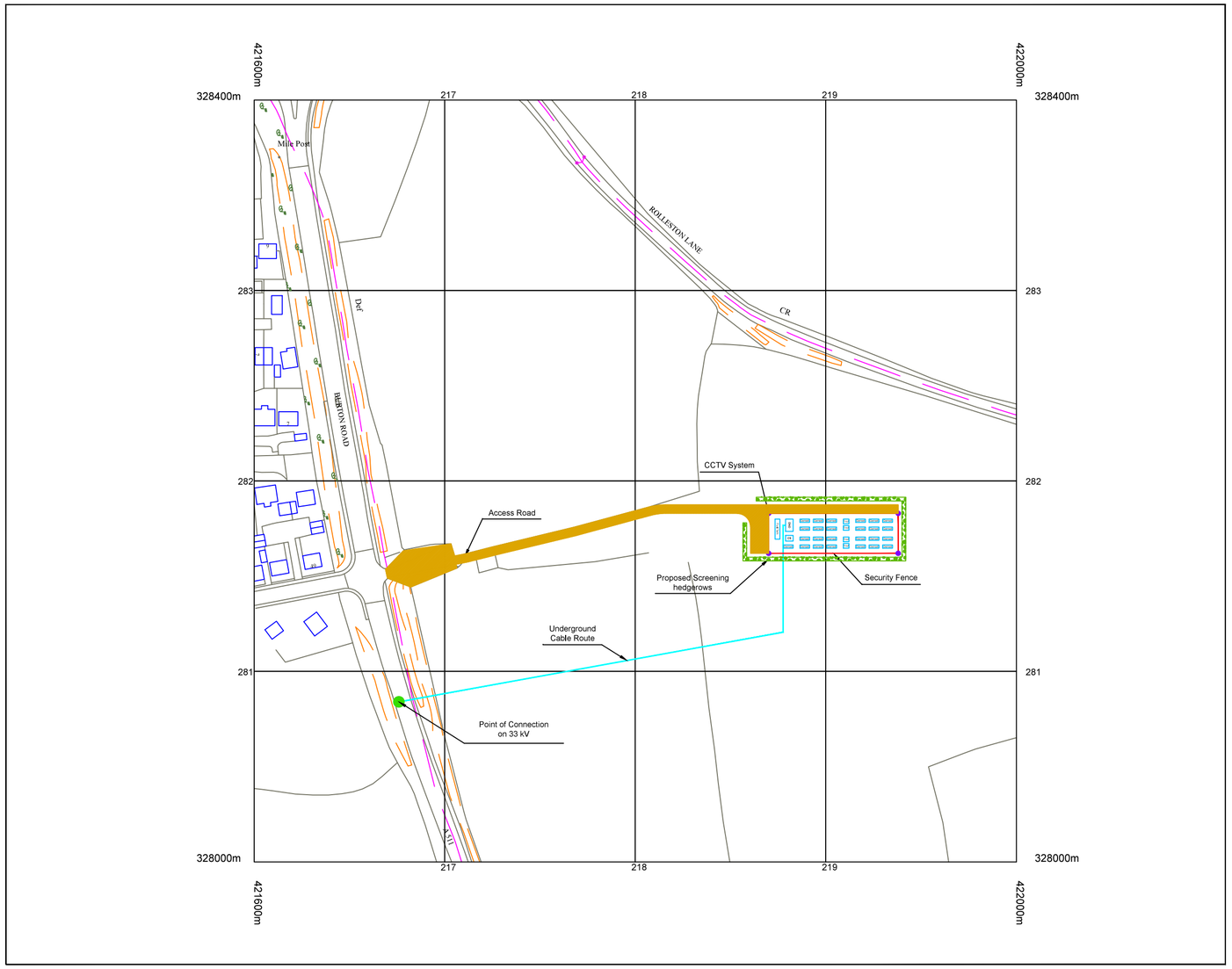
National Grid sets out times when it will call upon FGFs to provide short term operating reserve capacity in its tenders. The hours of operation have been based on the following operating windows which were adopted from information provided by the Short-Term Operating Reserve (STOR) section of the National Grid website. :

- AM Peak Operation: between 07:00 and 14:00 approx.; and,
- PM Peak Operation: between 16:30 and 22:00 approx.

The above indicates the general times of day when the schemes may be called upon, but given that they are only required for short periods of time, the schemes would operate for an average of 55 minutes per occasion within these time windows. The maximum time schemes are anticipated to operate for is 2 hours at a time, with operation of approximately 200 hours per annum.

Maintaining access to a secure electricity supply is vital to the social and economic well-being of our communities. This plant will help ensure a secure electricity supply is maintained.

Figure 2: Layout Plan



KEY

- SECURITY FENCE
- ACCESS ROAD
- PUBLIC RIGHT OF WAY
- WATERCOURSES
- LANDFORM
- EXISTING BUILDINGS
- POLITICAL OR ADMINISTRATIVE BOUNDARY
- Fuel Tank — PLANT EQUIPMENT
- PROPOSED SCREENING HEDGEROWS
- SECURITY CAMERA

System Details

System Size DC:	~10.0 MW
Cable Length:	~200 m
Development Area:	0.41 ha / 1.03 acres
No of Diesel Generators:	25 x 500kW
No of Transformers:	4
Access Road Lenght:	280 metres
Compound Area:	0.16 ha / 0.40 acres

DRAWING NUMBER

2A - Project Layout - New Farm

DRAWING TITLE

**Diesel Generation 10 MW,
OS Master Map,
Project Layout**

ADDRESS

**New Farm,
Burton Rd, Burton-on-Trent,
Staffordshire
DE13 9NF**

Lyric Energy

39 Austenway,
Gerrards Cross Bucks SL9 8NN
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0 50 100 150 200 250m

1 : 2000 @ A3

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Our Ref number: 15

Transformers

Four transformers would be installed to step up the low voltage electricity produced at the site to high voltage for efficient transportation of electricity to the grid connection point. The transformers would be 3m x 2.3m x 2.7m.

Fuel Tank

A fuel tank would be constructed on site for the storage of diesel fuel. The tank would be 10m x 2.5m x 2m.

Substations and Cable Route

The development will require two cubicles containing grid connection equipment, one for the Distribution Network Operator (DNO) and one for the customer. The DNO cubicle would measure 6.58m x 4.42m x 3.94m and the Customer Substation 3.65m x 2.75m x 2.9m.

The FGF would be connected to the local electricity distribution network via electricity cables that will be installed below ground. These works will be carried out by the DNO under their permitted development rights as a Statutory Undertaker. The responsibility for maintenance and monitoring of the electrical cabling onwards from the point of connection to the electricity distribution network lies with the DNO. The grid connection works do not therefore form part of this planning application.

Fencing and Screening

The compound would be enclosed by a solid acoustic fence of a maximum height of 3m, with vehicle gates to allow vehicle and pedestrian access. Appropriate signage will be displayed on the fencing and gates, and the fence will be appropriately stained to minimise visual impacts. The fence would be constructed as per the specifications in the Noise Assessment (Ion Acoustics, 2016) to minimise noise levels.

No external lighting will be required other than temporarily during construction. Emergency lighting will be brought to site only when required.

It is proposed to plant hedgerows outside the fencing to screen the development from views.

Temporary Construction Compound

A temporary construction compound would be developed during the construction period to accommodate portacabin-type buildings in addition to providing an area for material storage and construction vehicles to turn around, if required. Portacabins are required for offices, toilets, canteen and storage. The compound will contain temporary parking spaces for staff.

At the end of the construction period, the compound and all equipment will be removed.

3. Planning History

3.1 Planning History in the Immediate Area

A planning history search was undertaken to review previous applications on the site and adjoining properties. Table 3 provides a summary of the applications considered most relevant to the proposed development.

A residential development, sited approximately 0.3km SW of the western boundary of the FGF was approved conditionally in 2015 (application P/2014/01211). Another residential development, sited approximately 0.3km west of the western boundary of the FGF was approved conditionally in 2012 (P/2011/00546/CEH/PO). These residential developments have been considered when assessing the impact of the scheme on residential amenity (including noise and air quality).

No other extant consents were identified on or adjacent to the site that might be affected.

Table 3: Planning History

Planning Application Reference	Address	Description of development	Decision	Distance from Development (approx.)
P/2016/00717	Land at Burton Road Tutbury Staffordshire	Outline application for the erection of 12 self-build dwellings including access	Registered 11/06/2016	0.6km South-west of Western Boundary
P/2014/01211	Land at Burton Road Tutbury Staffordshire	Erection of 15 dwellings with associated garage blocks and access and formation of additional car parking spaces for the community building.	Conditional Approval – Delegated 03-11-2015	0.3km South-west of Western Boundary
P/2015/01073	New Farm Rolleston Lane Tutbury Staffordshire DE13 9HE	Screening Opinion	No Objection 20-08-2015	
P/2011/00546/CEH/PO	Land at Burton Road Tutbury Staffordshire	Erection of 212 dwellings and associated garages, erection of 14 commercial units and a community building and the provision of public open space, allotments and a sports pitch, including the formation of two vehicular accesses	Conditional Approval - Committee 10-05-2012	0.3km West of Western Boundary
P/2013/00984	Land at Burton Road Tutbury Staffordshire	Substitution of house types for 47 dwellings as previously approved on P/2011/00546/CEH/PO (AMENDED PLANS RECEIVED 22 OCTOBER 2013)	Conditional Approval – Delegated 07-03-2014	
P/2014/00570	Land at Burton Road Tutbury Staffordshire	Application under Section 73 of the Town and Country Planning Act 1990 for a Minor Material Amendment for the substitution of houses types for 47 dwellings without complying with Condition 2 of planning permission P/2013/00984 relating to amendments to the approved plans by way of re-	Conditional Approval – Delegated 03-12-2014	

Planning Application Reference	Address	Description of development	Decision	Distance from Development (approx.)
		positioning Plots 10-14 and associated fencing and parking		

3.2 Previous Applications for Flexible Generation Facilities in East Staffordshire

A review of the East Staffordshire Borough Council web-site was undertaken to locate any other examples of similar schemes in the district, as detailed in Table 4 below. Given the limitations of the search criteria, it is possible that more applications have been submitted that the team did not locate. Both applications that have been determined have been consented.

Table 4: Planning History, Other FGF in East Staffordshire

Planning Application Reference	Address	Description of development	Decision
16/00246/FUL	Land To North East Of Electricity Substation Fordbridge Lane South Normanton	Emergency Standby Electricity Generation Facility comprising 14 generators with transformers, a single storey and a 5.2m high control room, welfare unit, 5 fuel tanks and 3m high acoustic fence and 2x 6m high pole mounted security cameras	In Progress
16/00160/SCREEN	Electricity Substation Fordbridge Lane Blackwell Business Park Blackwell	Environmental Impact Assessment Screening Opinion for proposed emergency standby electricity generation facility.	Environmental Assessment NOT Required 13 May 2016
15/00460/FUL	Land Approximately 150M East Of WH Davis Langwith Road Shirebrook	Proposed stand by electricity generator compound comprising 10 generators, 5 diesel fuel tanks, 5 transformers, 1 switchgear room within a 4.5m high acoustic fence and 1 switchroom.	Approved 26 Apr 2016
15/00415/FUL	Whitwell Energy Park Southfield Lane Whitwell	Erection of generator plant with chimney, transformers and ancillary equipment to provide back-up electricity generation powered by natural gas.	Approved 08 Oct 2015
13/00496/SCREEN	Land South Of Former Bath House Old Colliery Industrial Estate Southfield Lane Whitwell	Erection of plant and equipment to provide back-up electricity generation	Environmental Assessment NOT Required 31 Jan 2014

4. Planning Policy Context

4.1 National Policy

The **National Planning Policy Framework** (NPPF) was adopted in March 2012. The NPPF sets out national planning policy and is a material consideration when determining planning applications. The NPPF sets out the Government's proposed economic, environmental and planning policies for England.

Paragraph 98 of the NPPF states that:

> *'When determining planning applications, local planning authorities should:*
>
> *…*
>
> *• Approve the application if its impacts are (or can be made) acceptable'.*

And that:

> *'…decision-takers at every level should seek to approve applications for sustainable development where possible'* (*para* 187).

The NPPF emphasises that supporting the delivery of renewable energy schemes is central to sustainable development (para 93) and that Local Planning Authorities should have a positive strategy to promote energy from decentralised, renewable and low carbon sources (para 97).

Whilst the proposed development is not powered by renewables, FGFs provide a support mechanism to the wider Local Distribution Network. With the growth of renewable and low carbon sources and the retirement of oil and coal fired power stations, this development will contribute to the efficiency during this transitional period, as well as be in line with the Government's aspirations for securing alternative energy supplies. FGF schemes allow for a higher proportion of renewables in the energy mix by providing a mechanism for the grid to cope with the intermittent supply of electricity from renewable sources. FGFs also provide a decentralised energy source, specifically to provide electricity to residents and businesses in the local area. Therefore, the local authority should promote FGF schemes in line with para 97 of the NPPF.

The **National Planning Practice Guidance** (NPPG) (March 2014) provides guidance to accompany the NPPF and is regularly updated. The NPPG recognises the imperative for the UK to provide a secure energy supply to cope with the varying demand. The FGF proposed will provide electricity to cope with such demand and managing the variability of wind and solar generation.

With regard to developments that generate noise, the NPPG provides the following guidance:

> *'Local planning authorities' plan-making and decision taking should take account of the acoustic environment and in doing so consider:*
>
> - *whether or not a significant adverse effect is occurring or likely to occur;*
> - *whether or not an adverse effect is occurring or likely to occur; and*
> - *whether or not a good standard of amenity can be achieved.*
>
> *In line with the Explanatory Note of the Noise Policy Statement for England, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase wherever applicable) is, or would be, above or below the 'significant observed adverse effect level' and the lowest observed adverse effect level for the given*

situation. As noise is a complex technical issue, it may be appropriate to seek experienced specialist assistance when applying this policy' (Para 003).

As explored further in section 5.6, the scheme will not lead to a significant adverse impact in terms of noise.

With regard to developments that may impact on air quality, the NPPG provides the following guidance for LPAs to consider:

- *'the 'baseline' local air quality;*
- *whether the proposed development could significantly change air quality during the construction and operational phases; and/or*
- *whether there is likely to be a significant increase in the number of people exposed to a problem with air quality, such as when new residential properties are proposed in an area known to experience poor air quality'* (para 006).

As explored in section 5.7, the air quality assessment demonstrates that there will be no additional people exposed to air quality issues that exceed set limits as a result of the scheme.

4.2 Local Planning Policy

The statutory development plan for the Local Authority is the East Staffordshire Borough Council Local Plan (2012-2031) adopted October 2015.

NPPF paragraph 14 states that a presumption in favour of sustainable development should be seen as golden thread running through decision taking and this means that:

- *'approving development proposal that accord with the development plan without delay; and*
- *where the development plan is absent, silent or relevant policies are out-of-date, granting permission unless:*
  - *any adverse impacts of doing so would significantly and demonstrably outweigh the benefits, when assessed against the policies in this Framework taken as a whole; or*
  - *specific policies in this Framework indicate development should be restricted.'*

The East Staffordshire Borough Council Local Plan is silent on any policy/guidance covering FGFs, with no policies on fossil fuel electricity generation or back up electricity supply schemes. Therefore, the above provisions apply.

The most relevant policies to the scheme are summarised in table 5. The development has been assessed against these policies as detailed in this Planning, Design and Access Statement and each of the accompanying environmental assessments.

There are no allocations within the site but as the site is not within a settlement framework, it is recognised as Countryside within Strategic Policy 8 (SP8). Appropriate sites to support FGFs like the one proposed at New Farm are uncommon as there are limited locations where there is sufficient grid connection to permit the additional standby reserve. They are also required to be sited within close proximity to connect to the Local Distribution Network to avoid any losses associated with long distance transmission of electricity. In addition, a rural location is often required to ensure that they are located a suitable distance away from sensitive receptors in order to minimise any noise and air quality impacts.

Table 5: East Staffordshire Local Plan (2012-2013) Policies (Adopted October 2015)	
Policy No	**Policy**
Strategic Policy 8	**SP8** states that development outside settlement boundaries will not be permitted unless it means one of a set of criteria, including where the development is: *'… infrastructure development where an overriding need for the development to be located in the countryside can be demonstrated'… or* *'provision for renewable energy generation, of a scale and design appropriate to its location'.* The project is considered to meet the first of these criteria as the noise and air quality impacts of such schemes mean they are generally not appropriate in very close proximity to residential dwellings. The second criteria illustrates that 'renewable energy' is also seen as suitable where its scale and design are appropriate. Whilst the scheme is not renewable energy, it is a decentralised electricity generation scheme that is often best located in more rural locations so has similarities with renewable energy schemes. Where proposals fit into the above categories (as this scheme does), it will be judged against the following criteria (in brackets is an assessment of how the scheme complies with each criterion): * Not adversely affect the amenity of existing landowners, including nearby residential properties (see sections 5.5 and 5.6) * Do not introduce considerable urban form (whole report, the scheme is small) * Proximity to settlements where there are advantages of sustainable linkages (this criterion does not apply to this scheme) * Siting and environmental impacts are compatible with the character of the area (see section 5) * Design are visually well related to the proposed site and its setting (see section 5.7 and 5.10) * Landscaping takes into account immediate impacts and distant views (see section 5.10) * No adverse impact on the transport and highway network (see section 5.8) * Need to maintain land of high agricultural value for food production (see section 5.3)
Strategic Policy 14	**SP14** considers the Rural Economy. Farm diversification proposals are identified as being supported where they make a long-term contribution to sustaining the agricultural enterprise as a whole and where it is consistent with its rural location.
Strategic Policy 29	**SP29** aims to ensure that developmen retains, protects and enhances features of biological or geological interest, and provides for the appropriate management of these features. Development that would have direct or indirect adverse effect on European, national or local designated sites and non-statutory sites will not be permitted unless; they cannot be located on alternative sites, the benefits clearly outweigh the impacts or prevention, mitigation and compensation measures are provided.
Strategic Policy 35	**SP35** states that development proposals should provide appropriate infrastructure measures to mitigate the adverse effects of development traffic and other environmental and safety impacts.
Detailed Policy 1	**DP1** identifies that development should respond positively to the context of the surrounding area, exhibit a high quality of design and should be acceptable in terms of a number of criteria based guidance. The main criteria relating to the FGF is its relationship with the characteristics of the site and the surrounding landscape's character and appearance, the height and massing of the development in relation to any vistas or views and the layout of the development in terms of its circulation routes.
Detailed Policy 7	**DP7** states that proposals will be granted where they will not give rise to unacceptable levels of noise, light, ground, air or water pollution.

5.0 Planning Appraisal of the Proposed Development

5.1 Introduction

The following section provides an assessment of the extent that the proposed development complies with the planning policy framework. Section 38 of the Planning and Compulsory Purchase Act 2004 requires that planning applications be determined in accordance with the development plan unless material considerations indicate otherwise. Therefore, both the development plan and relevant material considerations are assessed here.

5.2 Electricity Generation and Energy Security

The closure of a number of power stations in recent years, alongside an increase in electricity demand and an increase in intermittent supplies from renewable energy have led to a situation where the electricity supply in England is increasingly insecure.

As discussed above, the proposed FGF at New Farm will support the National Grid during periods of peak electricity demand or when intermittent renewable energy sources fail to deliver as much electricity generation as expected. **National policy supports continued production of electricity using fossil fuels, such as diesel, as part of a sustainable energy mix.**

In July 2011, National Policy Statement EN-1 was published and presented to Parliament pursuant to Section 5(9) of the Planning Act 2008. Whilst this policy statement was originally intended for the determination of Nationally Significant Infrastructure Projects (projects over 50MW), it also represents a '*material consideration in decision making on applications that fall under the Town and Country Planning Act 1990 (as amended)'* (paragraph 1.2.1). Relevant extracts from the NPS include:

- Paragraph 3.6.1 states that fossil fuel power stations play a vital role in providing reliable electricity supplies: they can be operated flexibly in response to changes in supply and demand, and provide diversity in our energy mix and will continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy.
- Paragraph 3.6.3 recognises that some of new conventional generating capacity needed is likely to come from new fossil fuel generating capacity in order to maintain security of supply, and to provide flexible back-up for intermittent renewable energy from wind.
- Section 3.7 states that fossil fuel generating stations contribute to security of energy supply by using fuel from a variety of suppliers and operating flexibly.

The continuing growth of renewables, combined with the closure of the power stations has meant the electricity capacity margin (the average difference between demand for electricity and the supply available expressed as a percentage) has fallen according to Ofgem (April 2016)[2]:

> *'This will likely continue to be the case for the next two winters until new gas, nuclear and renewables sources begin to come online and demand-side management initiatives reduce the need for supplies'.*

The National Grid's publication of the Winter Outlook Report 2015/2016 identified the following:

- *Loss of load expectation is 1.1 hours/year, equivalent to a de-rated margin of 5.1%*
- *There is an increased likelihood that we will use the contingency balancing reserve procured for this winter to assist in system balancing* (Key Messages page 13).

[2] Infographic: Energy Security Ofgem (29 April 2016) https://www.ofgem.gov.uk/publications-and-updates/infographic-energy-security last accessed 26th July 2016.

The FGF will provide energy balancing services (mainly during winter) via the Government's newly introduced capacity market (part of the Electricity Market Reform Act) for the National Grid. The FGF proposed at New Farm will be connected to the local grid network in order to avoid any unnecessary losses associated with the transmission of electricity over long distances. The scale and impacts of the FGF are minimal in comparison to the need to increase the resilience of electricity supply to local requirements during peak demand times.

Whilst the plant will run on fossil fuels, the total hours of operation are extremely limited and therefore the carbon impact of this development are also small. This development will contribute to the efficiency during this transitional period, and is in line with the Government's overarching role to secure alternative energy supplies by supporting the transition to a low carbon future in a changing climate (para 17 of the NPPF).

As set out above and throughout this Planning, Design and Access Statement, there is a supportive national policy context as well as policies within the emerging draft Local Plan, to enhance the security of electricity supply to the local and national network. The FGF proposed at New Farm plays an important role in facilitating this and it is considered that there is a strong need for this form of development.

5.3 Development in a Rural Area and Diversification

In general, planning policies tend to discourage development in rural areas in favour of development in towns and cities. However, the development at New Farm has been intentionally located away from the main built up form of settlements and existing residential buildings as far as possible to minimise noise, air quality and visual impacts. Indeed, locating a FGF immediately adjacent to settlements would directly conflict with policies that aim to minimise the impact of such developments on residential amenity (e.g. Strategic Policy 8). Whilst it would be inaccurate to say that such schemes can only be developed in a rural area, given the requirements of the site, it is likely that the best locations for FGF schemes will often be in more sparsely populated rural settings.

National planning policies encourage developments that support the local economy and enable rural diversification. Farm Diversification is considered under Strategic Policy 14 (SP14): Rural Economy which states: *'Farm Diversification proposals will be supported where they can make a long-term contribution to sustaining the agricultural enterprise as a whole and where the proposal is consistent with is rural location in terms of use, setting and scale.'*

Paragraph 28 of the NPPF identifies that policies should support economic growth in rural areas in order to 'create jobs and prosperity by taking a positive approach to sustainable new development'. The policy also outlines the promotion of diversification of agricultural land.

The proposed FGF would support the farming enterprise at New Farm, as it would add a supplementary revenue stream to this local business, which although small, is nonetheless a tangible benefit to the local economy via rural diversification. The scheme will generate this income whilst requiring a very limited area of land, having very little effect on existing agricultural activities. In comparison, the same capacity of electricity could be generated using 20 500kW wind turbines (approximately 60-80m in height) or a solar scheme covering an area of approximately 20 hectares. Therefore, in comparison to other electricity generation schemes that could be used to diversify activities, the area required is very small.

5.4 Ecology

An Ecological Impact Assessment has been undertaken to assess the impact of the scheme on site habitats, designated sites and protected species.

The site at New Farm does not lie within any areas that are subject to statutory or non-statutory designations for nature conservation. No Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites were identified within 5km of the sites location.

The nearest identified statutory designation is Old River Dove, Marston on Dove Site of Special Scientific Interest (SSSI) located approximately 1.7km north-east of the eastern boundary. There is a second SSSI (Hilton Gravel Pits) located approximately 4.1km north-east of the north-eastern site boundary and Kingfisher Trail Local Nature Reserve (LNR) is located approx. 4.3km south-east of the southern boundary.

There are three Local Wildlife Sites (LWS) within 2km of the site these are Marston Crossing Oxbow LWS (approximately 1.5km), Marston on Dove Church Oxbow LWS (approximately 1.7km) and River Dove LWS (approximately 1.8km).

Given the separation distances it is not considered that the proposed development would have any significant adverse impacts on any designated sites.

The Ecological Impact Assessment includes recommendations for mitigation and compensation. In particular, it recommends planting around the perimeter of the development to compensate for the predicted loss of a small number of shrubs and that shrub removal should be outside bird nesting season (typically March-August inclusive) or immediately preceded by a detailed inspection for nests.

The Assessment concludes that whilst there would be a loss of some Hawthorn Shrubs, the proposed scheme is not anticipated to result in any significant residual ecological impacts. The Air Quality Report undertaken by ADAS UK Ltd to accompany this application (see section 5.5 below) has assessed the impact on ecological receptors and concludes there would be no significant impacts from the proposed FGF.

The generators are anticipated to generate some level of noise when they are operational, with occasional additional noise levels from refuelling vehicles. The anticipated noise level is not considered to be high enough to significantly negatively impact any ecological receptors.

Subject to the appropriate measures to prevent the risk of pollution being put in place, the development is not considered to conflict with guidance contained within Detailed Policy 7 of the Local Plan as well as Local Plan policies on ecology not quoted above.

5.5 Air Quality

The FGF has been designed to minimise impacts on both human and ecological receptors in the vicinity of the site to ensure there are no significant impacts on air quality. The candidate generator selected is one of the lowest emission generators of its type, selected partially to minimise air quality impacts.

Two Air Quality Management Areas have been identified within the East Staffordshire Borough, both within Burton upon Trent some distance from the site. The site lies outside of any Air Quality Management Areas.

An Air Quality Assessment has been carried assessing the impact of all generators operating at full output for the maximum time per annum of 200 hours. As such, the predicted concentrations and deposition rates are likely to overestimate actual impacts.

The detailed modelling results show that predicted process contributions to atmospheric concentrations of nitrogen dioxide and particulate matter are below the relevant limits permitted by the Air Quality Standards Regulations at all relevant human exposure receptor points included within the assessment.

Facilities of this scale and nature operating at all times on diesel have been accepted at around 100 sites across the country without any further pollution mitigation measures.

The impact of the scheme on air quality is therefore assessed to be negligible at all receptors with reference to the impact descriptions provided by the Institute of Air Quality Management *Planning for Air Quality* Guidance. In summary it is concluded that the proposed development is not anticipated to result in a significant adverse effect on air quality at the receptors considered in the assessment and therefore the proposal would not be in conflict with guidance contained within Detailed Policy 7 of the Local Plan.

5.6 Noise

Construction Noise

The development has a relatively short construction duration. Given that the total number of vehicle trips during the construction period would be limited, it is not anticipated to have a significant impact on the local road network. Potential sources of noise during the construction phase of the proposed development include:

- Site preparation works;
- Operation of on-site static and mobile plant and machinery;
- Construction related traffic movement along transport route relating to the delivery and removal of plant, construction materials and wind turbine components; and
- Arrival and departure of construction staff.

Construction working hours are expected to be 7.00am to 7.00pm Monday to Saturday.

Once operational, maintenance and delivery visits are limited throughout the year and working hours would also be restricted to the above.

Therefore it is not anticipated that the potential noise from construction is in operation would have any significant impact on the residential amenity of adjoining occupiers.

Operational Noise

The proposed FGF location was selected to minimise the impact of the generators on noise levels at residential properties. The proposed site is located on land owned by New Farm to the north of the proposed site and is sited approximately 215m east of the A511. The proposed FGF would be located approximately 240m east from the nearest third-party sensitive receptor location which is considered to be the residential properties at Doves Keep, a new residential development.

The proposed site would contain 25 diesel generators and ancillary development. The generators will be housed in appropriate enclosures that would attenuate the overall sound level generated by the units. The compound would be encircled by an acoustic barrier, with the barrier height varying around the site relative to the local ground height, with a maximum height of 3m to the east of the site and 2m to the west. The fence would be constructed with solid panels achieving a surface mass of at least 10 kg/m^2.

Aside from the diesel generators, there are no on-site noise sources which would generate any levels of noise that would require assessment as the transformers and staff welfare facilities generate very low noise levels and are unlikely to be noticeable beyond the proposed site boundary.

A separate noise report has been carried out by Ion Acoustics and submitted with this application. Ion Acoustics have undertaken discussions with Chris Humphries at East Staffordshire Borough Council to discuss monitoring locations and the use of BS 4142 for the assessment. A baseline noise survey was carried out between 13th and 15th July 2016, to determine the baseline noise climate of the area. The measurements were made at two locations within the land holdings of New Farm. The locations were identified as being representative of the noise climate at the nearest third-party noise sensitive receptor locations.

The assessment has been carried out in accordance with the standard method for assessing noise of an industrial nature affecting nearby housing is British Standard BS 4142 'Method for rating and assessing industrial and commercial sound'. The noise assessment concludes that the generators must be provided in an acoustic enclosure to ensure each generators meets a maximum sound power level of 94 dB L_{WA}.

A noise barrier of a maximum height of 3m would be provided around the scheme and the performance of the generator in terms of noise generated will be moderated at the factory to minimise noise levels.

With these mitigation measures in place, the noise of the generators would not result in any adverse impacts at the nearest noise sensitive receptor locations.

The Assessment therefore concludes that there are no noise-related issues associated with the proposed FGF at New Farm that cannot be controlled by a suitably worded condition, and that the operation of the FGF should not cause any unacceptable loss of amenity to the occupants of the nearest noise sensitive receptors. The submitted Noise Assessment demonstrates that the noise from the FGF at residential properties adhere to the limits set out in BS 4142: 2014 to minimise adverse impact and National Planning Policy Guidance and is considered in line with Strategic Policy 1, Strategic Policy 8 and Detailed Policy 7 of the Local Plan in this respect.

5.7 Heritage

There are no designated heritage assets on the site so there will be no direct impacts from the FGF on such assets.

The site is not located within or adjacent to a Conservation Area (CA). The nearest CA is Tutbury Conservation Area, and the site is located approximately 0.7km to the south-east. The distance between the site and the CA and the intervening screening by the village of Tutbury will ensure impacts are not significant. There is a second CA in Rolleston on Dove, and the site is located approximately 0.8km to the north-east. Again, the distance and intervening screening of agricultural land, hedgerows and tree lines will reduce any significant impacts on the CA.

The closest Listed Building to the site is the Grade II Milepost at SK2161028370 located approximately 0.3km north-west of the northern boundary. This Milepost is located on the other side of, and adjacent to the A511 and given its location and the separation distance, it is not anticipated that the development would significantly affect its setting.

There is a Grade II Listed Building Tutbury Mill and House located approximately 0.7km to the north-east of the northern boundary. Due to the distance separating the FGF and Listed Building, and intervening screening of Rolleston Lane, Cornmill Lane and the agricultural land and hedgerows, it is not anticipated that there would be any significant impacts on the Listed Building.

There are two Grade I Listed Buildings within Tutbury these are The Castle approximately 1.3km North West of the Northern Boundary and the Church of St Mary approximately 1.2km north west of the northern boundary. Given the separation distance between the Listed Buildings and the FGF, along with intervening screening provided by the village of Tutbury, it is not considered that there would be any unacceptable impacts on the Listed Buildings.

The nearest Scheduled Monuments are three sections of medieval town boundary located to the south and west of Tutbury approximately 0.7km, 0.8km and 1.2km north-west of the northern boundary. The edge of the village of Tutbury along with the intervening distance and hedgerows provide screening of the site from the scheduled monuments. There are two Scheduled Monuments in the vicinity of Tutbury Castle these are located approximately 1.3km north-west of the northern boundary, as these are on the opposite side of Tutbury some screening is provided, as Tutbury Castle is in part located upon a hill the site may be visible from this point.

The Scheduled Monument in St Mary's Churchyard (Anglo-Scandinavian Cross) is located approximately 1.7km south east of the southern boundary in Rolleston on Dove, the western edge of the settlement provides further screening from the proposed development.

The development would have a relatively modest footprint (0.4ha), with the compound area taking up only 0.16 ha. A condition can be applied to ensure no significant impacts on undiscovered archaeological remains if deemed necessary given the small site area.

Overall, no heritage constraints that have been identified that would preclude the development of the site as a FGF and the development is considered in line with Strategic Policy 25 and Detailed Policy 5 of the Local Plan in this respect.

5.8 Transport

The FGF will utilise the existing farm access of the eastern side of the A511 (Burton Road), which has been established and utilised by HCVs for a number of years. Access would be required for the construction period and for infrequent diesel deliveries during the operational period.

A Transport Note has been provided by Local Transport Projects to assess the impact of the project on the highway and ensure the site access is appropriate. The Transport Note identifies that the development would have only a negligible, if not imperceptible impact, on the operation of the local network and that the proposed development would not be expected to have a detrimental impact in road safety, traffic and highway terms.

Once the FGF is operational there would only be a very limited number of transport movements associated with this development per year. The 25 400kW generators proposed would require approx. 500,000 litres[3] of diesel per annum, which would then be equivalent to approximately 28 deliveries per annum (with each delivery being 18,000 litres). Therefore, the impact on the local road network would be negligible.

Given the minimal impact the scheme would have on traffic generation and the short construction period, the scheme would not impact on amenity or place additional demands on transport infrastructure and is considered to be accordance with Strategic Policies 8 and 35 of the Local Plan.

5.9 Flood Risk and Drainage

The NPPF states that the planning system should contribute to and enhance the natural and local environment by:

> *'Preventing both new and existing development from contributing to or being but at unacceptable risk from, or adversely affect by unacceptable levels…of water pollution…' (Paragraph 109).*

The Environment Agency Flood Risk Maps indicates that the application site is within Flood Zone 1, in an area with the lowest flood risk.

The total development would take place over a relatively small footprint (0.4 ha) and the development does not constitute vulnerable development. It would be designed to be resilient to flooding through locating electrical equipment and the diesel storage tanks such that it would not be at risk during a flood event. Given the modest development, any surface run off would be limited. However, Sustainable Drainage Systems (SuDS) could be installed to further minimise impacts.

To minimise the risk of any water contamination during construction, best practice measures would be followed to minimise the risk of pollution, which would be detailed within a Construction Environmental Management Plan (CEMP). The construction works will adhere to best practice guidance such as the CIRIA 'Control of water pollution from construction sites. Guidance for consultants and contractors' (C532) and the Environment Agency's pollution prevention advice and guidance. No water or waste materials would be discharged into the field ditches and no material would be stored within 10m of the field ditches or any other watercourse. Where possible excavation of soils will take place during dry conditions. Soil stockpiles will be kept for minimum periods only or will be covered.

[3] This calculation is based on the fuel consumption of the candidate generator for this site, which is the Himoinsa HSW-505 T5

The diesel storage tank will be a double skinned tank either located within a secondary containment system which can hold 110% of the volume or will be a integrally bunded tank which has an internal secondary containment that can hold 110% of the volume. The diesel delivery area will be on an impermeable surface and will be isolated from surface water drainage system. The fill point will either be within the secondary containment system or over a drip tray. Overfill prevention device will be used to safeguard against spills. An incident response plan will be put in place to deal with any spills or other incidents and a spill kit kept on site.

During the operation of the FGF, there would be limited requirement for maintenance and deliveries of diesel. The number of deliveries would be extremely limited to approximately 28 trips per annum and therefore little risk to pollution of watercourses.

The development is not considered to conflict with the policy guidance contained within Strategic Policy 27 and Detailed Policy 7 of the Local Plan.

5.10 Landscape and Visual Impact

The proposal is sited to the east of the urban fringe of Tutbury on the adjacent side of the A511 running north to south of the site. The immediate site setting is agricultural, however, the area includes residential properties located to the west, New Farm to the north and Shaw G E & Sons to the south-east. The site is between the Burton Road to the west and Rolleston Lane to the east.

The undulating topography to the site and dense tree line to the west and hedgerow to the east of the site along Burton Road and Rolleston Lane help to screen the site. Views are further contained to the east and south-east by the wider valley topography as it continues to gently slope, and interrupted by transport infrastructure such as the A511 and Rolleston Lane.

The site is located approximately 240m from the nearest third-party receptor, and 215m east of the A511, Burton Road. The residential properties to the west of the proposed site and on the opposite side of the A511 includes a 2 storey dormer property to the entrance of Doves Keep residential development facing north-east towards the development. Due to the topography of the land and the gentle slope to the east, the proposed development may be set lower in the landform than the Doves Keep residential development. With the existing screening of hedgerows and the tree line bordering either side of the A511 forming part of the view from the house and the separation distance, it is considered that where available, any views of the proposed FGF from the property would not cause significant adverse impacts that living conditions would be unacceptable harmed.

The proposal will ensure that all the existing landscape features such as hedgerows and mature vegetation will be retained.

The proposal is for a FGF with a modest development footprint of 0.4 ha. The landscape is considered capable of absorbing this development compromising a compound that is well screened by landscaping planting. The proposal would not result in permanent changes to the landscape character.

Whilst a 25 year life span could be considered a long period in terms of a person's lifespan, it is a very short period of time in terms of the evolution of the landscape and the change is not permanent and would be entirely reversible. The essential character of the landscape would not be unacceptably or irreversibly harmed.

The site does not lie within or form part of a World Heritage Site, National Park, Area of Outstanding Natural Beauty (AONB), National Park or other such statutory landscape character or quality designations.

The closest PRoW is located approximately 0.7km north-west of the northern boundary starting at Cornmill Lane and ending approximately 0.6km north-west of the northern boundary at Burton Road (identified as Tutbury 6a). There is a further PRoW located approximately 0.6km north-west of the

northern boundary starting east of the Tutbury by-pass to the north of New Farm and ending approximately 0.6km north east of the northern boundary at Cornmill Lane (identified as Tutbury 6b). Due to the separation distances and the urban and urban fringe character of the footpaths, with existing visual detractors and degraded elements in the landscape, this reduces sensitivity and visual impact of users of the PRoW. The mitigation planting will also reduce any visual impacts.

The proposal would have some limited conflict with Strategic Policy 1 and Detailed Policy 1 of the Local Plan, whilst there would be some limited impacts upon the rural character of the countryside, these would be localised and temporary in their form. The benefits of the scheme in helping to maintain the UK's energy security far outweigh the limited harm on the countryside as there would be no significant landscape or visual impacts that would arise from this proposal.

6.0 Summary and Conclusions

There is clear support in national policy and guidance to maximise the UK's energy security and the function of this FGF specifically provides a support mechanism to the wider Local Distribution Network. The NPPF also states that Local Planning Authorities should have a positive strategy to promote energy from decentralised, renewable and low carbon sources (para 97).

With the growth of renewable and low carbon sources and the retirement of oil and coal fired power stations, this development will contribute to the efficiency during this transitional period, as well as be in line with the Government's aspirations for securing alternative energy supplies.

When considering the assessment as a whole, the scheme represents sustainable development and there is therefore a presumption in favour of granting planning permission in accordance with the NPPF. The proposal is considered to accord well with the development plan and therefore, is in line with advice in the NPPF (paragraph 14), and should be approved without delay.

Detailed assessments have been carried out that demonstrate that all impacts will be acceptable, with methodologies developed in consultation with statutory bodies.

The statutory development plan for the Local Authority Area is the East Staffordshire Borough Local Plan (2012-2031) which contains no specific policy that seeks to address the delivery of decentralised energy. The development plan is therefore considered to be 'absent/silent' on small-scale fossil fuel development and it is considered appropriate that the second part of NPPF paragraph 14 should be applied to this proposal. This would mean that permission should be granted unless adverse impacts would significantly and demonstrably outweigh the benefits. This PDA Statement demonstrates that on the contrary, the benefits of the scheme significantly outweigh the adverse impacts and there are no policies that indicate development should be restricted.

Table 6 summarises the impacts of the scheme, using the following colour coding scheme.

++ Positive Impact	+ Positive Impact	No/ negligible impact	- Adverse impact	- - Adverse Impacts

Table 6: Summary of FGF Scheme Impacts

Topic	Impact of FGF
Electricity Supply	Provides up to 10MW of electricity generation. Electricity can be generated flexibly to meet demand.

Rural diversification and economy	Provides rural diversification and income to a farmer whilst using a very small area of land. Can complement agricultural practices. FGFs are essential to the economy to keep the lights on and businesses operating.
Ecology	The scheme would result in a loss of a few Hawthorn shrubs and a small loss of an agricultural field. It would result in compensatory planting around the FGF.
Air Quality	This low emission generator would result in few emissions and given the infrequent operation and distance from receptors, impacts are considered negligible and acceptable.
Noise	There would be some noise during construction and during operation. However, noise levels would fall below the existing background noise level at the two closest third party properties.
Heritage	The scheme would not directly or indirectly affect the significance of any designated heritage assets. A condition can be applied to ensure no significant impacts on undiscovered archaeological remains if deemed necessary given the small site area.
Transport	The access would run along the existing farm access and west/south-west of the FGF. Operational traffic would include approximately 28 deliveries per annum. The local road network can cope easily with this negligible increase in traffic.
Flood Risk	The area of the development is small, located in Flood Risk Zone 1 and can be designed to be resilient to flooding. No Flood Risk Assessment is required.
Landscape and Visual Impact	The FGF is relatively low lying, covers a small site area and would be screened by new planting. It is not near sensitive receptors and would not result in removal of existing landscape features, other than a small number of shrubs.

As assessed here, the adverse impacts are localised, limited, and temporary and clearly outweighed by the benefits of the scheme, in accordance with local and national planning policies and should therefore be approved at the Council's earliest given opportunity.

Appendix 1: Himoinsa Generator Details

HIMOINSA®
THE ENERGY

MODEL
HSW-505 T5
INDUSTRIAL RANGE
Soundproof
Powered by SCANIA

- H1
- WATER-COOLED
- THREE PHASE
- 50 HZ
- STAGE 3A
- DIESEL

Generating Rates

SERVICE		PRP	STANDBY
Power	kVA	501	550
Power	kW	401	440
Rated Speed	r.p.m.	1.500	
Standard Voltage	V	400/230	
Available Voltages	V	230 - 230/132	
Rated at power factor	Cos Phi	0,8	

HIMOINSA Company with quality certification ISO 9001
HIMOINSA gensets are compliant with EC mark which includes the following directives:

- 2006/42/CE Machinery safety.
- 2006/95/EC Low voltage.
- 2004/108/CE Electromagnetic compatibility.
- 2000/14/EC Sound Power level. Noise emissions outdoor equipment. (amended by 2005/88/EC)
- 97/68/EC Emissions of gaseous and particulate pollutants. (amended by 2002/88/EC & 2004/26/EC)
- EN 12100, EN 13857, EN 60204

Ambient conditions of reference according to ISO 8528-1:2005 normative: 1000 mbar, 25ºC, 30% relative humidity.

Prime Power (PRP):
According to ISO 8528-1:2005, Prime power is the maximum power which a generating set is capable of delivering continuously whilst supplying a variable electrical load when operated for an unlimited number of hours per year under the agreed operating conditions with the maintenance intervals and procedures being carried out as prescribed by the manufacturer. The permissible average power output (Ppp) over 24 h of operation shall not exceed 70 % of the PRP.

Emergency Standby Power (ESP):
According to ISO 8528-1:2005, Emergency standby power is the maximum power available during a variable electrical power sequence, under the stated operating conditions, for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 h of operation per year with the maintenance intervals and procedures being carried out as prescribed by the manufacturers. The permissible average power output over 24 h of operation shall not exceed 70 % of the ESP

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Manufacture facilities:
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Subsidiaries:
ITALY | PORTUGAL | POLAND | GERMANY | SINGAPORE | UAE | MEXICO | PANAMÁ | ARGENTINA | UK

MODEL
HSW-505 T5
INDUSTRIAL RANGE
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Engine Specifications 1.500 r.p.m.

ENGINE		PRP
Rated Output	kW	425
Manufacturer		SCANIA
Model		DC16 71A (02-01)
Engine Type		Diesel 4 strokes-cycle
Injection Type		Direct
Aspiration Type		Turbocharged and aftercooled
Ciylinders Arrangement		90º V8
Bore and Stroke	mm	130 x 154
Displacement	L	16,4
Cooling System		coolant
Lube Oil Specifications		ACEA E3,E4,E5 or E7
Compression Ratio		16,7:1
Fuel Consumption 100% PRP	l/h	103,9
Fuel Consumption 75 % PRP	l/h	80,22
Fuel Consumption 50 % PRP	l/h	53,73
Lube Oil Consumption Full Load	g/kwh	0,3
Total Oil Capacity	L	48
Governor	Type	Electrical
Air Filter	Type	Dry
Inner diameter exhaust pipe	mm	104

Generator

Generator		
Poles	Num	4
Winding Conections (standard)		Star-serie
Frame Mounting		S-1 14"
Insulation	Class	H class
Enclosure (according IEC-34-5)		IP23
Exciter System		self-excited, brushless
Voltage Regulator		A.V.R. (Electronic)
Bearing		Single bearing
Coupling		Flexible disc
Coating type		Standard (Vacuum impregnation)

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Application Data

Exhaust System		
Maximum exhaust temperature	ºC	524
Exhaust Gas Flow	Kg/s	0,55
Exhaust Flange Size (external diameter)	mm	160
Heat evacuated through exhaut pipe	KCal/Kwh	603,21

Air Inlet System		
Intake Air Flow	m3/h	1600
Cooling Air Flow	m3/s	14,17
Alternator fan air flow	m3/s	1,035

Starting System		
Starting Motor	kW	7
Starting Motor	CV	9,52
Auxiliary Voltage	Vcc	24

Fuel System		
Fuel Oil Specifications		Diesel
Fuel Tank	L	740
Other Fuel tank capacity	L	2.090

ISO 9001 SYSTEM CERTIFICATION
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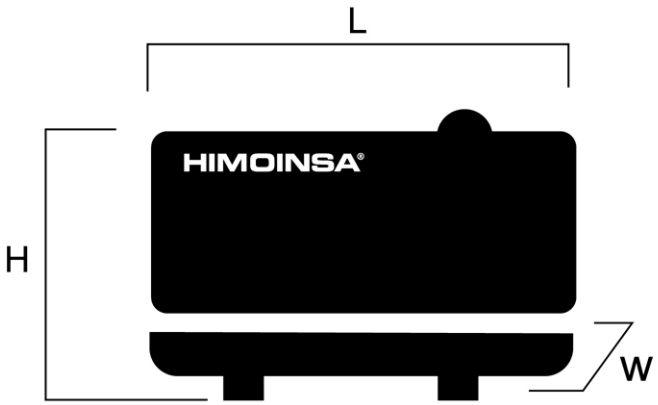
Dimensions



H1	Weight and Dimensions		
(L)	Length	mm	4.500
(H)	Height	mm	2.340
(W)	Width	mm	1.800
	Maximum shipping volume (standard suplier)	m3	18,95
(*)	Wet weight	Kg	5.081
	Fuel tank capacity	L	740
	Autonomy	Hours	9
	Sound pressure level	dB(A)@7m	73 ± 2,3

(*) (with standard accesories)

STANDARD VERSION (Steel tank)

Himoinsa has the right to modify any characteristic without prior notice.
Weights and dimensions based on standard products. Illustrations may include optional equipment.
Technical data described here correspond with the available information at the moment of printing.
Industrial design under patent.

Local Distributor

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Dimensions of other available versions

Weight and Dimensions		
(L) Length	mm	4.500
(H) Height	mm	2.740
(W) Width	mm	1.800
Maximum shipping volume (standard suplier)	m3	22,19
(*) Wet weight	Kg	5.692
Fuel tank capacity	L	2.090,0
Autonomy	Hours	26
Sound pressure level	dB(A)@7m	73 ± 2,3

(*) (with standard accesories)

HIGH CAPACITY VERSION (Steel tank)

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CONTROL PANEL MODEL

M5

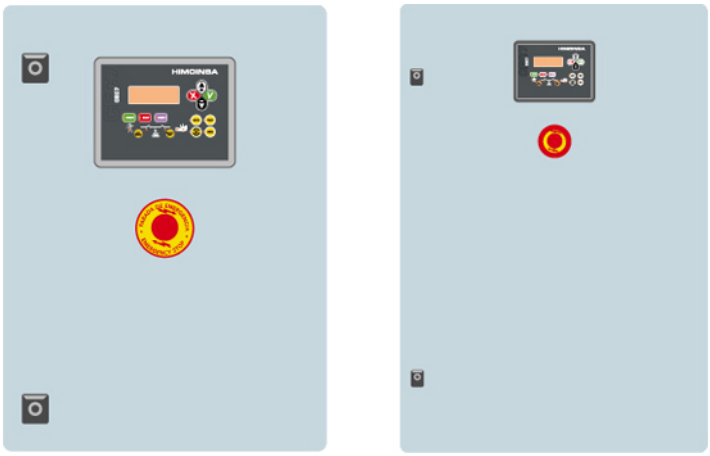
Digital manual auto-start control panel and thermal magnetic protection (according to voltage and phase) and differential relay. Digital control unit CEM7

AS5

Automatic control panel WITHOUT ATS (Automatic Transfer Switch) and WITHOUT mains control with CEM7. (*) As optional AS5 with CEA7. Automatic control panel without ATS (automatic transfer switch) and with mains control.

CC2

Himoinsa External ATS WITH visualization display. Digital control unit CEC7



ISO 9001 SYSTEM CERTIFICATION

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HIMOINSA® THE ENERGY

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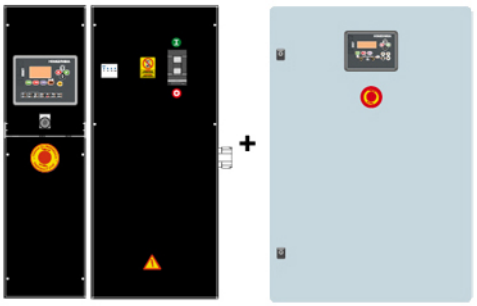
CONTROL PANEL MODEL

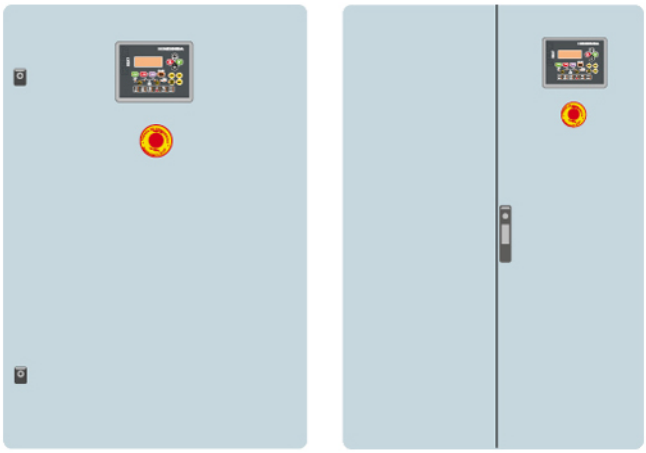
AS5 + CC2

Automatic with mains control and ATS with visualization. The visualization will be in the genset and in the ATS box. Digital control unit CEM7+CEC7



AC5

Automatic Mains Failure control panel. Wall mounted Automatic control panel including transfer switch with thermal magnetic protection (according to voltage and phase). Digital control unit CEA7



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HIMOINSA® THE ENERGY

MODEL
HSW-505 T5
INDUSTRIAL RANGE
Soundproof
Powered by SCANIA

Controller features (I)

• : Standar
x : Not included
• : Optional

Generator Readings	CEM 7	CEA 7	CEC 7	CEM7 + CEC7
Voltage among phases	•	•	•	•
Voltage between neutral and phase	•	•	•	•
Amperage	•	•	•	•
Frequency	•	•	•	•
Aparent power (Kva)	•	•	•	•
Active power (Kw)	•	•	•	•
Reactive power (kVAr)	•	•	•	•
Power factor	•	•	•	•
Mains Readings	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
Voltage among phases	x	•	•	•
Voltage among phases and neutral	x	•	•	•
Amperage	x	•	•	•
Frequency	x	•	•	•
Aparent power	x	•	x	x
Active power	x	•	x	x
Reactive power	x	•	x	x
Power factor	x	•	x	x
Engine Readings	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
Coolant temperature	•	•	x	•
Oil pressure	•	•	x	•
Fuel level	•	•	x	•
Battery voltage	•	•	x	•
R.P.M	•	•	x	•
Battery charge alternator voltage	•	•	x	•
Engine Protections	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
High water temperature	•	•	x	•
High water temperature by sensor	•	•	x	•
Low water temperature by sensor	•	•	x	•
Low oil pressure	•	•	x	•
Low oil pressure by sensor	•	•	x	•
Low water level	•	•	x	•
Unexpected shutdown	•	•	x	•

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Controller features (II)

• : Standar
x : Not included
• : Optional

Engine Protections	CEM 7	CEA 7	CEC 7	CEM7 + CEC7
Fuel storage	•	•	x	•
Fuel storage by sensor	•	•	x	•
Stop failure	•	•	x	•
Battery voltage failure	•	•	x	•
Battery charge alternator failure	•	•	x	•
Overspeed	•	•	x	•
Underspeed	•	•	x	•
Start failure	•	•	x	•
Emergency stop	•	•	•	•
Alternator Protections	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
High frequency	•	•	•	•
Low frequency	•	•	•	•
High voltage	•	•	•	•
Low voltage	•	•	•	•
Short-circuit	•	•	x	•
Asymetry among phases	•	•	•	•
Incorrect phase sequence	•	•	•	•
Inverse power	•	•	x	•
Overload	•	•	x	•
Genset signal droop	•	•	•	•
Counters	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
Total hour counter	•	•	•	•
Partial hour counter	•	•	•	•
Kilowatimeter	•	•	•	•
Starts valid counters	•	•	•	•
Starts failure counters	•	•	•	•
Maintenance	•	•	•	•
Comunications	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
RS232	•	•	•	•
RS485	•	•	•	•
Modbus IP	•	•	•	•
Modbus	•	•	•	•

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Controller features (III)

• : Standar
x : Not included
• : Optional

Comunications	CEM 7	CEA 7	CEC 7	CEM7 + CEC7
CCLAN	•	•	x	•
Software for PC	•	•	•	•
Analogic modem	•	•	•	•
GSM/GPRS modem	•	•	•	•
Remote screen	•	•	x	•
Telesignal	• (8 + 4)	• (8 + 4)	x	• (8 + 4)
J1939	•	•	x	•
Features	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
Alarm history	• (10) / (opc. +100)	• (10) / (opc. +100)	• (10) / (opc. +100)	• (10) / (opc. +100)
External start	•	•	•	•
Start inhibition	•	•	•	•
Mains failure start	x	•	•	•
Start under normative EJP	•	•	x	•
Pre-heating engine control	•	•	x	•
Genset contactor activation	•	•	•	•
Mains & Genset contactor activation	x	•	•	•
Fuel transfer control	•	•	x	•
Engine temperature control	•	•	x	•
Manual override	•	•	x	•
Programmable alarms	•	•	x	•
Genset start function in test mode	•	•	•	•
Programmable outputs	•	•	x	•
Multilingual	•	•	•	•
Special Functions	**CEM 7**	**CEA 7**	**CEC 7**	**CEM7 + CEC7**
Positioning GPS	•	•	x	•
Sychronization	•	•	x	•
Mains sychronization	•	•	x	•
Second Zero elimination	•	•	x	•
RAM7	•	•	x	•
Remote screen	•	•	x	•
Programming timer	•	•	x	•

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Generating Sets Standard and Optional Features

Engine

· Diesel engine
· 4 strokes-cycle
· Water-cooled
· 24V Electrical system
· Radiator with blowing fan
· Water separator decanting filter (visible level)
· Electronic governor
· Sender WT
· Senders OP
· Radiator coolant level sender
· Dry air cleaner
· Hot parts protection
· Moving parts protection

Alternator

· Self-excited and Self-regulated
· IP23 protection degree
· Insulation H class

Electrical system

· Electric control panel with measurements devices and control display (according to necessity and configuration)
· 4 poles circuit breaker
· Battery isolator
· Earth leakage protection adjustable (time & sensibility) standard in M5 and AS5 configuration with MCCB
· Battery charger (standard on automatic control panels)
· Pre-heating resistance (standard on automatic control panels) / water jacket heater
· Battery charger alternator with ground connection
· Starting battery/ies installed and connected to the engine (supports included)
· Ground connection electrical installation with connection ready for ground pike (not supplied)

Soundproofed version

· Steel made chassis
· Oil sump extraction kit

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Generating Sets Standard and Optional Features

Soundproofed version

- Versatility to assemble high capacity metallic fuel tank chassis
- Antivibration shock absorber
- Chassis with integrated fuel tank
- Fuel level sender
- Emergency stop button
- Sound attenuated canopy made of high quality steel metal.
- High mechanical strenght
- Low noise level
- Attenuation through high density rock wool material
- Epoxy Powder coating
- Easy acces for service mainteance
- Reinforced lifting eye to lift by crane
- Bunded chassis (works as liquids retention tray)
- Drain fuel tank cap
- Drain chassis cap
- Chasis ready for future mobile kit installation
- Steel made residential silencer -35db(A) attenuation.

Optional :
- 3 way valve fuel filling (available in 1/2" and 3/8" fittings)
- Fuel transfer pump

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