

The Grid Project Report

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Executive Summary

On learning from our Flanders and Paris partners that electrical cabinets were available to location filming crews to plug into, Film London began its own research into adopting this strategy in the UK's Capital.

The project has made considerable progress over the last six months and Arup has now completed the ROI analysis and reported its findings. In summary the analysis shows that even with a 25% cost uplift over diesel pricing, the ROI period would be 11.7yrs. The project is therefore financially unattractive for Film London to fund on a 100% basis.

Victoria Park has been identified by the Arup feasibility study as a pilot site. We would like to deliver a pilot at Victoria Park to test the cabinets, refine the model including the process of booking and servicing them to take then learnings on board before we roll them out to further sites in London. We are in the process of applying to Interreg Europe for Pilot Action funding for this site.

The GLA Good Growth Fund (GGF) has been identified as a potential source of finance for the generalisation. The GGF can fund up to 50% of the total project value leaving Film London to match fund the balance.

Two further unit-bases (Battersea Park and The Mall North Horse Ride) have been selected for the roll out. Both sites have sufficient production demand but where difficulties with planning consent are less likely to be encountered.

Background

Due to the UK tax relief, the London film and TV industry is booming and has been growing steadily over the last two decades. 2018 saw 202 feature films go into production with an interim total spend of £1.924 billion, the second highest recorded level of production spend on record.

2018 has seen a further boost in high-end television productions made in the UK with an interim spend of £1.173 billion across 119 productions, an increase of 4% on 2017's consolidated spend of £1.13 billion and also the highest level of spend since the introduction of tax relief.

The commercial and cultural strength of the UK's production sector is grounded in international confidence in the excellence of UK crews, the quality of the UK's state-of-the-art studios and facilities, our film-friendly locations, the expertise provided by the British Film Commission which is funded to deliver on inward investment and the attractive fiscal environment created by the Government's screen sector tax reliefs. This winning combination continues to cement the UK's reputation as the global destination of choice for film and TV production as well as making exportable films and television programmes.

From iconic landmarks to seemingly indistinct woodland, London's range of locations is rivalled by none and although London is often used to represent itself, it has also been put

to good use as a double for other parts of the world such as the US, Russia and many European countries.

Film London estimate that 70% of film and TV production takes place in and around London and the demand for suitable locations has never been greater.

When film & TV productions are filming at a location, they almost always establish a Unit Base as nearby as possible. The Unit Base is made up of production and technical vehicles to provide facilities such as catering, hair & make-up, costume and toilet facilities. The number of vehicles can vary from eight up to thirty or more and an example is pictured below:



To provide power to all the vehicles, productions will hire a minimum of two high power diesel generators such as the one seen in the centre of the picture.

Each generator consumes an average of 80 litres of diesel for each 12-hour period of use.

Unit Bases are normally booked for 24-hour periods to provide support for the cast and crew before, during and after the filming has taken place at the location nearby.

The generators themselves are hired from facility companies that specialise in film and TV work and the average specification is a 120kVA power output generator is able to supply single or 3-phase power and as the picture shows, numerous sockets are available should they be required.

The fuel itself is provided by the companies providing the generator as well as specialist suppliers with tankers who visit and supply Unit Bases.

Commercial diesel is used which costs an average of 70p per litre.

London Mayor's Environmental Strategy

The Mayor aims for London to be a zero-carbon city by 2050, with energy efficient buildings, clean transport and clean energy.

To ensure that London has the energy supply it needs in the future, and that the city does everything it can to limit its contribution to climate change, the Mayor wants to change the way London produces and consumes its energy. Old systems of heating, cooling and powering buildings using coal and gas must be replaced by cleaner, local renewable energy, and petrol and diesel vehicles must be replaced by zero emission ones. Londoners will also spend less on energy and use less energy overall through better building insulation, more efficient boilers and heating systems, smart technology and better access to more affordable energy tariffs. This will give Londoners secure access to the energy they need.

The Mayor's aim is for London to have the best air quality of any major world city by 2050: this goes beyond the purely legal requirements to protect human health and minimise inequality.

Film London is seeking to address both the Environment Strategy and the Cultural Strategy of the Mayor of London.

London is also committed to the Covenant of Mayors for Climate and Energy initiative and its Sustainable Energy and Climate Action Plan (SECAP). The Grid project would be an excellent example of good innovative practice in this context leading to the reduction of greenhouse gas emissions and improving climate resilience

Adapting Good Practice from Green Screen

Film London first became aware of potential solutions Flemish productions were working with during the Learning Day in conjunction with our second Steering Group meeting held in Brussels in November 2017. Tim Wagendorp showcased as part of his presentation portable electric cabinets for productions to plug into the grid.

In March 2018 Flanders produced a case study of a TV series *Buck*, a Flemish comedy series for Ketnet TV, which had achieved a 93% reduction in carbon emissions from energy use and saved over €20,000 by using an alternative power source on location.

Buck received funding and sustainability coaching from Green Screen partner VAF Media Fund.

Since most of the filming was in one location, a rented house in Keerbergen, Flanders, the crew were able to install a temporary electrical distribution box for their power supply. It has multiple advantages over traditional diesel generators:

- much cheaper than a traditional generator. The rent is approximately €15 per month, and the production only has to pay for the electricity it consumes.
- allows the production to choose a green electricity provider (a renewable energy source).
- reduces CO₂ emissions and air pollution by avoiding the use of fossil fuel, normally diesel, that would power a traditional generator.
- produces much less noise
- more efficient – there is no wasted electricity generation.
- more user friendly: plug and play, with no need to refill fuel.

By using mixed energy supplies from the local grid (1.93 tons of CO₂ over 11 days), the distribution box (0.28 tons of CO₂ over 60 days) and generator (0.23 tons of CO₂ over 2 days), *Buck's* energy strategy generated total emissions of only 2.44 tons of CO₂. By comparison, using a generator for the entire shoot (73 days) would have generated 38.1 tons of CO₂. This is a carbon saving of 93% on energy use.

Our partner VAF has shared with us details of suppliers in Flanders. Inspired by the Flemish practice, Film London embarked on the Grid project.

Grid project overview

The Grid Project is the name that has been given to the project examining the supply of green energy via the mains network to the eight key Unit Base locations used by productions when filming on location in London. The benefits of green energy via the mains network would be to cut emissions/particulates and noise pollution from diesel generators as well as reducing fuel costs for the production.

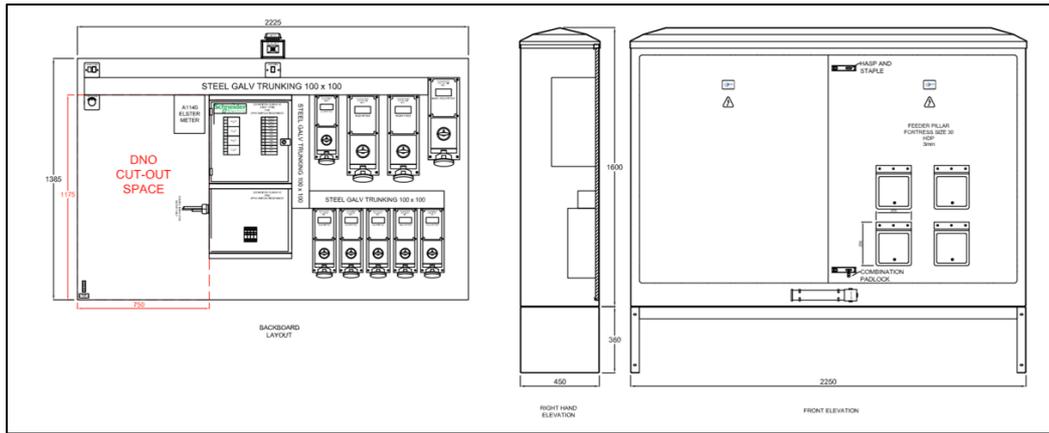
In simple terms the Grid Project will mean installing one or two mains supply cabinets at each of the London Unit Bases. Productions using the Unit Bases will then plug into the cabinets rather than plugging into diesel generators.

The cabinets would be constructed in steel, be highly secure, offer remote metering and be permanently installed. Each cabinet would offer between seven and nine sockets of both single and 3-phase and an example design can be seen below:

Grid Project Pilot Site

The project team has recommended that the first stage of implementation take place at a pilot site that is in a controlled area and one that is popular with film and TV productions. The team identified Victoria Park in Tower Hamlets as an ideal location as the Unit Base is statistically one of the top three most booked Unit Bases and the location itself is owned by the borough.

The location has been visited by the Industry Advisory Group to establish the best position for the electrical cabinet and UK Power Networks has provided detailed estimates for the installation and connection to the nearest sub-station. Arup commissioned a utility survey to ensure that the installation would won't conflict with other underground services. The borough of Tower Hamlets has confirmed that planning permission will not be required and that the installation can take place as a 'permitted development. The Film Office who represent the boroughs film interests has been involved from the outset and are in full support of the pilot site.



Industry Advisory Group (IAG)

The project is supported and advised by a group of eight established Location Managers, Unit Managers and Facilities Captains. In June 2019, membership of the IAG was comprehensively refreshed. All but two have been replaced with six more experienced and committed members. The project team anticipate recruiting one or two more members with experience as Facilities Managers. The first meeting of the new IAG membership was held on 12th June at Arup's offices in London.

Unit base locations

Originally nine locations were identified as being suitable for Grid Project cabinets.

Over recent months two locations were found to be unsuitable due to planning development (Doon Street SE1) and council reconstruction (Waterloo Place SW1). There are now seven locations within scope and they are listed below:

- Lincolns Inn Fields - Westminster WC2A 3TL
- North Horse Ride, Westminster SW1Y 5AH
- Northampton Road - Islington N1 2UX
- Battersea Park - Wandsworth SW11 4NJ
- Victoria Park - Tower Hamlets E9 5HD
- Russell Square – Camden WC1B 4HP
- Malet Street – Camden WC1E 7HX

Diesel consumption and CO₂ emission statistics

Since the last update in April 2019, Arup and the IAG has focussed considerable time and effort on the accuracy of the diesel consumption figures for site at Victoria Park. This required every unit base booking made during 2018 to be analysed and defined by the size of production (i.e. Feature film, TV drama or commercial).

Once the bookings had been categorised, the project team contacted two productions from each category to document the specific type and size of diesel generators used. The IAG then provided Arup with the times of peak and low usage during a typical 24-hour period.

Detailed analysis completed by Arup for Victoria Park shows that during 2018 production generators consumed 64,082 litres of diesel and 1,656 litres of petrol. The CO2 emitted by the generators was 169,556kg.

Stakeholders

Whilst Film London are leading the project, it has the unanimous support of respective Boroughs, Royal Parks, TfL, The Mayor's Office, the GLA, the Production Guild and BAFTA. A successful implementation would provide London with a unique advantage against other European capital cities.

Feasibility advisory partners

Electrical consultants: Arup Ltd

Green energy – Good Energy

Cabinet manufacturer – Lucy Zodium Ltd

Independent Connection Provider – UK Power Networks

Benefits

There are significant environmental benefits to moving the film and TV industry from diesel generators to mains powered electricity.

1. CO2 emissions would be reduced by 100%.
2. London has high levels of air pollution. The pollutants of most concern include tiny particles (particulate matter or PM) and the gas nitrogen dioxide (NO₂). Both are emitted by diesel vehicles among other sources. Most large cities have high levels of pollution; some parts of London are among the most polluted in Europe. The Grid Project would reduce PM and NO₂ emissions from film and TV productions at Unit Bases to zero.
3. Diesel generators can be noisy and even ultra-quiet versions can still be heard when operated through the night. This form of noise pollution leads to considerable difficulties when Unit Bases are close to residential locations. The problem is particularly acute during night time filming and it is not unusual for filming requests to be refused due to noise concerns. The Grid Project would significantly reduce this form of noise pollution at Unit Bases.
4. The Grid project could be an example of good and innovative practice for London within SECAPS / Covenant of the Mayors which London is signed up to.

Project finance

We are applying to Interreg Europe for pilot action funding to deliver a pilot at Victoria Park. The learnings of the pilot will be taken on board to inform the roll out to two further sites which were identified via the feasibility study –Battersea Park and North Horse Ride.

We will be seeking additional funds to support this roll out: potentially Good Growth Funding or new Mayoral funds which might become available during 2020 as well as funding from Trusts and Foundations.