

Power Tie-In Scenarios



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AT CREATIVE BC

Production Primer for Grid Tie-In Power

Power Tie-In Scenarios

This document has been created with the goal of distinguishing the multiple film production electrical power tie-in scenarios required to reduce the use of diesel generators, pollution, noise and parking footprint at film locations used on a regular basis. By giving each scenario a title, Reel Green™ hopes to assist location owners, BC Hydro and current or future electrical contractors with the proposal and development process of film specific power tie-ins.

In general, the motion picture industry requires power every time they film. For the most part, the minimum amount of power requested is a 200 amp, 120/208 volt, 3 phase service. A 400 amp, 120/208 volt, 3 phase service is common as well.

A 400 amp service, if used at max capacity, would draw approximately 150kw at 120/208 volts. The amount of power required for a production varies significantly however, providing at least 3 x 400 amp, 120/208 volt, 3 phase services to a production can generally eliminate the use of one or two diesel generators.

If a production is setting up a space to be used as a “studio space” or a construction mill with larger power needs to address the use of HVAC, power tools, lighting and all other production power needs, a production could ask for up to 12 to 16 of these 400amp, 120/208 volt, 3 phase services spread out over various areas.

SCENARIO #1: Short Duration Film Shoots

Temporary Tail Tie-Ins for Existing Electrical Panels

What: Temporary bare end tail Tie-Ins are common in filming locations that are used for short durations. Types of locations include, but are not limited to, office buildings, hotels, large homes, civic properties, institutions, warehouses, etc.

Who: Location teams should incorporate requests for temporary electrical tie -ins during early prep. Property owners, managers and liaisons should also consider this when film crews are looking to film at their location. In-house electricians, 3rd party contractors or Gaffers/Rigging Gaffers should be consulted to determine if a tie-in is feasible.









How: First step is to determine the service size or voltage. The best question for a locations team to start with is whether there is access to 200 amp or 400 amp, 120/208 volt, 3 phase power. In most circumstances, a building electrician/electrical contractor would be the right person to address questions should the location representative not know the answer. If needed, a third-party company can be hired to determine electrical capacity. This work must be done under a current electrical permit, either the buildings electrical permit (ideal) or the production's electrical permit.

Why: Temporary tie -ins are most likely the most cost effective way to use clean energy if an existing permanent connection is not available. Since they are temporary, they appeal to location owners/managers since they are less invasive and can be removed when not in use by a production company.

Costs: The use of temporary tie-ins can be charged back to a production company in the form of a rental fee and the cost of installation and removal by an in-house electrician or 3rd party should also be covered by production via the rental fee. This is an ideal scenario when running cable is not logistically practical.

Examples of Cost

For stakeholders worried about hydro usage cost

400 Amp Service		200 Amp Service	
 Power Load	380A @ 208V	 Power Load	180A @ 208V
 Draw	~136 kW	 Draw	~65 kW
 Time	12 hours	 Time	12 hours
 Estimated Cost	\$179/day	 Estimated Cost	\$89/day

Only if used at full capacity the entire time

Example: Top floor of high-end hotel that logistically cannot support running long lines of cable. Installation of temporary tie-ins is usually done by on-site building electricians or approved third party contractor prior to filming and removed when production is wrapped. Production would pay in this scenario.

This scenario is for facilities with existing panel space and capacity where cam-lock tails can be installed.

Temporary Tail Tie-Ins



SCENARIO #2: Buildings with Existing Infrastructure

Cam Lock Box with Separate Meter

What: Buildings that have existing cam lock panels that were commonly previously used for events or other uses that require additional power.

Who: Location teams should always ask about existing cam lock panels during early prep. BC Hydro should only be consulted regarding the possibility of installing a separate meter to avoid legacy pricing issues. Film lighting loads can “spike” in usage that can cause increased long-term billing in some cases involving commercial/industrial business hydro accounts.

How: Location teams and Gaffers/Rigging Gaffers should ask about the service size (amperage) and voltage that currently exist. If the service size can be easily identified, the next question that should be asked is how much surplus capacity is available which can be determined by reviewing bills that outline the regular consumption and/or by monitoring/metering over the course of a couple weeks. This would be determined by the building electrician/electrical contractor who holds the buildings operating electrical permit.

Why: Buildings that are going to be used long term or permanently as a film location or studio should consider installing cam lock panels in order to eliminate generator use which cuts down on environmental impact, equipment rental, generator and fuel costs and sound concerns.

Costs: The use of power through an existing cam lock system can be billed back to a production either through a flat, pre-negotiated rate or billed back from the owner’s hydro bill. Approximate costs can be calculated based on past billing or estimate rates per kw. If the building is on a lease and will be converted back for another use after the film company is done, legacy pricing must be considered. As described above.

Example: Old warehouse space that was previously used for manufacturing that has electrical panels in place that can be converted to suit the needs of the film industry by installing Cam Loc tails/connectors. For example, Molson Brewery or Fortress Building.

Meter reading before and after production use is required and needs to be facilitated by the billing party.

Existing Cam Lock Box



SCENARIO #3: Buildings without Infrastructure

Install Cam Lock Box with Meter

What: Buildings that do not have cam lock panels but have the power capacity to support a 400 amp or 200 amp panel require infrastructure once it is determined that the power capacity and electrical infrastructure is sound. This scenario most likely would only occur in a building that is being used for multiple filming days to justify and offset the expense of installation.

Who: Production and location teams should inquire about whether a property has ample service size and voltage to support power needs of a production. This inquiry should be in conjunction with the building electrician/permit holder for that particular location. At that point, a 3rd party contractor could be brought in to assess what needs to be installed. BC Hydro would only be consulted should there be any concern about load capacity or if a separate meter is required.

How: If the power capacity is already known, the location owner can have their electrician assess where connection might be possible and price out installing the proper infrastructure to attach cam locks. An adequate supply of power is necessary for this scenario to be possible.

Why: Buildings that are going to be used long term or permanently as a film location or studio should consider installing cam lock panels in order to eliminate generator use which cuts down on environmental impact, equipment rental, generator and fuel costs and sound concerns.

Costs: If the building is being leased by the production for a longer amount of time, production would most likely cover the costs of renting/installing and using the power. To avoid legacy pricing for the owners, ideally there could be a 2nd meter installed under the landlord's name but paid for by the production company. If a building owner is regularly renting to film productions, they may consider installing a cam lock panel specifically for film use. If they paid for the infrastructure up front, they could then charge back the productions to recoup the costs.

Example: Institutions like BCIT may have the load capacity to support a film specific tie-

in but do not currently have the infrastructure in place. In this scenario, after the infrastructure is in place, the customer in this case, would be BCIT and they would charge the production based on calculated costs to recoup the cost of the equipment and power being used.

Meter reading before and after production use is required and needs to be facilitated by the billing party.

Cam Lock Box



SCENARIO #4: Buildings without Enough Power

Service Upgrade – Switch Cans

What: If a production is setting up a long-term lease or a building is being converted into studio space but the available power does not support the production needs, infrastructure could be brought in to boost the service.

Who: BC Hydro would need to be consulted to determine whether there is an input line leading up the property line that could be used to draw power into the building. A third-party contractor could then be hired to install a transformer or drop a container with transformer/ switch gear that can be used on the property to supply power to the building. Property owners, location managers/liaisons or studio managers could use a hydro pole # to help with assessment of the grid capacity in the area.

How: Work on setting up a service upgrade would need to start with a location owner consulting with BC Hydro or a 3rd party contractor to ensure there is enough grid power available to provide the upgraded service. Process should be determined with BC Hydro.

Why: If a production or owner agrees to pay the cost of a service upgrade they could potentially make the property more attractive to productions down the road. Sustainability goals continue to grow as an important aspect of major US studios corporate responsibility goals and providing clean energy for companies to utilize is always considered a positive feature.

Costs: The cost of a service upgrade (ie. input line to the building) would most likely fall on the landlord or owner of the building however production may consider paying should it make sense budget wise. There would be two options from that point, either the production rents the necessary equipment or the landlord puts in permanent cam lock distribution.

Example: An established studio is operating under the impression that there is not enough power to support grid power to productions. BC Hydro could be consulted to determine if the input line could support more load. Manitoba Street Studios is an example of this.

Switch Can Exterior



Switch Can Interior



SCENARIO #5: Exterior Standalone Units

Power Kiosk

What: Fabricated power kiosk designed specifically for film production use. Requires an appropriate location where productions film or park frequently. Access, exact location, and feasibility based on existing infrastructure would all need to be considered for this scenario.

Who: Kiosks could be installed by a private property owner or by a municipality.

How: Municipal proposals for kiosks require data to establish their feasibility of being used in order to recoup the costs of installation. BC Hydro would be integral to the planning and vetting of locations for these kiosks.

Where: Location of the kiosks will vary but will be determined based on known data about previous generator parking sites, accessibility for industry and avoiding high use areas for other users i.e. EV charging stations.

Why: Installing power kiosks at frequently used parking/filming locations allows productions to eliminate the use of generators to support their work and demonstrates our respect for cast, crew and the communities we utilize. Owners of the kiosks can charge for the use of the unit and/or the power consumption to pay for the infrastructure and eventually potentially profit from its use.

Costs: Initial investment would need to come from funding or personal investment. Recouping the costs of the infrastructure could come from rental or access fees when productions make use of the kiosks. It should be metered/monitored to gauge the use.

Example: The City of Vancouver has 7 standalone power kiosks available at regularly used filming sites around the city. Other municipalities and companies have followed suit including the City of Maple Ridge and the Steveston Harbour Authority who both accessed the Reel Green™ Power Tie-Ins Program for funding support.

Power Kiosk



Appendix

Grid Tie-In Budgeting Table

Scenario	Installation Costs (Range)	Rental Fee/Costs (Range)	Hydro Usage Fees (Approx)
#1 Temporary Tail Tie-ins to Existing Panel	\$2,000.00 - \$6,000.00 approximately.	Minimal. This scenario would likely be by material purchase/install labour and hydro usage only.	11¢ - 14¢/KWH Unless legacy/demand charges apply.*
#2 Existing Cam-Lock Box with Meter	N/A. This scenario infers existing infrastructure.	Either flat fee daily/weekly or calculate from the meter to pay Hydro usage fees.	11¢ - 14¢/KWH Unless legacy/demand charges apply.*
#3 Install Panel with Cam-lock and Meter	\$10,000.00 - \$20,000.00 approximately.	Variable. Dependant on existing infrastructure this would be a combination of material costs to install and Hydro usage fees.	11¢ - 14¢/KWH Unless legacy/demand charges apply.*
#4 Not Enough Power - External Power Can/Transformer	Minimal install materials. Primarily a rental situation. This would likely involve a \$10,000.00 - \$15,000.00 hydro connection fee.	Substation rental of \$12,000.00 - \$15,000.00 per week plus per switch per week rental of approximately \$600.00 - \$800.00. Hydro usage fees as well.	11¢ - 14¢/KWH Unless legacy/demand charges apply.*
#5 Kiosk Units - Municipal or Private	None if existing and owned by City/Municipality or commercial/private owner.	Variable depending on city/municipal fees. Some may charge a Hydro meter fee	11¢ - 14¢/KWH Unless legacy/demand charges apply on commercial property. Usage fees from each Kiosk owner.*

**Consult an electrical contractor for an accurate estimation.*