Estimating with Pictures

Costs Guide for Relocation of Energex Assets

2025 August Version 09

Energex Limited

positive energy

Version Control

Version	Date	Changed By	Description
1	16/11/2017	Ben Nordkamp	New Doc (Combines the old Council & DTMR Ver 5) Updated costs & ACS Rates Applied & Includes 1.1 Risk Management Factor
6	03/09/2022	Ben Nordkamp	Updated resource & material costs with the new 2022-2023 ACS Rates & Overheads Applied; Updated Estimate 566818, Includes 1.1 Risk Management Factor
7	05/04/2024	Ben Nordkamp	Updated resource & material costs include the current 2023-2024 ACS Rates & Overheads Applied; Includes 1.1 Risk Management Factor.
8	01//08/t2024	Ben Nordkamp	Updated resource & material costs include the current 2024-2025 ACS Rates & Overheads Applied; Includes 1.1 Risk Management Factor.
9	01/08/2025	Ben Nordkamp	Updated resource & material costs include the current 2025-2026 ACS Rates & Overheads Applied; Includes 1.1 Risk Management Factor.

Contact details

Energex Limited
Zoe Relf
Email: zoe.relf@energyq.com.au

GPO Box 1461 Brisbane QLD 4001
26 Reddacliff Street Newstead QLD 4006
Telephone 13 12 53
www.energex.com.au

Energex Limited ABN 40 078 849 055

Contents

1. Introduction

This document provides a guide on costs for relocation of Energex assets prior to a detailed Total Outturn Cost (TOC) estimate being completed.

This guide will provide the indicative costs for the relocation of assets to assist with initial conversations with customers.

When reviewing the scope requirement for a project involving relocation of Energex assets, refer to the pictures in this guide to find a picture matching the construction of the asset requiring relocation. The estimated costs below the picture will provide an indicative cost for the asset relocation project.

Additional items to consider.
Where several poles require relocation in a run, some time and cost will need to be included for the transfer of the existing OH conductors. An additional allowance of $750/span should be made.

A traffic control allowance has been included in the estimated cost. However, some locations, like busy arterial roads during peak times, will attract additional costs and extra allowance would need to be included for these sites.

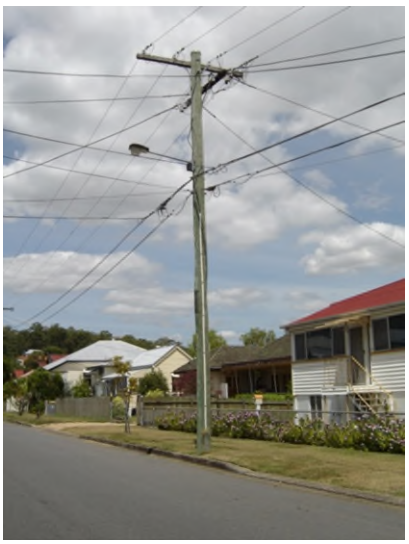
Other consideration that could mean additional costs need to be added on top of the estimated costs in this guide:

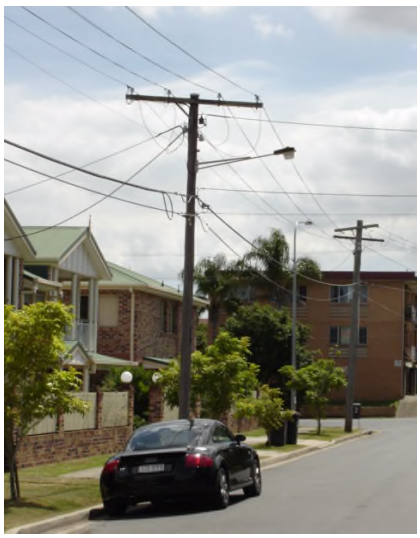
- Working on Motor Ways – overtime allowances due to restricted access during daylight hours.
- Working on busy arterial roads – overtime allowances due to road access restrictions enforced by Council / DTMR.
- Additional traffic control on motor ways, arterial roads, intersections etc.
- Underground cables will be difficult to estimate due to the unknown position of joints, pillars and the cable run itself.
- Excavation in rock.
- Relocation of communication (pilot) cable installed on the pole.
- Additional costs for relocation of termination / Connection boxes.
- Directional boring.
- Removal of waste material from site.
- Site re-instatement backfill and compaction requirements.
- The use of generators to ensure continuous supply.
- Management of fire ants.

A contingency allowance of 10% has been included in the estimates contained in this guide.

The costs in this guide are not suitable for use in creation of the TOC at the detailed design phase of the project. Project specific considerations should be factored into the TOC estimate to obtain a more detail and accurate estimate.

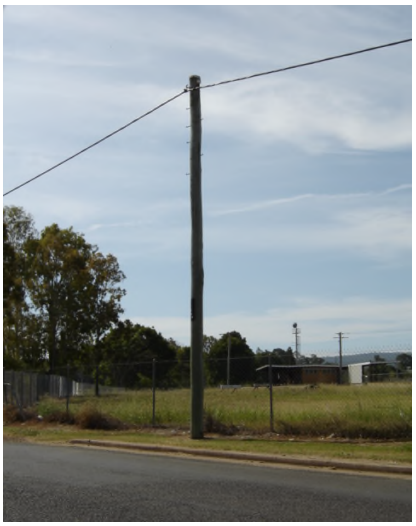
2. Simple Low Voltage Pole Replacements





EP1M – Replace LV Pin pole with streetlight, services and Broadband Communication Cable (BBCC)

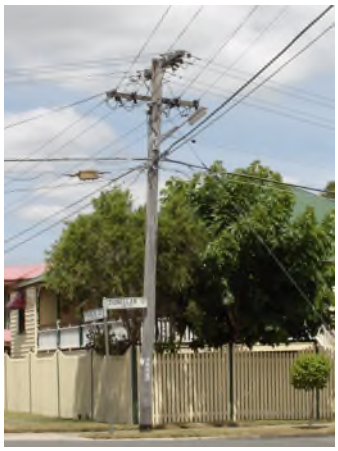
Est Cost $19,000



EP2M - Replace Pole with ABC conductor no streetlight or services

Est Cost $7,400

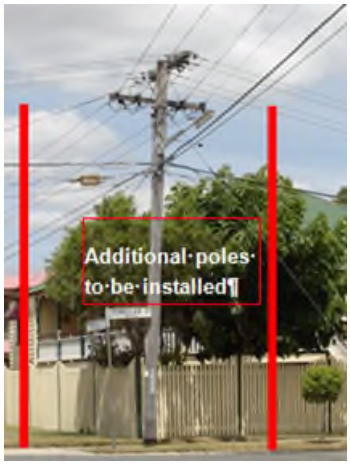
3. Complex Low Voltage Pole



EP3M – Replace LV pole at an intersection. Can be repositioned in a similar position using <u>one</u> new pole. However, most intersections will need to be re-configured by truncating.

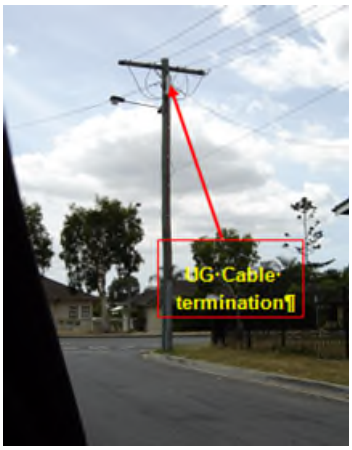
Refer to next picture **EP4M**

Est Cost $20,900



EP4M - Same LV pole at an intersection however 2 new poles will be required to truncate this corner

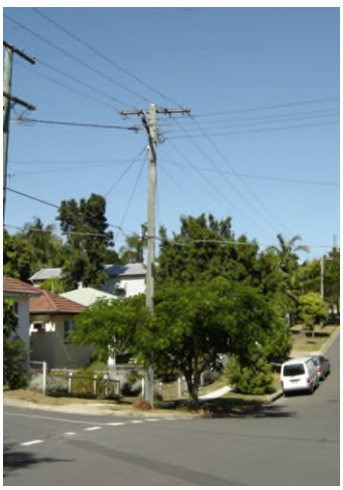
Est Cost $31,800



EP5M – Replace LV pole termination – complex due to an existing underground cable attached to this pole.
Relocation costs would be determined on the amount of LV UG cable work required.

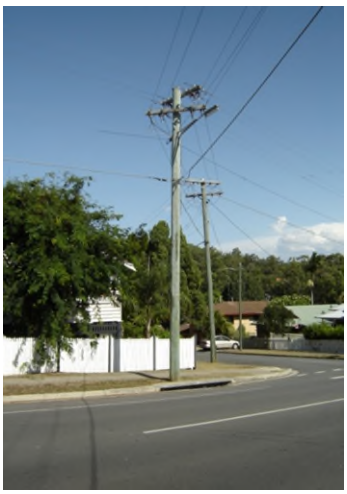
(Est Cost may be higher depending on final position of UG)

Allow $34,900



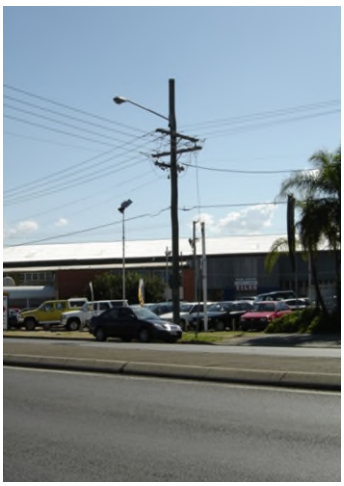
EP6M – Replace LV pole at intersection with 3-way open wire arrangement

Est Cost $21,900



EP7M – Replace LV pole at intersection with 4-way open wire arrangement

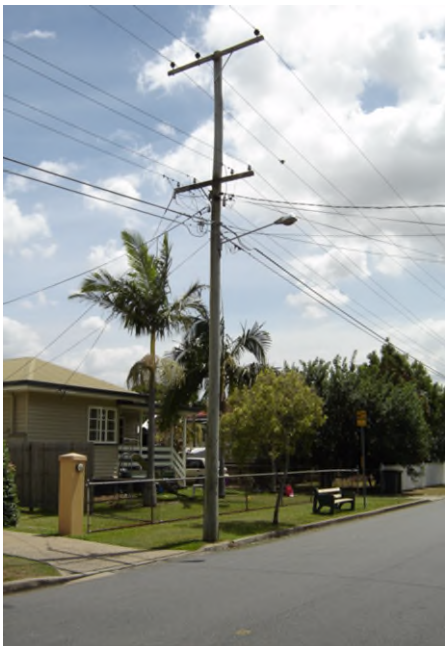
Est Cost $21,300



EP8M – Replace LV pole on busy road. DTMR/Council's requirements need to be considered. Timing on when the work can be performed will impact these costs.

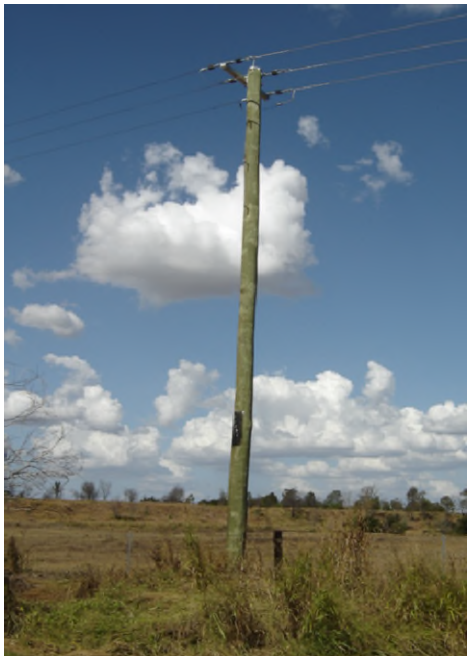
Est Cost $24,500

4. Simple High Voltage Pole



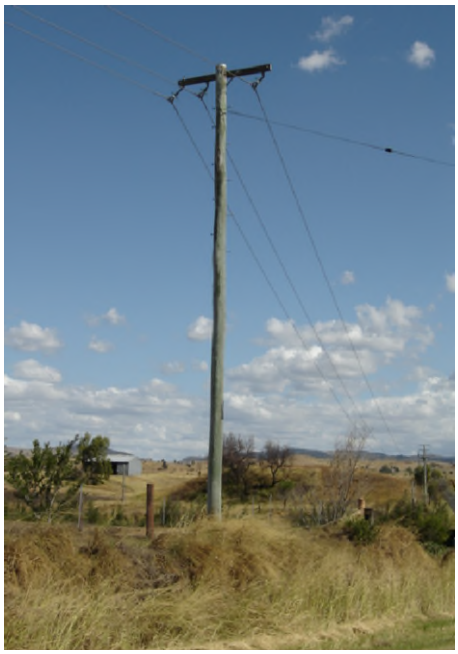
EP9M – Replace 11kV in-line pole in quiet street

Est Cost $23,100



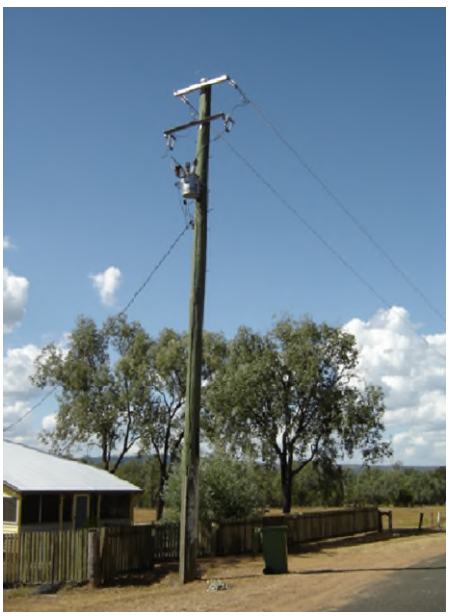
EP10M – Replace 11kV shackle pole

Est Cost $16,200



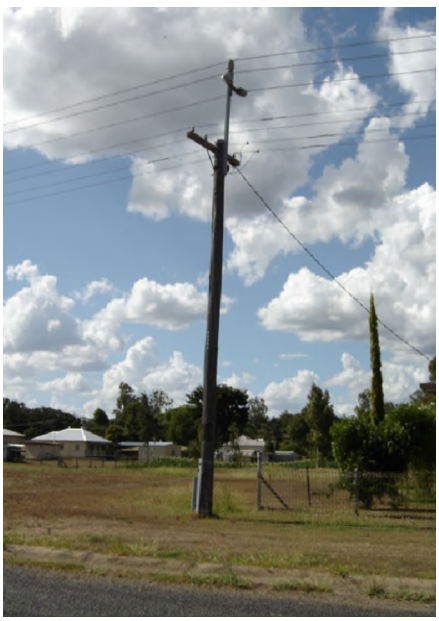
EP11M – Replace 11kV angle pole with head stay attached.

Est Cost $18,500



EP12M – Replace 11kV termination pole with single phase transformer

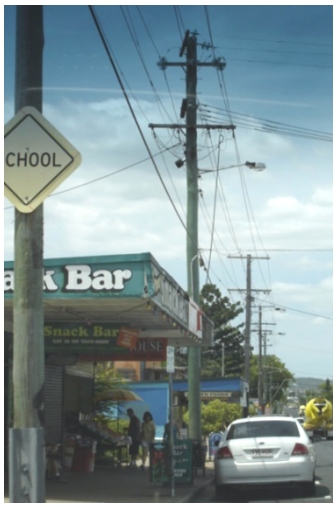
Est Cost $32,000



EP13M – Replace LV pole with 11kV riser attached

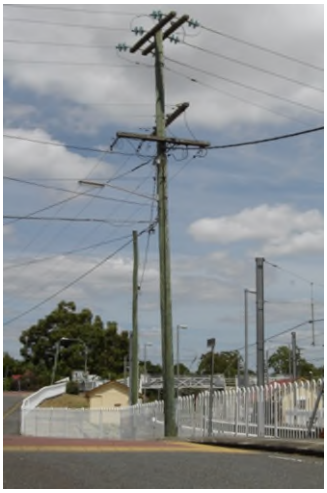
Est Cost $20,600

5. Complex High Voltage Pole



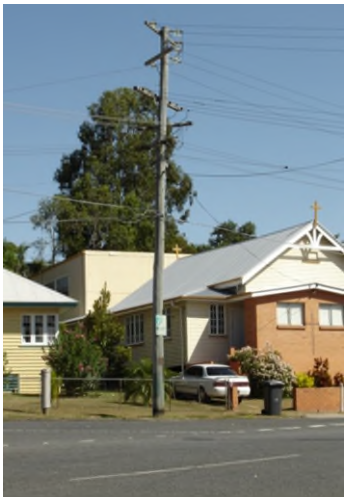
EP14M – Replace 11kV pole in medium shopping complex (busy road where work can only be done after hours). Includes installation of a generator.

Est Cost $36,300



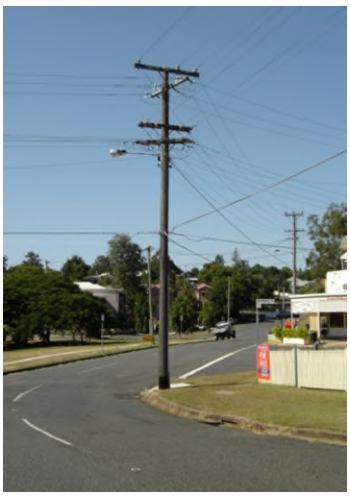
EP15M - 11kV pole adjacent a QR railway crossing. QR requirements and traffic conditions to be considered. Includes replacing conductor over rail line.

Est Cost $44,000



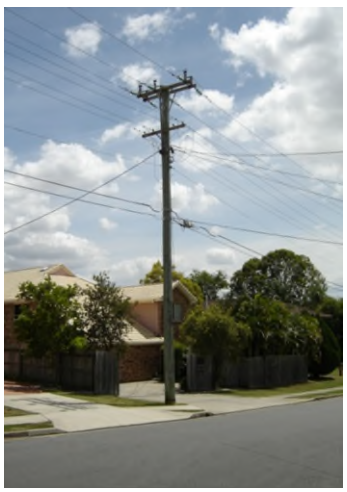
EP16M - 11kV pole in a quiet street, however it is a complex pole with a number of constructions making the replacement or relocation awkward.

Est Cost $36,900



EP17M – Replace 11kV pole at intersection – no truncation necessary.

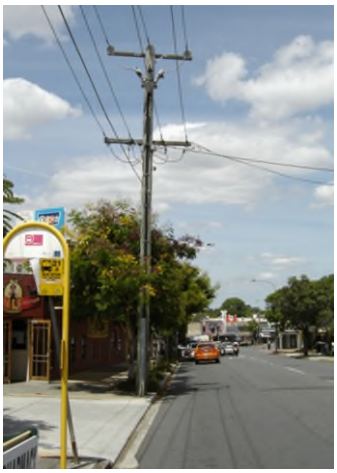
Est Cost $36,200



EP18M – Replace 11kV pole with HV switch attached. No streetlight.

Install new LBS device.

Est Cost $42,200



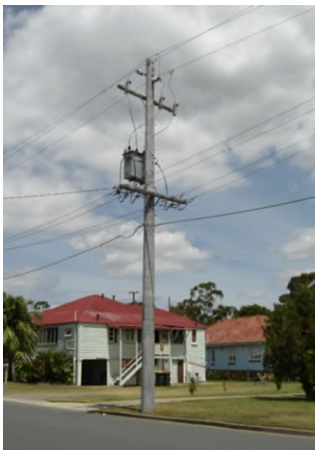
EP19M – Replace 11kV pole with HV UG cable attached.

(Est cost may be higher depending on final position of UG)

Allow $48,600

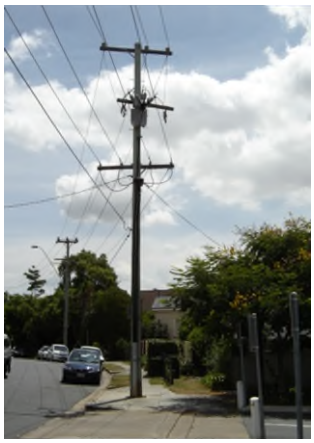
BBCC relocation cost not included in above figures

6. Complex High Voltage Poles with Plant/Equipment attached



EP20M – Replace 11kV Concrete pole with Transformer attached

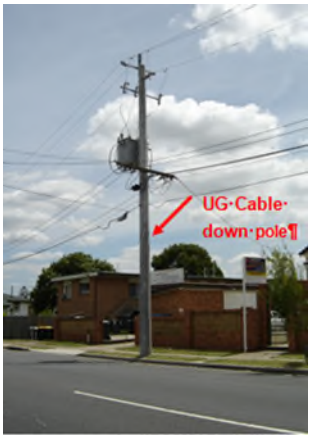
Est Cost $75,000



EP21M - 11kV pole with HV UG cable attached. No streetlight.

(Est cost may be higher depending on final position of UG)

Allow $54,600



EP22M – Replace 11kV Concrete transformer pole with UG cable attached.

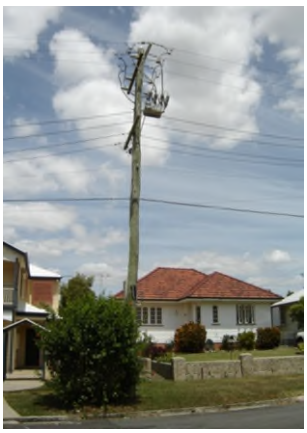
(Est cost may be higher depending on final position of UG)

Allow $97,500

EP23M – Replace 11kV pole with UG cable attached at a busy intersection

(Est cost but may be higher depending on final position of UG**)**

Allow $60,300



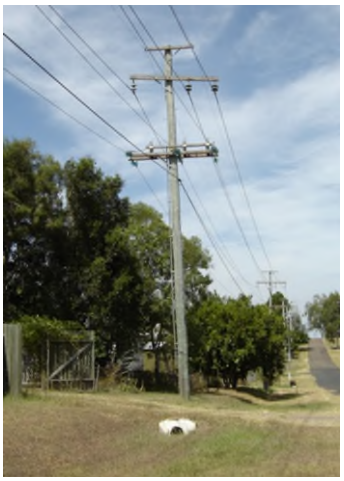
EP24M – Replace 11kV pole with a HV switching device attached

(no credit on old plant given)

Est Cost $54,600

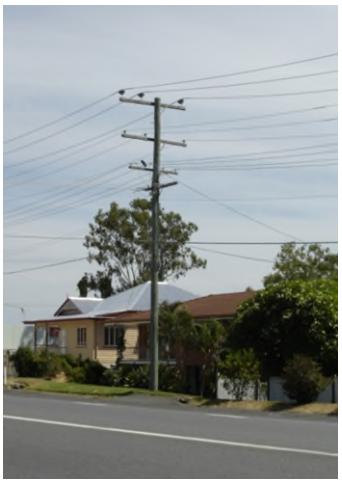
BBCC relocation cost not included in above figures

7. 33kV Poles and associated equipment



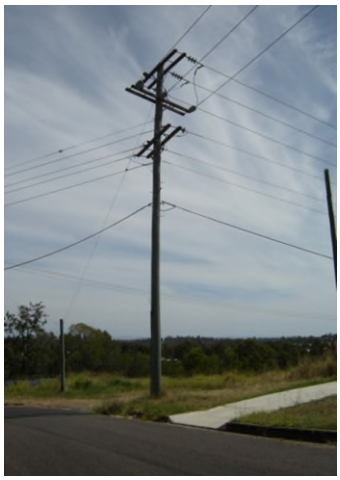
EP25M - 33kV pole with an 11kV HV switch attached. No streetlight or services

Est Cost $49,100



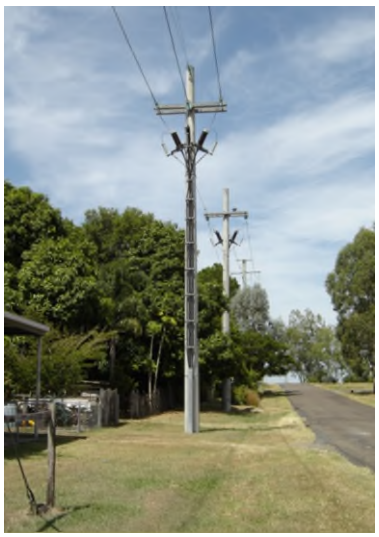
EP26M – Replace 33kV pole with 11kV and LV cables attached. Includes streetlight and services.

Est Cost $35,800



EP27M – Replace 33kV pole with tee off arrangement, 11kV attached and ABC. No streetlight or services included.

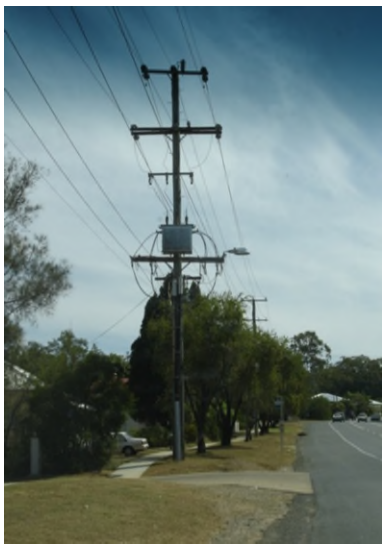
Est Cost $36,800



EP29M – Replace 33kV concrete pole with 33kV UG cables attached.

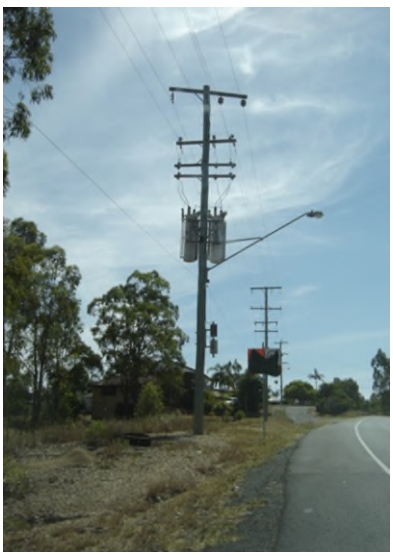
(Est Cost POA – 33kV UG relocation costs unknown)

Allow $93,100



EP30M – Replace 33kV poles with 11kV and transformer attached with UG service cable also attached.

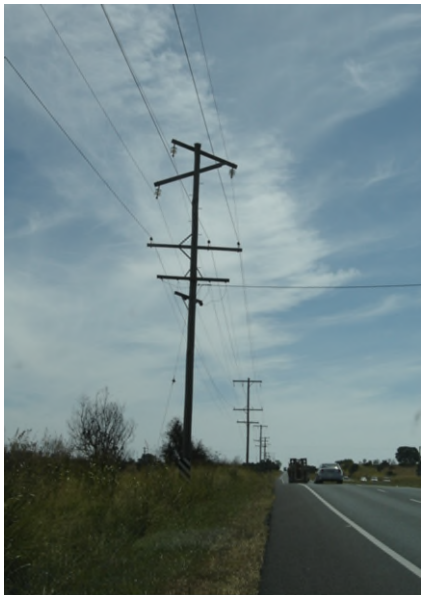
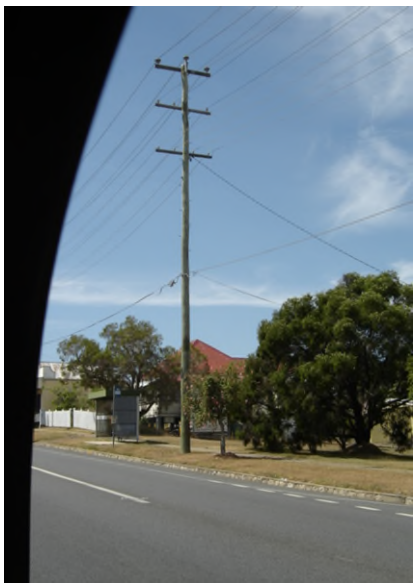
Est Cost $99,500



EP31M – Replace 33kV pole with 11kV and regulator transformers attached.

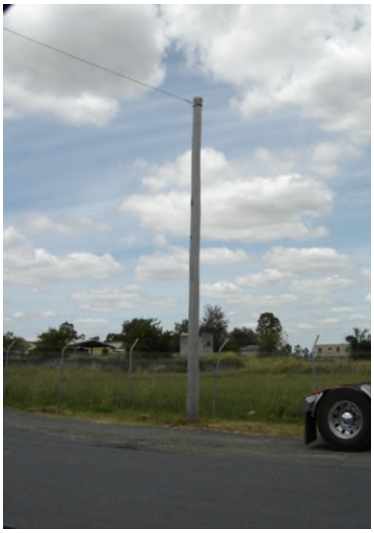
Est Cost $302,300

BBCC relocation cost not included in above figures

		
EP32M – Replace 33kV pole with 11kV and LV beside a busy highway. **Est Cost $40,200**	**EP32AM** - 33kV twin circuit on concrete poles. Price on application required to confirm price. **Est Cost $172,200**	**EP33M** – Replace 33kV pole with 11kV & LV cables attached positioned in a quiet location. **Est Cost $33,900**

BBCC relocation cost not included in above figures

8. Stay Poles, pillars and Street lights

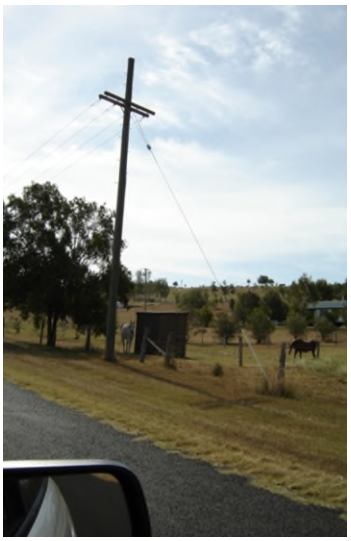


EP34M – Replace single stay pole

Est Cost $9,000

EP34AM – Replace single stay pole

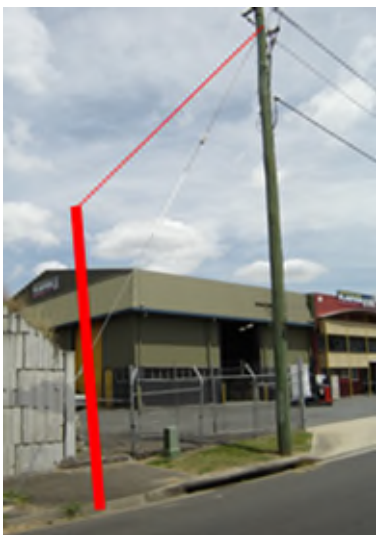
Est Cost $9,000



EP35M - Relocate ground stay only.

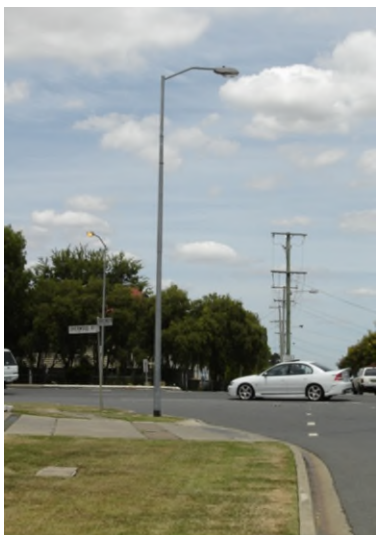
Est Cost $10,500
for stay only on HV Pole

Est Cost $9,500
for Stay only on LV pole



EP36M - Recover stay and install pole stay.

Est Cost $8,000



EP37M – Replace single streetlight supplied via an underground cable.

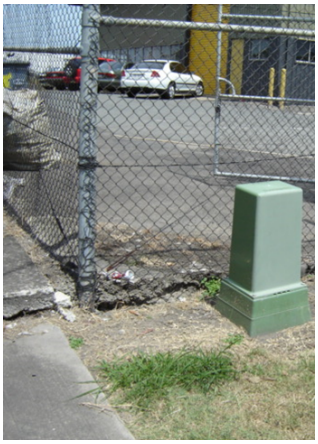
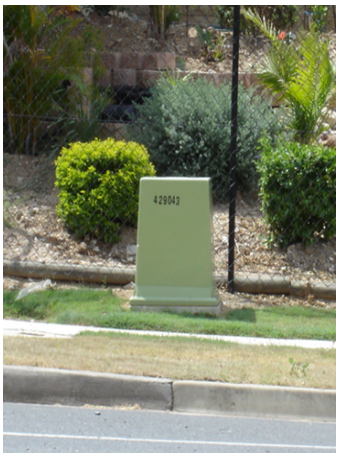
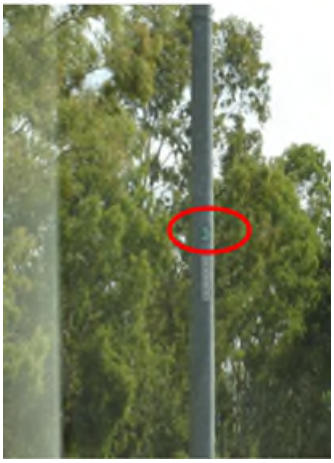
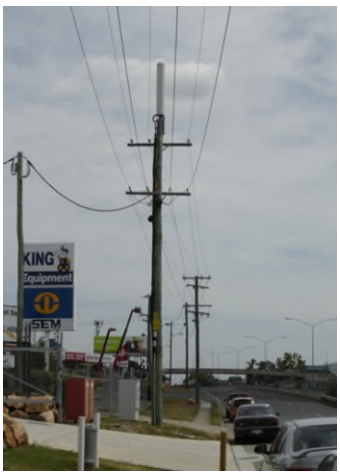
(Est Cost may be higher depending on final position of UG)

Allow $7,700

EP38M – Replace single streetlight with an overhead connection.

(BIG poles to be replaced with BPM's)

Est Cost $10,400

 **EP39M** – Replace single LV pillar in a Commercial and Industrial (C&I) location. **Est Cost $8,400**	 **EP40M** – Replace industrial pillar in a C&I area (Est Cost may be higher depending on UG cables location and circuit run) **Allow $7,000**	 **Rate** 3 - Street lights marked with "3" indicates that this pole does not belong to Energex. Need to discuss with relevant authority. **Refer to relevant authority (normally Local Council / DTMR)**
 **EP13M (A)** - 11kV pole with UG supply to adjacent connection, e.g. Telstra phones box. (Other connections could be traffic control boxes, Identity-lights etc) Est Cost may be higher, depends on cost to relocate UG customers mains (approx. $7,000 – will need to be confirmed by electrical contractor) **Allow $27,600 plus**	 **EP9M(A)** - 11kV pole with communication tower attached. Tower not ENERGEX owned. Est Cost is for the pole (There will be extra cost of relocating the communication equipment for new POA from communications contractor $10,500.00 approx.) **Allow $33,600.00 plus**	

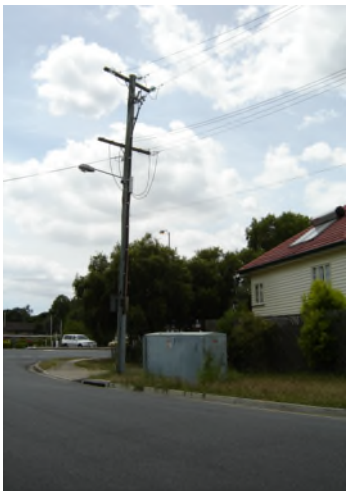
BBCC relocation cost not included in above figures

9. Ground Type & Pad Mount Type Sub Stations

EP41M – Replace ground mounted transformer site positioned with a pad mount type transformer adjacent the road reserve or in parkland.

(Est cost maybe higher due to relocating / extending UG cables and trenching. Existing transformer will be scraped, cost for new sub only is included)

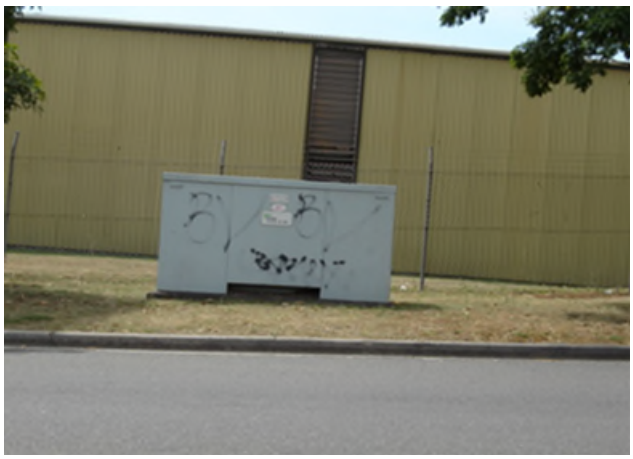
Allow $172,200



EP42M – Replace 11kV pole and UG cable for pad mount transformer positioned adjacent pole.

(Cost of UG relocation and transferring existing plant, if possible and in reasonable condition)

Allow $219,300



EP43M – Relocation of pad mount pad transformer type positioned on the footpath and supplied via existing underground cables.

(Relocation costs will vary depending on condition of existing transformer & new final location)

Allow $220,600

10. Estimating with pictures worksheet

Estimates by Pictures Worksheet

Page 1

Simple LV Pole Relocation				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP1M	LV Pin Pole (Inc Services, streetlight)	No UG Cable		
EP2M	LV Termination Pole (Inc Services, streetlight)	No UG Cable		

Complex LV Pole Relocation				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP3M	LV Pole at Intersection (Inc services, streetlight)	Pole repositioned only		
EP4M	LV Pole at Intersection (Inc services, streetlight)	2 poles required to truncate Corner		
EP5M	LV Pole with UG Termination (Inc services)	UG Cable costs to be determined		
EP6M	LV Pole at Intersection with multiple LV	3- or 4-way open wire arrangement		
EP8M	LV Pole at Intersection (Inc services, streetlight)	Positioned on busy arterial road		

Simple 11kV Pole Relocation				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP9M	11kV Pin Pole (Inc services, streetlight)	Quiet location		
EP10M	11kV shackle pole	Repositioned adjacent ex position		
EP11M	11kV angle pole	Repositioned adjacent ex position		
EP12M	11kV Termination pole with small Transformer	Inc service and Ground Stay		
EP13M	11kV Riser Pole	Exist LV pole with 11kV Pin riser		

Complex 11kV Pole Relocation				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP14M	11kV Pole (Inc services, streetlight)	Busy location – work A/Hs only		
EP15M	11kV shackle pole Inc LV	Location adj QR Lines or similar		
EP16M	11kV & LV Term pole (Inc services)	Repositioned adjacent ex position		
EP17M	11kV & LV Term pole (Inc services)	Repositioned adjacent ex position		

Complex 11kV Pole Relocation with Plant/Equipment attached				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP18M	11kV Pole with HV ABS (LBS)	Open wire ABS with Load break unit		
EP19M	11kV & LV Term pole with UG cables	Depends on UG cable locations		
EP20M	11kV pole with med – large transformer	On concrete or timber pole		
EP21M	11kV & LV Pin pole with UG cables	Depends on UG cable locations		
EP24M	11kV & LV pole with HV Isolator	PMR or Recloser Unit		

Complex 33kV Pole Relocation with Plant/Equipment attached				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP25M	33kV pole with 11kV Switch			
EP26m	33kV Pole with 11kV & LV attached			
EP27M	33kV Pole with multiple terminations	Inc 11kV & LV attached		
EP29M	33kV pole with 33kV UG Cable			
EP30M	33kV Pole with 11kV / LV & Transformer attached	Inc UG LV Service Cable		
EP31M	33kV Pole with 11kV Regulator Transformer			

Complex 33kV Pole Relocation with Plant/Equipment attached				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP32M	33kV Pole with 11kV & LV attached	Along busy highway		
EP32AM	33kV concrete pole construction with multiple circuits	Transmission Lines will require POA		
EP33M	33kV pole with 11Kv/LV	Quiet suburban street		

Miscellaneous Items – Stays, Streetlights				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP34M	Stay Pole	Single Stay pole with no back stay		
EP35M	Stay on LV Pole termination	(On HV poles isolation req)		
EP36M	Recover G/Stay and install stay pole			
EP37M	Streetlight Pole	UG supplied – no visible wiring		
EP38M	Streetlight Pole	OH supplied – visible wiring shown		
EP39M	Small – Medium UG Pillar			
EP40M	Large Commercial Pillar			
Rate 3	Streetlight Pole Rate 3 Indicated by green No.3	#3 sticker– NOT ENERGEX POLE		

Miscellaneous Items – Communication Equipment				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP9M(A)	11kV Pole with Communication Equipment			$

Transformers - Ground Type & Pad Mount Type				
Dwg No	**Description**	**Comments**	**Qty**	**Total Cost**
EP41M	Ground Type with Fence surround			$
EP42M	Pad Mount Type	With UG supply from Pole adjacent		$
EP43M	Pad Mount Type	With UG supply from UG network		$

ENERGEX Communication Connections				
Description	**Comments**	**Cost/unit**	**Qty**	**Total Cost**
Termination/Connections for Pilot Cable / ea.		$12,000		$

Transfer of Multiple Spans / per span /group of conductors (e.g. HV – 3 wires & LV – 4 wires)				
Description	**Comments**	**Est Cost per span / grouping**	**Qty**	**Total Cost**
Transfer Conductors	Use where more than 2 consecutive poles are changed	$3,500		$

Summary of Costs

Factor for Contractor Use (an allowance to be made for contractors performing the above work)		
Sub Total (of above)		**$**
Risk Management Factor	**Multiply the above subtotal to include factor of 1.25**	* 1.25
Grand Total		**$**

Risk Management Factor - Used to cover multiple trips to site and contingency allowance for the unknown factors that can affect work

UG Cable Installations – Quick Costs

Transmission Cables - 33kV Underground Cables (Inc. trenching)				
Description	Comments	Est Cost per M	Qty	Total Cost
33kV UG Cable – Single Circuit (SE- 118244 TX)	$2,673,203 / km	$2,674 / M		$
33kV UG Cable – Double Circuit (SE-118246 TX)	$3,417,755 / km	$3,418 / M		$

Distribution Cables - 11kV Underground Cables (inc. trenching and conduit installation)				
Description	Comments	Est Cost per M	Qty	Total Cost
11kV UG Cable (SE-118167)	$1,777,617/ km	$1,778 / M		$
LV UG Cable (SE-522271)	$643,904 / km	$644 / M		$

Estimates by Pictures Worksheet

OH to UG Installations – Quick Costs

Underground Overhead to UG				
Description	**Comments**	**Cost / 500m**	**Qty**	**Total Cost**
Recover OH and install UG cables (refer below)	$495,500 / **500** m (Est No 566818)	**$495k**		**$**

Note:

- The above cost has been based on – Installation of 11kV & LV underground cables (route length 500m) + installation of 10 LV service pillars + an allowance for the installation of customers mains from the pillar to the premise + the installation of 4 streetlight columns & luminaries + the recovery of the 11kV & LV overhead poles and wires and OH services.
- This cost does not include the supply of any electrical conduits or the installation of these conduits. (That is - no civil expenditure is included)
- This cost does not include the installation of the steel streetlight foundations – This will be treated as part of the civil installation work to be carried out by others
- This cost does not include the removal or installation of 3rd party wires or equipment (Telstra and Optus)
- This cost does not include the removal or installation of any plant such as, transformers, switching / isolation devices.
- This cost is to provide the user with a guide of the costs only.

Sub Total	
Sub Total (of above)	**$**

Other Factors to be costed separately			
Description	**Comments**	**Qty**	**Total Cost**
Installing Sidetracks			
Night Work			
Weekend Work			
Rock / difficult Excavation			
Removal of unsuitable materials from trenching			
Lane Closing			
Traffic Controllers			
Supporting poles at time of construction			
Reinstatement of site to existing condition			
Management of Fire Ants			
Back fill requirements for trenching, e.g. lean mix, flowable fill			
Backfill & compaction requirements			
Tunnel Boring (directional drilling)			

Overall Totals

Grand Total of all above costs	
Total	**$**