



Thurrock Flexible Generation Plant

**Environmental Statement Volume 6
Appendix 8.3: Construction Labour Forecasting**

Date: November 2019

Environmental Impact Assessment
Environmental Statement

Volume 6
Appendix 8.3

Report Number: OXF10872
Version: Final
Date: November 2019

This report is also downloadable from the Thurrock Flexible Generation Plant website at:
<http://www.thurrockpower.co.uk>

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Summary

This appendix presents the results of construction labour demand estimated using the CITB Construction Labour Forecasting tool, which informs the assessment of socio-economic impacts in Volume 3, Chapter 8 of the Environmental Statement.

1. Construction Labour Forecasting

Construction labour forecasting



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1. INTRODUCTION

This analysis is undertaken by WLC Ltd for the RPS Group. The purpose of this report is to forecast the construction labour demand arising from the Thurrock Flexible Generation Plant within the borough of Thurrock, Essex.

Information related to the value of the project, price ruling dates, spend profile, regional location and type of work were made available to WLC Ltd by Richard Boother, Associate Director at RPS Group.

Using the provided information, the project was assigned to the most appropriate project model type and its labour demand was estimated through the CITB's Labour Forecasting Tool (LFT).

2. Methodological note about the LFT

The CITB Labour Forecasting Tool was used to develop a profile of estimated labour requirements for the project. The Labour Forecasting Tool can estimate the construction labour requirements (i.e. number of operatives, managers, designers and support services) on a month-by-month and trade-by-trade basis given no more than the type of project, its value, its location and its start and end dates. Forecasts are produced for 28 occupational groups. These groups are detailed in Appendix A.

The project was assigned to the most appropriate project model in the LFT. Based on the provided information and due to the bespoke nature of the analysed project, the "General energy generation" model was assigned to the project.

The output in this report show the labour demand in two ways:

1. Manual/non-manual occupations: this is the total person years for the development, reported in a yearly format and broken down into manual and non-manual occupations. A person year is equivalent to one person employed for one year.
2. By each of 28 occupational groups: this is the total person years for the development, reported in a yearly format and broken down into the occupational groups.

3. DATA AND ASSUMPTIONS

In order to create the forecasts in the Labour Forecasting Tool, a number of assumptions were required in order to appropriately produce the input to the LFT.

Details on the spend profile provided to us by RPS Group can be found in Table 1. Since the scope of this forecast is limited to the construction sector, an estimate of the engineering value has been calculated and subtracted from the total value. This provides what we have termed the construction value. The percentages applied to the total value of each infrastructure project type to derive the construction value are also shown in Table 1. The construction/engineering proportions have been validated through work we have undertaken for other clients and have been used in the production of Infrastructure UK's National Infrastructure Plan for Skills and the Construction Skills Network forecasts.

Table 1: Provided spend profile and assumed construction cost percentages

	Year 1 (2021)	Year 2 (2022)	Year 3 (2023)
Project cost [£m]	100.0	100.0	60.0
Percentage of construction costs	50%	50%	50%

Based on the information provided, the price ruling date was set to be 2018. The location is the South East region.

4. LABOUR DEMAND

This section contains the total labour demand calculated for the Thurrock Flexible Generation Plant project. The numbers quoted in the report have been rounded to the nearest 10.

Figure 1 shows the labour demand arising from the Thurrock Flexible Generation Plant project, broken down into manual and non-manual occupations. During 2021 and 2022 the total labour demand is 510 people. This is broken down into manual occupations at around 290 people (58%) and non-manual at around 210 people (42%)¹.

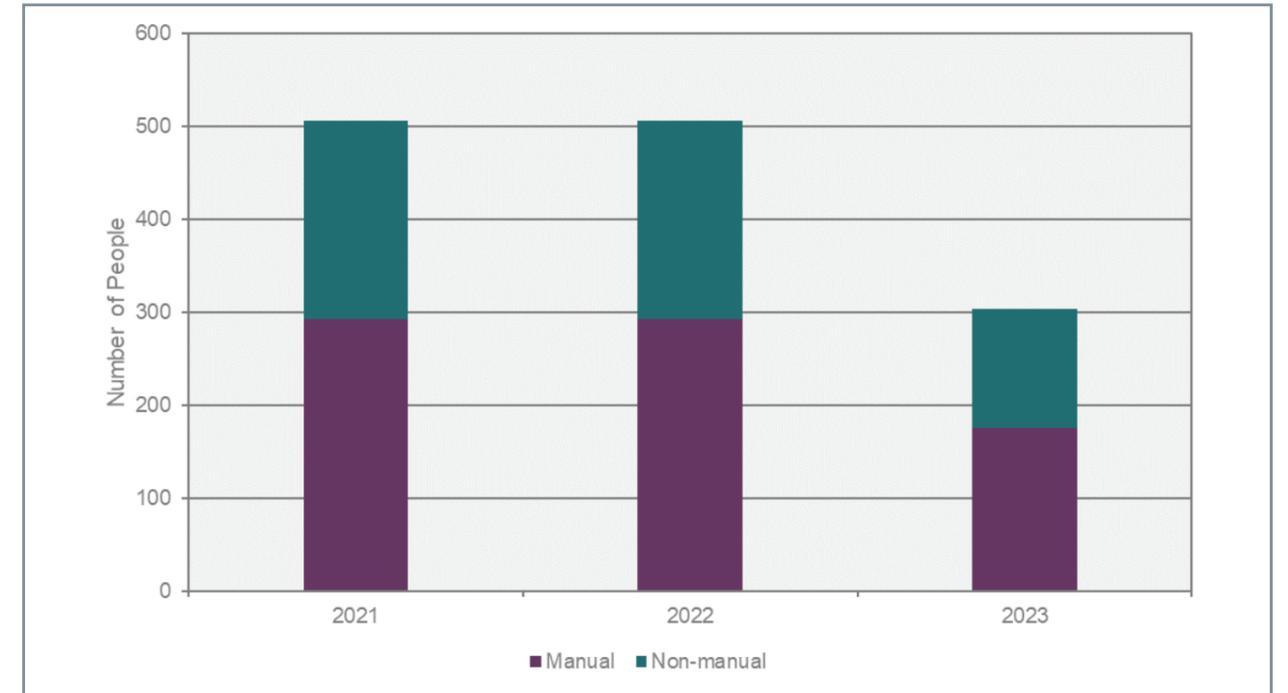


Figure 1: Construction labour demand for the total development, broken down into manual and non-manual occupations

Table 2 shows the annual labour demand arising from the Thurrock Flexible Generation Plant project, broken down into 28 occupational groups. The total labour demand in 2021 and 2022 year is 510 people.

¹ Manual and Non-manual numbers do not add up to the total labour demand due to rounding.

Table 2: Construction labour demand for the development, broken down into 28 occupational groups

Occupational group	Number of people ²		
	2021	2022	2023
Senior, executive and business process managers	20	20	10
Construction project managers	10	10	10
Other construction process managers	30	30	20
Non-construction professional, technical, IT and other office-based staff (excl. managers)	60	60	30
Construction trades supervisors	10	10	10
Wood trades and interior fit-out	60	60	40
Bricklayers	< 10	< 10	< 10
Building envelope specialists	50	50	30
Painters and decorators	< 10	< 10	< 10
Plasterers	< 10	< 10	< 10
Roofers	< 10	< 10	< 10
Floorers	< 10	< 10	< 10
Glaziers	< 10	< 10	< 10
Specialist building operatives not elsewhere classified (nec*)	60	60	30
Scaffolders	20	20	10
Plant operatives	10	10	10
Plant mechanics/fitters	10	10	10
Steel erectors/structural fabrication	10	10	< 10
Labourers not elsewhere classified (nec*)	30	30	20
Electrical trades and installation	< 10	< 10	< 10
Plumbing and heating, ventilation and air-conditioning trades	10	10	10
Logistics	10	10	10
Civil engineering operatives not elsewhere classified (nec*)	< 10	< 10	< 10
Non-construction operatives	10	10	10
Civil engineers	30	30	20
Other construction professionals and technical staff	40	40	20
Architects	< 10	< 10	< 10
Surveyors	10	10	10
Total	510	510	300

² Numbers at occupational group level do not add up to the total labour demand due to rounding.

APPENDIX A. OCCUPATIONAL DEFINITIONS

Reference is made in this report to a range of occupational aggregates for construction occupations. This appendix contains details of the 166 individual occupations which are aggregated into 28 occupational aggregates.

Occupations included within construction occupational aggregates (Four-digit codes refer to Office for National Statistics Standard Occupational Classification Codes).	
1 Senior, executive, and business process managers³	
(1115) Chief executives and senior officials (1131) Financial managers and directors (1132) Marketing and sales directors (1133) Purchasing managers and directors (1135) Human resource managers and directors (1251) Property, housing and estate managers (1136) Information technology and telecommunications directors (2150) Research and development managers	(1162) Managers and directors in storage and warehousing (1259) Managers and proprietors in other services nec (1139) Functional managers and directors nec (2133) IT specialist managers (2134) IT project and programme managers (3538) Financial accounts managers (3545) Sales accounts and business development managers
2 Construction project managers³	
(2436) Construction project managers and related professionals	
3 Other construction process managers³	
(1121) Production managers and directors in manufacturing (1122) Production managers and directors in construction (1161) Managers and directors in transport and distribution (1255) Waste disposal and environmental services managers	(3567) Health and safety officers (3550) Conservation and environmental associate professionals
4 Non-construction professional, technical, IT, and other office-based staff (excl. managers)³	
(3131) IT operations technicians (3132) IT user support technicians (3534) Finance and investment analysts and advisers (3535) Taxation experts (3537) Financial and accounting technicians (3563) Vocational and industrial trainers and instructors (3539) Business and related associate professionals nec (3520) Legal associate professionals (3565) Inspectors of standards and regulations (2136) Programmers and software development professionals (2139) Information technology and telecommunications professionals nec (3544) Estate agents and auctioneers (2413) Solicitors (2419) Legal professionals nec (2421) Chartered and certified accountants (2424) Business and financial project management professionals (2423) Management consultants and business analysts (4216) Receptionists (4217) Typists and related keyboard occupations (3542) Business sales executives (4122) Book-keepers, payroll managers and wages clerks (4131) Records clerks and assistants (4133) Stock control clerks and assistants (7213) Telephonists (7214) Communication operators (4215) Personal assistants and other secretaries (7111) Sales and retail assistants (7113) Telephone salespersons	(3541) Buyers and procurement officers (3562) Human resources and industrial relations officers (4121) Credit controllers (4214) Company secretaries (7129) Sales related occupations nec (7211) Call and contact centre occupations (7219) Customer service occupations nec (9219) Elementary administration occupations nec (2111) Chemical scientists (2112) Biological scientists and biochemists (2113) Physical scientists (3111) Laboratory technicians (3421) Graphic designers (2463) Environmental health professionals (2135) IT business analysts, architects and systems designers (2141) Conservation professionals (2142) Environment professionals (2425) Actuaries, economists and statisticians (2426) Business and related research professionals (4124) Finance officers (4129) Financial administrative occupations nec (4138) Human resources administrative occupations (4151) Sales administrators (4159) Other administrative occupations nec (4162) Office supervisors (7130) Sales supervisors (7220) Customer service managers and supervisors (4161) Office managers

³ Managerial, professional & office based staff

5 Construction trades supervisors⁴	
(5250) Skilled metal, electrical and electronic trades supervisors	
(5330) Construction and building trades supervisors	
6 Wood trades and interior fit-out⁴	
(5315) Carpenters and joiners	(5442) Furniture makers and other craft woodworkers
(8121) Paper and wood machine operatives	(5319) Construction and building trades nec (25%)
7 Bricklayers⁴	
(5312) Bricklayers and masons	
8 Building envelope specialists⁴	
(5319) Construction and building trades nec (50%)	
9 Painters and decorator⁴	
(5323) Painters and decorators	(5319) Construction and building trades nec (5%)
10 Plasterers⁴	
(5321) Plasterers	
11 Roofers⁴	
(5313) Roofers, roof tilers and slaters	
12 Floorers⁴	
(5322) Floorers and wall tillers	
13 Glaziers⁴	
(5316) Glaziers, window fabricators and fitters	(5319) Construction and building trades nec (5%)
14 Specialist building operatives not elsewhere classified (nec)⁴	
(8149) Construction operatives nec (100%)	(9132) Industrial cleaning process occupations
(5319) Construction and building trades nec (5%)	(5449) Other skilled trades nec
15 Scaffolders⁴	
(8141) Scaffolders, staggers and riggers	
16 Plant operatives⁴	
(8221) Crane drivers	(8222) Fork-lift truck drivers
(8129) Plant and machine operatives nec	(8229) Mobile machine drivers and operatives nec
17 Plant mechanics/fitters⁴	
(5223) Metal working production and maintenance fitters	(9139) Elementary process plant occupations nec
(5224) Precision instrument makers and repairers	(5222) Tool makers, tool fitters and markers-out
(5231) Vehicle technicians, mechanics and electricians	(5232) Vehicle body builders and repairers
18 Steel erectors/structural fabrication⁴	
(5311) Steel erectors	(5319) Construction and building trades nec (5%)
(5215) Welding trades	(5211) Smiths and forge workers
(5214) Metal plate workers, and riveters	(5221) Metal machining setters and setter-operators
19 Labourers nec⁴	
(9120) Elementary construction occupations (100%)	
20 Electrical trades and installation⁴	
(5241) Electricians and electrical fitters	(5242) Telecommunications engineers
(5249) Electrical and electronic trades nec	
21 Plumbing and heating, ventilation, and air conditioning trades⁴	
(5314) Plumbers and heating and ventilating engineers	(5319) Construction and building trades nec (5%)
(5216) Pipe fitters	(5225) Air-conditioning and refrigeration engineers
22 Logistics⁴	
(8211) Large goods vehicle drivers	(3541) Buyers and purchasing officers (50%)
(8212) Van drivers	(4134) Transport and distribution clerks and assistants
(9260) Elementary storage occupations	

23 Civil engineering operatives not elsewhere classified (nec)³	
(8142) Road construction operatives	(8123) Quarry workers and related operatives
(8143) Rail construction and maintenance operatives	
24 Non-construction operatives³	
(8117) Metal making and treating process operatives	(9249) Elementary security occupations nec
(8119) Process operatives nec	(9233) Cleaners and domestics
(8125) Metal working machine operatives	(9232) Street cleaners
(8126) Water and sewerage plant operatives	(5113) Gardeners and landscape gardeners
(8132) Assemblers (vehicles and metal goods)	(6232) Caretakers
(8133) Routine inspectors and testers	(9241) Security guards and related occupations
(8139) Assemblers and routine operatives nec	(3319) Protective service associate professionals nec
25 Civil engineer^{s3}	
(2121) Civil engineers	
26 Other construction professionals and technical staff³	
(2122) Mechanical engineers	(3119) Science, engineering and production technicians nec
(2123) Electrical engineers	(3121) Architectural and town planning technicians
(2126) Design and development engineers	(3122) Draughtspersons
(2127) Production and process engineers	(3115) Quality assurance technicians
(2461) Quality control and planning engineers	(2432) Town planning officers
(2129) Engineering professionals nec	(2124) Electronics engineers
(3112) Electrical and electronics technicians	(2435) Chartered architectural technologists
(3113) Engineering technicians	(3531) Estimators, valuers and assessors
(3114) Building and civil engineering technicians	(3116) Planning, process and production technicians
27 Architects³	
(2431) Architects	
28 Surveyors³	
(2433) Quantity surveyors	
(2434) Chartered surveyors	

⁴ Skilled trades & operatives

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Version	Date	Details of modifications
Rev A	27 September 2019	Initial release

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