ENERGY & UTILITY SKILLS

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National Infrastructure and Construction Pipeline (2023)

Summary analysis

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1 About the 2023 National Infrastructure and Construction Pipeline

1.1.1 The 2023 National Infrastructure and Construction Pipeline (NICP) provides a assessment of infrastructure investment over the next ten years.

1.1.2 This provides industry with a consistent view of planned and predicted spending on infrastructure projects and programmes and is critical to support companies in their short and long term business planning, and enable them to invest in the right skills, technologies and practices for the future.

1.1.3 The pipeline primarily relates to England and UK projects that are in areas which not devolved. Therefore, this analysis does not include devolved spending in Scotland, Wales and Northern Ireland and by Local Authorities.

1.1.4 The assessment is based on data collected during summer 2023.

2 Further information

2.1.1 Full details of the 2023 National Infrastructure and Construction Pipeline can be found here:

https://www.gov.uk/government/publications/national-infrastructure-and-construction-pipeline-2023

2.1.2 For further data and information relating to skills and UK's national, regional and local labour markets, or to discuss how the labour market may affect your organisation's talent attraction and retention strategies, please contact workforceplanning@euskills.co.uk.

3 The headlines

3.1.1 The 2023 pipeline includes £379bn of planned investment, £164bn of which is scheduled to occur over the next two years (2023/4 and 2024/25) – i.e. in the current Spending Review.

3.1.2 The spending of regulated utilities beyond their current price settlement period is, as yet, unknown and therefore not included in this analysis. **As such, this analysis significantly under-estimates planned investments in the regulated utilities (i.e. electricity, gas and water networks).**

3.1.3 Current, known, investment plans for the energy and utilities sector total £220bn over the next decade:

- Energy = £182bn
  - Electricity Generation = £136bn
  - Oil & Gas = £33bn
  - Nuclear Decommissioning = £8bn
  - Energy – Other = £5bn
- Electricity/Gas Transmission = £28bn
  - Electricity Transmission = £26bn
  - Gas Transmission = £1bn
- Water & Sewerage = £11bn
- Other Utilities (Carbon Capture Usage and Storage: Tranche 1) = value to be confirmed

3.1.4 The next Spending Review, and forthcoming settlement periods for the regulated utilities, will set out further investments beyond 2025.

3.1.5 Two-thirds of known investments in the energy and utilities sector (£141bn) are UK-wide projects.

3.1.6 Where energy and utilities sector investments have been attributed to a specific region, the South West (7%; £15bn) and Scotland (6%; £14bn) receive the most.

3.1.7 Of all other sector investments, 41% (£64bn) are across England and 21% (£33bn) are in London.

3.1.8 To deliver the £164bn of planned investment over the next two years, an annual average of 543-600,000 workers will be required across different industry groups, including construction and engineering construction. Of this, approximately 60% are construction jobs.

3.1.9 Civil engineers and civil engineering operatives, Plant operatives and plant mechanics/ fitters are examples of construction workers which are most likely to see some level of scarcity in the coming years.

4 The 10-year pipeline

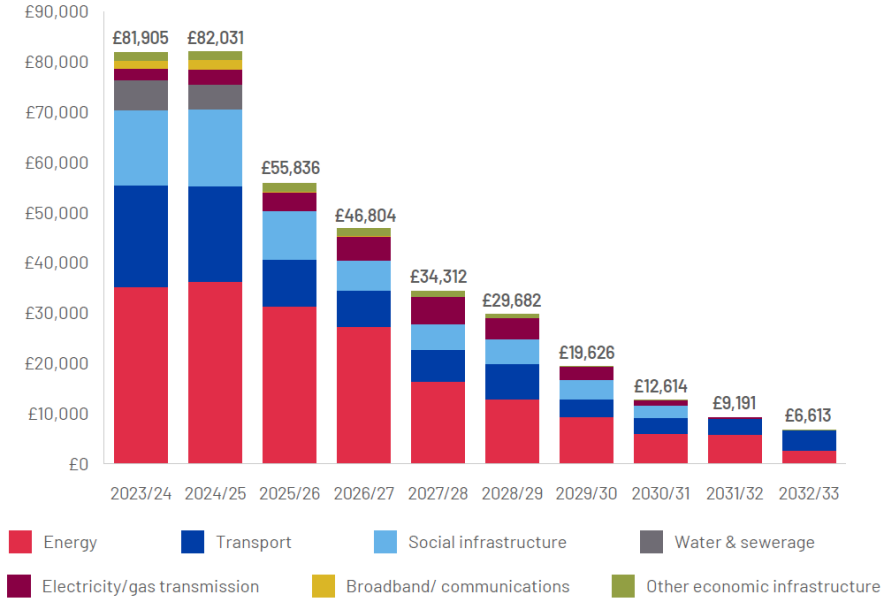
4.1.1 The 2023 pipeline includes £379bn of planned investment, £164bn of which is scheduled to occur over the next two years (2023/4 and 2024/25) – i.e. in the current Spending Review.

4.1.2 Looking beyond the next two years, investments (where they are not already known) will be determined by future government Spending Reviews.

4.1.3 Furthermore, the spending of regulated utilities beyond their current price settlement period is, as yet, unknown and therefore not included in this analysis. **As such, this analysis significantly under-estimates planned investments in the regulated utilities (i.e. electricity, gas and water networks).**

4.1.4 Figure 1 outlines the annual investments by sector and year. It shows a strong profile in the next two years, with energy (£36bn a year to 2024/25) and transport (£19bn a year to 2024/25) representing the largest portions of the pipeline value.

Figure 1: Profile of planned pipeline investment by sector (£m) 2023/24 to 2032/33



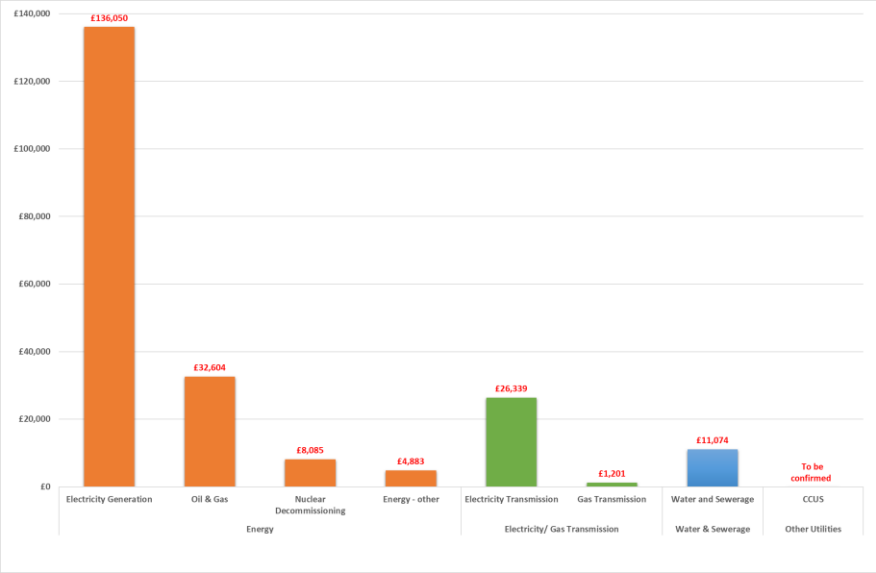
4.1.5 Similar to previous pipelines, planned expenditure tapers down after the end of the current Spending Review period, where budgets are not yet fully confirmed.

4.1.6 Current, known, investment plans for the energy and utilities sector total £220bn over the next decade:

- Energy = £182bn
  - Electricity Generation = £136bn
  - Oil & Gas = £33bn
  - Nuclear Decommissioning = £8bn
  - Energy – Other = £5bn[1]
- Electricity/Gas Transmission = £28bn
  - Electricity Transmission = £26bn
  - Gas Transmission = £1bn
- Water & Sewerage = £11bn
- Other Utilities (Carbon Capture Usage and Storage: Tranche 1) = value to be confirmed

4.1.7 The next Spending Review, and forthcoming settlement periods for the regulated utilities, will set out further investments beyond 2025.

Figure 2: Total profiled spend in the energy and utilities sector from 2023/24 onwards (£m Constant)



[1] Energy – Other consists of hydrogen production and smart metering projects.

4.1.8 The ten largest projects in the energy and utilities sector are:

- Energy generation from 2025 onwards (£72.5bn)
- Energy generation to 2025 (£50.2bn)
- NSTA (North Sea Transition Authority), Upstream Oil & Gas (£32.6 bn)
- Hinkley Point C (£13.3bn)
- Electricity Transmission Interconnectors balancing line (£12.5bn)
- SSEN Transmission (9.3bn)
- Smart Metering Implementation Programme (£4.0bn)
- Thames Water (£1.3bn)
- Sellafield decommissioning (£0.9bn)
- United Utilities (£0.9bn)

4.1.9 Outside of the energy and utilities sector, only two other projects are over £10bn – NHS new hospital programme (£19.1bn) and HS2 Phase 1 (provisionally £14.2bn).

5 Regional analysis

5.1.1 The pipeline primarily relates to England and UK projects that are in areas which not devolved. Therefore, this analysis does not include devolved spending in Scotland, Wales and Northern Ireland and by Local Authorities.

5.1.2 Two-thirds of known investments in the energy and utilities sector (£141bn) are UK-wide projects.

5.1.3 Where energy and utilities sector investments have been attributed to a specific region, the South West (7%; £15bn) and Scotland (6%; £14bn) receive the most.

Figure 3: Total profiled spend by energy and utilities sector and all sectors by region of the UK from 2023/24 onwards (£m Constant)

Nation & Region	Energy & utilities sector		Other sector investments	
	(£m)	%	(£m)	%
East Midlands	£21	0%	£3,710	2%
East of England	£1,457	1%	£6,074	4%
London	£1,839	1%	£33,420	21%
North East	£692	0%	£1,614	1%
North West	£7,720	4%	£7,821	5%
South East	£2,140	1%	£10,502	7%
South West	£15,154	7%	£4,417	3%
West Midlands	£1,387	1%	£4,422	3%
Yorkshire and the Humber	£793	0%	£6,142	4%
England	£0	0%	£64,143	41%
Scotland	£14,081	6%	£2,178	1%
Wales	£997	0%	£1,220	1%
UK	£141,353	64%	£10,115	6%
Offshore	£32,604	15%	£2,598	2%
Grand total	**£220,237**	**100%**	**£158,377**	**100%**

5.1.4 Of all other sector investments, 41% (£64bn) are across England and 21% (£33bn) are in London.

5.1.5 Over the next two years of confirmed investments, the South West will receive the most investment per head of the population (£2,510), followed by London (2,074) and the South East (£1,799).

Figure 4: £ per head of total planned investment in the pipeline by region over the next two years (2023/24 to 2024/25)

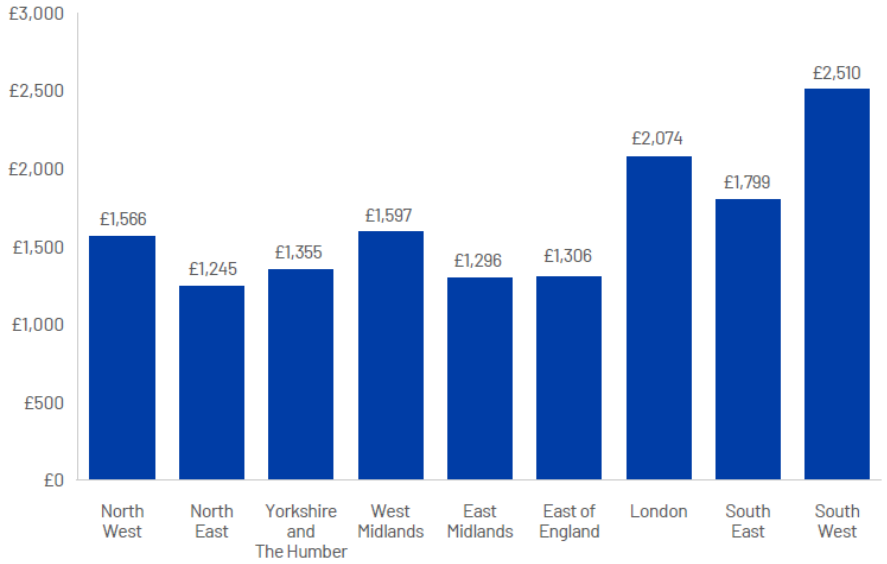


Figure 5: Map of planned investment in the pipeline

Devolved investment pipelines

5.1.6 The split between the responsibility of the UK Government and each of the devolved administrations for infrastructure policy and funding varies by nation. Each devolved administration produces its own infrastructure construction plans which are over-and-above those contained in the NICP:

- The Investment Strategy for Northern Ireland 2050 (https://isni.gov.uk/pipeline/) sets out a long-term view of strategic investment priorities for public infrastructure
  - Including £217m for Northern Ireland Water
- The Scottish Government published an Infrastructure Investment Plan which covers 2021-22 to 2025-26 (https://pipeline.scottishfuturestrust.org.uk/) detailing investment in Scotland's future infrastructure
  - Including £29m for Energy, £24m for Utilities and £1m for Waste
- The Welsh Government published an Infrastructure Investment Strategy in 2021 (https://www.gov.wales/wales-infrastructure-investment-strategy-project-pipeline-december-2022) which sets out their 10 year vision of infrastructure investment
  - Including £616m for Resource Efficiency & Circular Economy and £160m for Energy

6 Workforce Demand Analysis

6.1.1 Delivery of the investments detailed above will require a significant workforce with the right skills and experience – the availability of labour, especially in relation to specific skills, is essential.

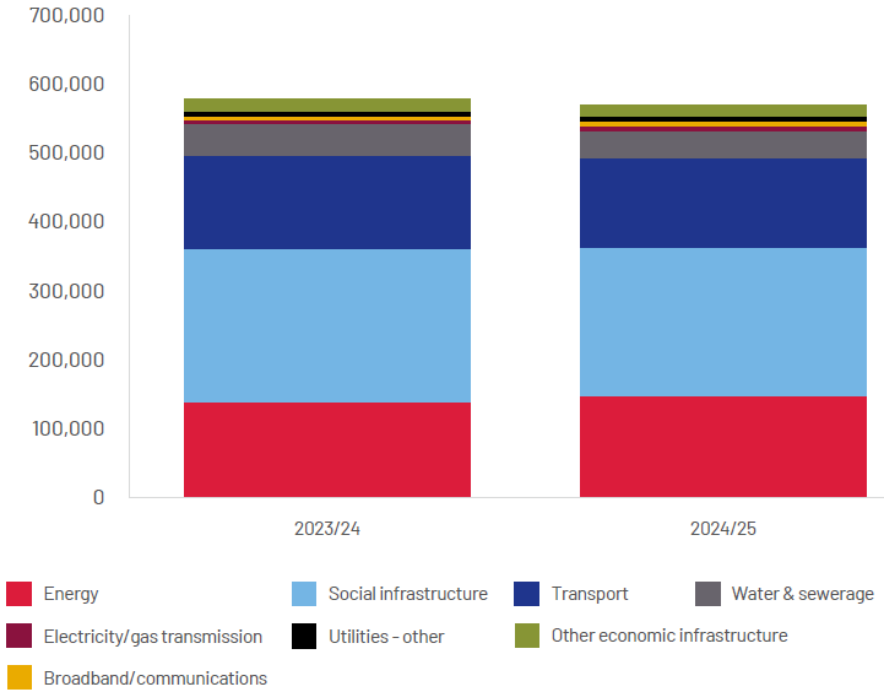
6.1.2 This section provides an estimate of future workforce demand in order to deliver the planned investments in the pipeline. The analysis draws on on-site labour data from an extensive sample of projects and programmes and applies these patterns of labour use to the planned investment in the pipeline.

6.1.3 These workforce estimates are based on the planned investment within the current Spending Review settlement period (i.e. over the next two years) as these years provide the greatest certainty and detail on spend.

6.1.4 To deliver the £164bn of planned investment over the next two years, an annual average of 543-600,000 workers will be required across different industry groups, including construction and engineering construction. Of this, approximately 60% are construction jobs.

6.1.5 This is an increase from the 2021 pipeline figure which estimated an average of 425,000 workers would be required, and is in line with the increase in the number of projects covered (from 528 to 660).

Figure 6: Estimated annual workforce requirement to deliver planned investment in the pipeline from 2023/24 to 2024/25



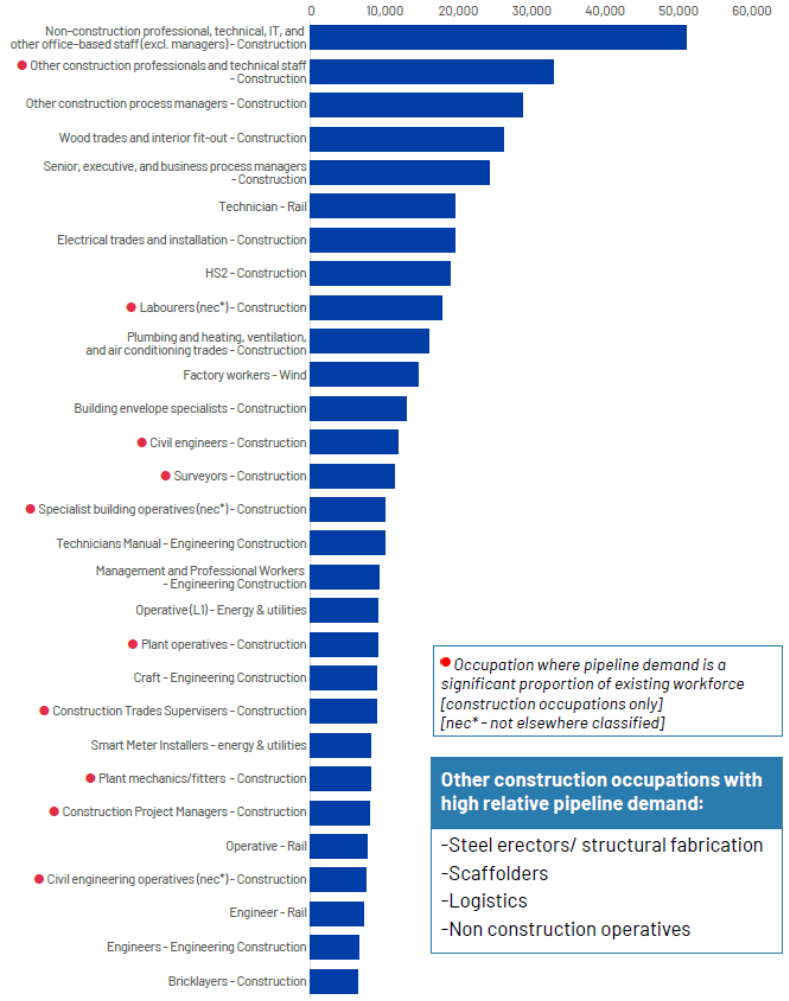
6.1.6 Intense competition for highly sought skills is set to continue as factors including an ageing population, migration patterns and labour movements out of the construction sector remain a feature.

6.1.7 Figure 7 lists the occupations required in the highest volume to deliver the NICP. A number of these jobs are likely to face particularly high relative demand (where pipeline demand is a significant proportion of the existing workforce).

6.1.8 Civil engineers and civil engineering operatives, Plant operatives and plant mechanics/ fitters are examples of construction workers which are most likely to see some level of scarcity in the coming years.

6.1.9 This analysis does not provide an exhaustive view of future workforce requirements and should be treated as an indication of potential workforce demand. It cannot account for detailed variations in the complexity or exact design of projects. In addition, this analysis is limited in its considerations of very new and emerging technologies that may reduce or influence the types of skills required to deliver future projects and programmes.

Figure 7: Summary of high demand occupations in the pipeline, annual median 2023/24 to 2024/25



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