DRAFT

AECOM Imagine it. Delivered.

Sizewell C Proposed Nuclear Development

Peer Review of Option Selection for Sizewell Link Road

EDF Energy

April 2019

DRAFT

Quality information

Prepared by	Checked by	Verified by	Approved by
Peter Firth Associate Director	Mark Romanowski Principal Consultant	Mark Romanowski Principal Consultant	Richard Lowe Director

Revision History

Revision	Revision date	Details	Authorized	Name	Position

Distribution List

# Hard Copies	PDF Required	Association / Company Name

DRAFT

Prepared for:

EDF Energy

AECOM Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com

DRAFT

Table of Contents

Figures

Tables

1. Introduction

1.1 EDF Energy is proposing to submit an application under the Planning Act 2008 for an order granting development consent for a new Nuclear Power Station comprising two United Kingdom European Pressure Reactors™ (UK EPRs) at Sizewell in Suffolk, known as Sizewell C (hereafter referred to as 'the proposed development'). The proposed development is to be located on land immediately to the north of the existing Sizewell B power station.

1.2 The proposals have recently gone through Stage 3 consultation which ran between 4 January and 29 March 2019. Following this consultation, further engagement with statutory consultees, and finalisation of environmental assessments, EDF Energy intends to submit the application for development in Q1 2020.

1.3 If consented, construction of the power station is expected to take between 9 and 12 years.

1.4 AECOM was commissioned by EDF Energy in April 2019 to carry out a peer review of the assessment work undertaken by EDF Energy to assess the identified options for the Sizewell Link Road (SLR) and the rationale in selecting a preferred option.

1.5 AECOM was asked to undertake an independent selection process to provide an independent opinion of the preferred option for the SLR.

1.6 The remainder of this report is structured as follows:

- Section 2 sets out the methodology that has been adopted to undertake this peer review;
- Section 3 provides a basis for review by setting out the key transport parameters of the proposed development;
- Section 4 briefly outlines the route options that have previously been identified for review by EDF Energy;
- Section 5 presents the AECOM independent assessment and recommendation of a preferred option; and
- Section 6 provides a summary and conclusions.

2. Methodology

2.1 The methodology adopted to undertake this review consisted of a desk based review of existing published information, a site visit to provide context and site specific information and the professional experience and judgement of the reviewer.

2.2 Documents reviewed are as follows:

- Sizewell C Stage 3 Pre-Application Consultation Documentation (EDF: 2019):
  - Volume 1 Chapters 1, 2, 5, 6, 10, 11 and 17;
  - Volume 2 Chapters 5 and 6;
  - Volume 3;
- A12 – Sizewell B Link Road Supplementary Report (Trevor Crocker & Partners: 1987);
- A12 – Sizewell Link Road Environmental Statement (CEGB/Trevor Crocker & Partners: 1989);
- B1122 Junction Improvements Environmental Statement (CEGB/Trevor Crocker & Partners: 1989);
- Sizewell C, Route D2 and B1122 Study – Rev 3 (AECOM: 2015)

2.3 A site visit was undertaken on Thursday 18th and Friday 19th April 2019.

2.4 The site visit was conducted by Peter Firth and comprised:

- Driving the B1122 between Yoxford and Leiston to observe current characteristics and facilities;
- Driving the B1119 between Saxmundham and Leiston to observe current characteristics and facilities;
- Driving the A12 between Yoxford and Saxmundham to observe current characteristics and facilities;
- Observations from the A12 at the points at which the various options for the Sizewell Link Road diverge;
- Observations of preferred route alignment from Littlemoor Road, Frodley Road, Pretty Road and Moat Road and from public footpath E-396/017/0 near Gardenhouse Farm, public footpath E-396/020/0 near Valley Farm and public footpath E-515/004/0 near Church Farm;
- Observations of the Option W route alignment from the B1121 Main Road / Church Road junction at Benhall Green, the B1119 Saxmundham Road just south of Knodishall Green and Buckleswood Road west of Leiston;
- Observations of the Option X/Y route alignments from the B1121 / Clayhills Road junction at Saxmundham, Clay Hills west of its junction with Hawthorne Road and Harrow Lane northwest of the Leiston Airfield Memorial.

2.5 This peer review has been undertaken by Peter Firth. He is a transport specialist with over 30 years of continuous experience in transport planning and consents planning for development. He is particularly experienced in power generation schemes and has experience of various power generation types including nuclear new build where he led the Transport Options Study for the National Policy Statement for Nuclear Power Generation (NPS EN – 6) designated site at Oldbury in South Gloucestershire.

2.6 This peer review relies heavily on the professional judgement of Peter which is based on this knowledge and specific experience gained over this time period and the published material listed above for Sizewell C.

2.7 An assessment methodology has been utilised which identifies criteria common to all options and scores the individual options to determine which is the preferred option. Details are presented below in Section 5.

3. Basis of Review

3.1 The proposed nuclear power station would be located immediately to the north of the existing Sizewell B power station and would comprise two United Kingdom European Pressurised Reactor units with an expected electrical capacity of approximately 3,260MW.

3.2 There are a number of proposed associated development sites and measures to facilitate the construction and operation of the development. In transport terms these are a combination of demand management measures and physical mitigation measures in line with the transport strategy that is being devised for the proposed development.

3.3 To provide context for this review, the associated developments and measures that are being proposed to manage and mitigate transport impacts during the peak of construction, when the vast majority of the impacts occur, are listed below:

- Parking limited to 1,000 spaces at the site;
- Provision of a 2,400 bed accommodation campus at the site;
- Provision of 400 caravan pitches at the site;
- Two park & ride sites; one on the A12 at Darsham for workers travelling from the north and one on the A12 at Wickham Market for workers travelling from the south;
- Direct bus services from Ipswich and Lowestoft;
- Bus pick-up from Saxmundham for workers using the East Suffolk Line;
- Improvement of A12 / B1122 at Yoxford to form a roundabout;
- Provision of Sizewell Link Road (road-led strategy only - Mill Street improvement and Theberton by-pass under rail-led strategy);
- Two-village by-pass of Farnham and Stratford St Andrew;
- Freight management facility incorporating a demand management system off the A14 east of Ipswich;
- HGV movements over longer hours potentially under road-led strategy;
- Isolated highway improvements at seven locations;
- Rail infrastructure improvements at Sizewell Halt and level crossing upgrades;
- Light goods vehicle consolidation centre at Wickham Market.

3.4 Two transport strategies are currently being considered, one road-led and one rail-led. As the Sizewell link road is only proposed as part of the road-led strategy, this review only considers the road-led strategy.

3.5 The peak workforce estimate is for around 5,600 workers on the main development site with a further 500 workers at supporting developments. The main development site workforce profile is estimated to last for between 9 and 12 years with a peak in the workforce approximately half way through construction. The anticipated workforce profile is shown in Figure 1 below and emphasises the peaked nature of the workforce.

3.6 To ensure the assessments of transport effects are robust, EDF Energy have considered what the effects might be if the workforce numbers turned out to be higher - up to 7,900 on the main development site and 600 on associated development sites at peak. Traffic generations associated with these higher workforce numbers form the basis of review in this report.

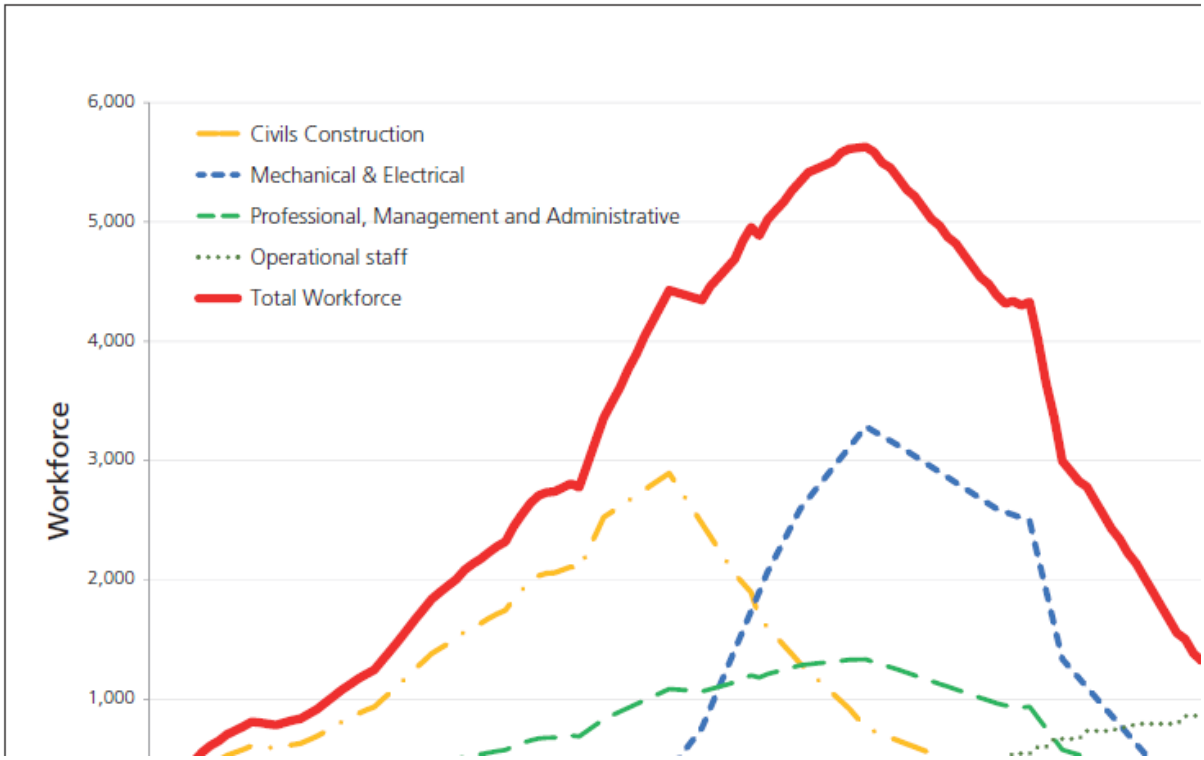
3.7 EDF Energy estimate that there would be an average of 375 HGV deliveries (750 movements) a day under the road-led strategy at peak construction. At many periods in the construction phase average HGV movements would be lower than the peak figures above. The figures are averages for a typical day, which means that on any given day the number of HGV movements could be higher or lower than set out. On infrequent occasions and on the busiest days, the number of HGV movements could be up to twice the average at 750 HGV deliveries (1,500 movements) a day.

3.8 In the early years of construction, before the peak, it is estimated that an HGV volume of 300 HGVs per day (600 movements) would be generated.

3.9 HGV movements would be spread across the day, with a greater proportion of deliveries occurring in the morning. Analysis is based on an assumption of HGV deliveries between the hours of 7am and 8pm, with more arriving in the morning than the afternoon.

3.10 Once operational, there would be a long-term legacy of 900 permanent jobs, as well as a regular short-term workforce of around 1,000 people during refuelling and maintenance outages.

Figure 1 - Workforce profile through the construction programme



Source: See Consultation Summary Document: Stage 3 Pre-Application Consultation: January 2019

3.11 In the early years of construction, neither road or rail mitigation measures would be in place. Therefore all main development site traffic would utilise the existing infrastructure to gain access to the development site.

3.12 A traffic model has been developed by EDF Energy to predict the traffic flows for various mitigation scenarios. The model has been developed in close cooperation with the relevant transport consultees such as Suffolk County Council. AECOM assume that the results of the modelling are representative and take the results at face value to inform this peer review.

3.13 Traffic modelling conducted to assess the traffic effects of the construction phase is based on the latest estimates of the additional traffic that the project would generate during both the early years (2022) and the period of peak construction (2027), when the maximum number of construction workers would be on-site. For robustness, it is also assumed that the maximum number of workers would coincide with the peak number of HGV movements.

3.14 Other key modelling assumptions are as follows:

- Three to nine buses from northern and southern park and ride sites per hour during staff changeover periods, hourly service outside staff changeover periods;
- Half hourly frequency of direct buses from Ipswich and Lowestoft during staff changeover periods plus hourly shuttle bus from Saxmundham railway station;
- Total of 644 direct and park and ride bus movements per day;
- Routing of direct and park and ride bus movements is via A12 / B1122 / Sizewell Link Road;

- 700 LGV movements per day, of which 175 are to and from the postal consolidation facility at Wickham Market;
- Routing of HGV movements is via A12 / B1122 / Sizewell Link Road; and
- Origin of HGVs is 85% from A12 south and 15% from A12 north.

3.15 A number of worst case factors have been incorporated into the modelling such as seasonality uplifts, Sizewell B outage traffic, Sizewell B visitors, Sizewell B and C visitor centre traffic and the weekend effect where workers staying in the accommodation campus will arrive on Monday mornings and leave on Friday afternoons. The result is robust flows for assessment where, in reality, actual Sizewell C flows would be lower.

3.16 Based on the modelling, the forecast early years and peak of construction traffic flows between the A12 and the development site access (along the B1122 / Sizewell Link Road corridor as the modelled designated route) have been presented in the Stage 3 Consultation material.

3.17 Forecast flows for the early years (2024) are as follows:

Table 1. 2024 early years forecast 24 hour traffic flows along the B1122

Location	Modelled Scenario	
	2024 reference case	2024 with Sizewell C
B1122 at Yoxford	4,400	5,300
B1122 at Middleton Moor	4,400	5,250
B1122 at Theberton	6,550	7,700
SLR at Yoxford	n/a	n/a
SLR at Middleton Moor	n/a	n/a
SLR at Theberton	n/a	n/a

Source: Volume 1, Chapter 6, Table 6.13: Stage 3 Pre-Application Consultation: January 2019

Table 2. 2024 early years Sizewell C 24 hour flows along the B1122

Location	Modelled Scenario		
	Cars	Buses	HGV's
B1122 at Yoxford	280	0	620
B1122 at Middleton Moor	250	0	600
B1122 at Theberton	500	0	600
SLR at Yoxford	n/a	n/a	n/a
SLR at Middleton Moor	n/a	n/a	n/a
SLR at Theberton	n/a	n/a	n/a

Source: Volume 1, Chapter 6, Tables 6.13 and 6.15: Stage 3 Pre-Application Consultation: January 2019

3.18 Forecast flows for the peak of construction (2027) for the busiest day are as follows:

Table 3. 2027 peak of construction forecast 24 hour traffic flow along the B1122 / Sizewell Link Road

Location	Modelled Scenario	
	2027 reference case	2027 with Sizewell C
B1122 at Yoxford	4,600	5,300 – 5,600
B1122 at Middleton Moor	4,600	450
B1122 at Theberton	6,800	650
SLR at Yoxford	n/a	2,300
SLR at Middleton Moor	n/a	9,650
SLR at Theberton	n/a	9,650

Source: Volume 1, Chapter 6, Table 6.2: Stage 3 Pre-Application Consultation: January 2019

Table 4. 2027 typical day Sizewell C 24 hour flows along the B1122 / Sizewell Link Road

Location	Modelled Scenario		
	Cars	Buses	HGV's
B1122 at Yoxford	660	230	110
B1122 at Middleton Moor	0	0	0
B1122 at Theberton	100	0	0
SLR at Yoxford	290	220	640
SLR at Middleton Moor	1,550	450	750
SLR at Theberton	1,550	450	750

Source: Volume 1, Chapter 6, Tables 6.2 and 6.4: Stage 3 Pre-Application Consultation: January 2019

Table 5. 2027 busiest day Sizewell C 24 hour flows along the B1122 / Sizewell Link Road

Location	Modelled Scenario		
	Cars	Buses	HGV's
B1122 at Yoxford	540	230	230
B1122 at Middleton Moor	0	0	0
B1122 at Theberton	100	0	0
SLR at Yoxford	?	220	1,280
SLR at Middleton Moor	800	450	1,500
SLR at Theberton	800	450	1,500

Source: Volume 1, Chapter 6, Tables 6.2 and 6.5: Stage 3 Pre-Application Consultation: January 2019

4. Route Options Considered

4.1 The mitigation proposed to address the transport impacts of Sizewell C construction has a long history. The existing B1122 was improved in 1987 in preparation for the construction of Sizewell B. Sizewell B was ultimately built using the B1122 as the designated access route.

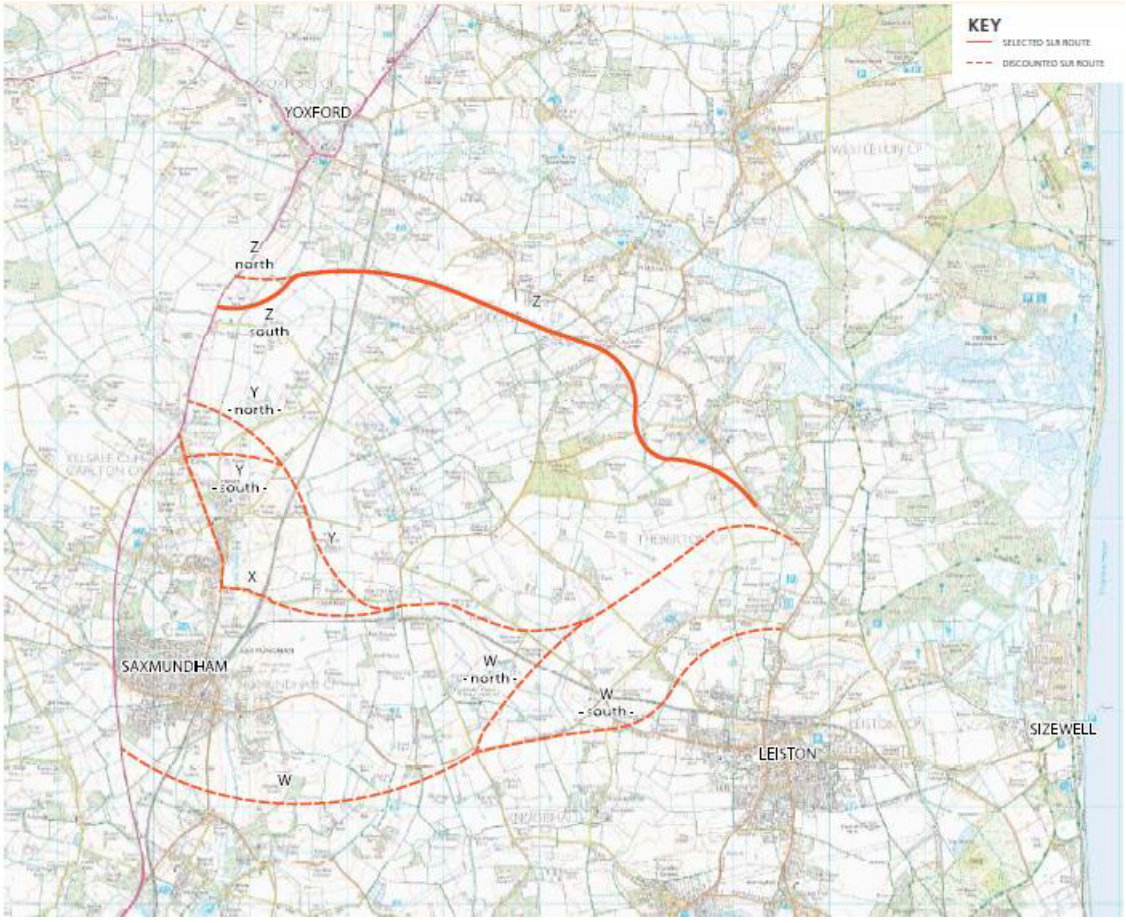
4.2 The announcement of the intention to also construct Sizewell C at that time led to the study of possible link road options between the A12 and Sizewell to accommodate combined B and C construction traffic. Sizewell C did not progress and a link road was not built.

4.3 The options study undertaken at that time on behalf of Suffolk County Council went through two consultation exercises and resulted in the selection of route D2 as the preferred option.

4.4 Set against this history, the consideration of improvements between the A12 and Sizewell has again been raised in connection with the current proposals for Sizewell C. Suffolk County Council commissioned a study in 2013 to investigate options for providing relief to communities along the B1122. This study came to no firm recommendation but did seem to favour improvements along the B1122 rather than the D2 route based on economic and environmental considerations.

4.5 EDF Energy has promoted the B1122 as the preferred route of access to Sizewell C for construction and operation in their Stage 1 and Stage 2 consultations. In response to consultation feedback, EDF Energy have investigated options for a Sizewell Link Road linking the A12 with the proposed Sizewell C site access. The options considered are identified in the following figure.

Figure 2 - Sizewell Link Road Options



4.6 EDF Energy has undertaken a high-level environmental appraisal of the four proposed routes (and their variations) based on the potential effects on PRoWs, local road character, heritage assets, landscape designations, landscape character and views, and residential amenity.

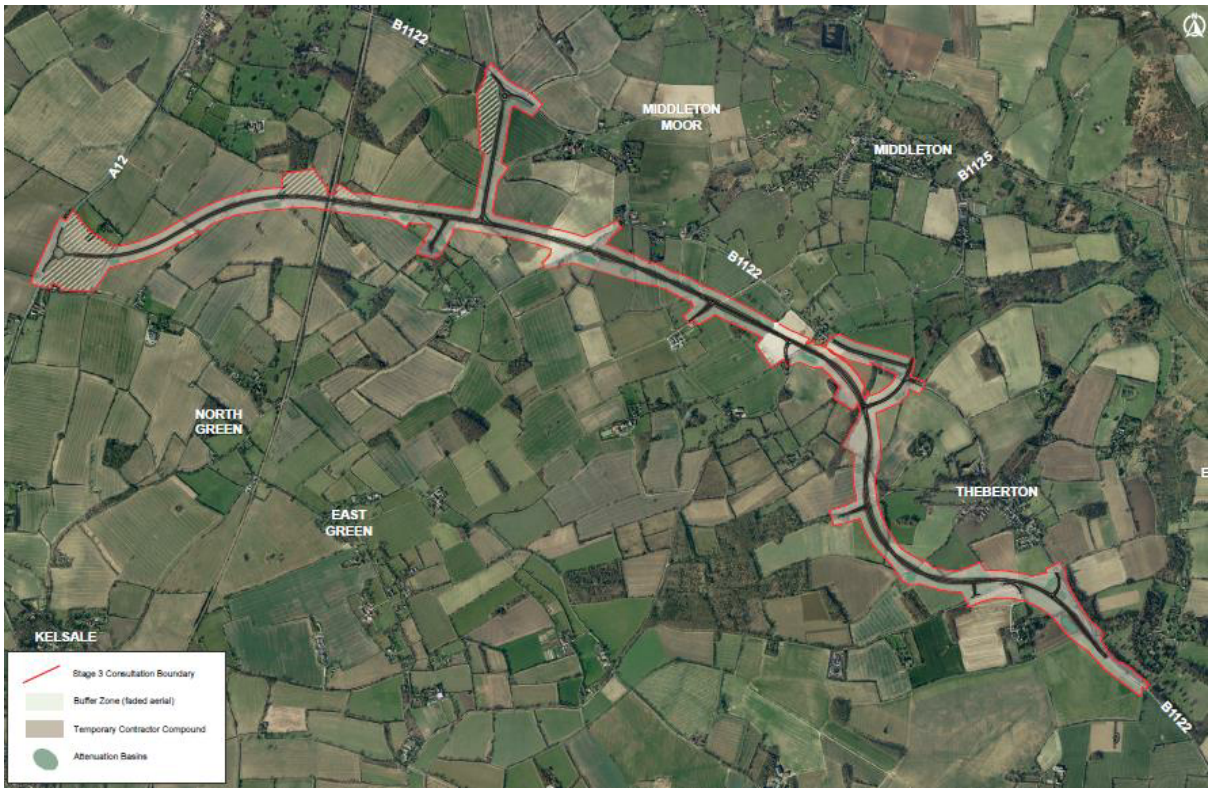
4.7 Route W is equivalent to the D2 route referred to above which was selected as the preferred by-pass route in the 1980's.

4.8 Route Z South is the route alignment that EDF Energy has proposed through Stage 3 consultation to form the Sizewell Link Road.

4.9 The Sizewell Link Road would bypass the B1122 with a new single carriageway road to the south-west. The proposed route would run approximately 6.8 km across predominantly agricultural land to the south-west of the existing B1122. The bypass would be a single carriageway 7.3m wide with 1m hardstrips and 2.5m verges, earthworks where needed and a 5m berm. The side roads would be approximately 6m in width, with the exception of the new connections to the B1125 and to the B1122 west of Middleton Moor, which would be 7.3m wide.

4.10 The alignment of Route Z South to form the Sizewell Link Road is shown in the figure below.

Figure 3 - Preferred Route Z South to form the Sizewell Link Road



5. Assessment of Options

5.1 The purpose of this review is to provide an independent assessment of the previously identified options for the Sizewell Link Road culminating in the recommendation of a preferred option.

5.2 It is important that the selection method is transparent and justified and capable of scrutiny. As set out in the methodology section above, the assessment is based on a desktop review of the information made available, observations made during a site visit as well as the professional judgement of the author.

5.3 The method adopted is to identify what are considered to be the key assessment criteria and to provide a reasoned scoring of each option against these criteria. The criteria, a description for each and a scoring range are set out in the table below.

Table 6. Assessment criteria and scoring range

Criteria	Definition and Description	Scoring Range
Relief to Communities	Does the option effectively provide relief to communities along the existing routes from the A12 to the site.	1 = Ineffective Relief 5 = Effective relief
Scale of Cost	Each option has a cost based on the scope and scale of works involved. This provides a measure of the scale of costs between options.	1 = Lowest Cost 5 = Highest Cost
Minimising Route Mileage	Route mileage is an important sustainability factor. Does the option minimise mileage to achieve environmental benefits.	1 = Longest Route 5 = Shortest Route
Legacy Benefit	Does the option provide a benefit beyond construction related to need.	1 = No Legacy benefit 5 = Legacy Benefit
Engineering Impact	Does the option of a new major highway fit in the landscape and can it be seen. Are construction impacts acceptable.	1 = High Impacts 5 = Low Impacts
Transport Policy	Does the option comply with transport policy which requires that impacts are identified and cost effectively mitigated.	1 = Does Not Comply 5 = Comply
Transport Environmental and Safety Topics	How does the option address driver delay, pedestrian delay, pedestrian amenity, fear & intimidation and accidents & safety.	1 = Not Addressed 5 = Fully Addressed
Other Environmental Topics	How does the option address landscape, heritage, noise, air quality and soils.	1 = Not Addressed 5 = Fully Addressed

Source: AECOM

5.4 The 1 to 5 scoring range is such that, when all individual scores for an option are added, the lowest combined score will be the worst performing option and the highest combined score will be the best performing option and therefore the recommended preferred option based on the ranking undertaken.

5.5 Consideration has been given to weighted scoring on the basis that, for example, achieving the key aims and objectives is more important than being transport policy compliant. However, it is considered that this introduces an added layer of subjectivity so has been rejected.

5.6 The criteria that have been identified against which to assess the options are under four main headings:

- Key Aims & Objectives;
- Policy;
- Environmental and Safety Topics – Transport; and
- Environmental Topics – Other.

5.7 Key aims and objectives cover tangible and measurable issues such as the degree to which the options relieve the transport impacts of development, the legacy benefit of options and the engineering impact of options. One of the biggest issues has to be the impacts associated with a new highway through open countryside and how this can best be developed given the timescales and disruption that will arise during construction. The key aims and objectives are where the real differentiation between options lies.

5.8 Policy is fairly consistent across all options and is more a process of identification of issues and mitigation of effects. There is a question as to how effective the mitigation needs to be but the context here is that

EDF Energy have already declared in the Stage 3 consultation documents that the environmental impacts along the B1122 from, in particular, noise, vibration and severance from the Sizewell C traffic require mitigation under the road-led strategy.

5.9 The potential development of Sizewell C has been known about for over 30 years and various assessments have been undertaken over this period to secure the identification of the site in National Policy Statements EN-1 and EN-6.

5.10 Policy recognises that the transport of materials, goods and personnel to and from a development during all project phases can have a variety of impacts on the surrounding transport infrastructure and potentially on connecting transport networks, for example through increased congestion. For Sizewell, the construction of B station is within living memory and was successfully achieved via the existing road network. However, the scale and impacts of Sizewell C appear to be larger and environmental legislation is more stringent now.

5.11 Transport environmental effects are well established and assessment methodology is set out in 'Guidelines for the Environmental Assessment of Road Traffic': IEA – 1993. With new build options, it should be possible to design out any impacts and therefore all options will score at a similar level.

5.12 Other environmental impacts have been assessed by EDF Energy as set out in the Stage 3 Consultation documents and the conclusions drawn by this work inform the scoring for each option.

5.13 Each of the routes identified in Section 4 above have been reviewed and the overarching summary is as follows:

- Route Option W:

  The most southerly of the four route options and, on the face of it, the best placed to intercept the predicted origin of HGV traffic (80% from the south). The connection point with the A12 has sufficient space and visibility to accommodate a high capacity junction. Significant engineering works would be required to climb up to cross the East Suffolk railway line. Once over the railway and the B1121, the topography falls gently to the east allowing long range views of the alignment from roads, public footpaths and communities. Generally speaking, there are no communities along the B1119 that benefit from being bypassed other than Saxmundham itself. When compared to the B1122 as the route of access it would provide relief to Yoxford, Middleton Moor and Theberton if declared a designated route for all Sizewell C traffic. Could form a signed access route to Leiston thus providing some relief to Saxmundham. The highly engineered, DMRB compliant road would be out of character with the area that is characterised by country lanes that follow field boundaries.

- Route Option X:

  Leaves the A12 Saxmundham by-pass at an existing priority junction onto the B1121 and draws traffic into Kelsale and Carlton. Junction may need upgrading. Runs parallel to the C class Clay Hills road and will need to cross the East Suffolk railway line on a bridge structure. The topography is flat and enclosed by tree belts between the railway crossing and Oak Tree Farm allowing only short and medium range views of the alignment from roads, public footpaths and communities. Once past Oak Tree Farm, the topography falls gently to the east allowing long range views of the alignment from roads, public footpaths and communities. When compared to the B1122 as the route of access it would provide relief to Yoxford, Middleton Moor and Theberton if declared a designated route for all Sizewell C traffic but it does increase traffic through Kelsale and Carlton and has impacts on a number of isolated farms. The highly engineered, DMRB compliant road would be out of character with the area that is characterised by country lanes that follow field boundaries.

- Route Option Y:

  Geographically, the central option and, on the face of it, well placed to intercept traffic from the north and the south. The connection point with the A12 seems constrained and forward visibility standards along the A12 may be difficult to achieve. The topography falls away quickly from the A12 and, in combination with tree belts restricts views to only short and medium range from roads, public footpaths and communities. Past Oak Tree Farm, it adopts the alignment of Route Option X where the topography falls gently to the east allowing long range views of the alignment from roads, public footpaths and communities. When compared to the B1122 as the route of access it would provide relief to Yoxford, Middleton Moor and Theberton if declared a designated route for all Sizewell C traffic but has impacts on a number of isolated farms. The highly engineered, DMRB

compliant road would be out of character with the area that is characterised by country lanes that follow field boundaries.

- Route Option Z:

  The most northerly of the routes and, on the face of it, not well placed to intercept the predicted origin of HGV traffic (80% from the south). Two proposed connections with the A12, one south and one north of Yoxford would mean no Sizewell HGV traffic needs to pass through Yoxford. Both connection points are adequate to form new junctions. The topography is relatively flat between the A12 and the railway which results in long distance views from some roads, public footpaths and communities. The railway is in a slight cutting where it is crossed. The use of the existing B1122 by vehicles from the north utilises the widest part of the road and crosses the railway at a level crossing. Once over the railway, the topography undulates which, in combination with tree belts, restricts views to only short and medium range from roads, public footpaths and communities. This option is the most related to the communities along the B1122 that it seeks to relieve and therefore has a logic that the other routes do not have. An effective by-pass of both Middleton Moor and Theberton is achieved to address the environmental issues identified but there are impacts caused to some isolated properties. The highly engineered, DMRB compliant road would be out of character with the area immediately west and east of the railway which is characterised by an open landscape and country lanes that follow field boundaries. It is better related around Middleton Moor and Theberton where it acts as an obvious by-pass.

5.14 A detailed assessment and scoring exercise has been undertaken which is provided in Appendix A. This provides a reasoned rationale for how the route option being assessed relates to the criteria being considered and a score from the 1 to 5 scoring range. The scoring is based on the evidence available and professional judgement.

5.15 The results of the assessment score and rank the route options as follows:

Table 7. Scoring and Ranking of Route Options

Route Option	Scoring and Ranking	
	Score Achieved	Ranking
Route Option W	51	3
Route Option X	50	4
Route Option Y	54	2
Route Option Z	62	1 – Preferred Option

Source: AECOM

6. Summary and Conclusions

6.1 AECOM has been commissioned by EDF Energy to undertake a peer review of their work to assess the identified options for the Sizewell Link Road and the rationale in selecting a preferred option.

6.2 The aim of this peer review was to provide an independent second opinion on the selection process.

6.3 A methodology has been devised which is based on a desk based review of existing published information, a site visit to provide context and site specific information and the professional experience and judgement of the peer reviewer.

6.4 An assessment methodology has been utilised which identifies criteria common to all options and scores the individual options to determine which is the preferred option.

6.5 This independent assessment finds that Route Option Z scores the best against the assessment criteria and is recommended as the preferred option from the four route options assessed.

Appendix A - Detailed Assessment and Scoring Exercise

Detailed Assessment and Scoring of Options

Option	Key Aims and Objectives										Policy		Environmental Topics - Transport										Environmental Topics - Other								Scoring	
	Relief to communities		Cost / benefit		Minimising route mileage		Legacy benefit		Engineering impact		Transport Policy		Driver Delay		Pedestrian Delay		Pedestrian Amenity		Fear & Intimidation		Accidents & Safety		Landscape		Heritage		Noise		Air Quality		Total Score	Rank Order
	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score	Comments	Score		
On-Line Improvements	On-line improvements on any of the existing routes between the A12 and the site access would not provide any significant relief of impacts on communities affected.	1	The cost of on-line improvements are likely to be considerably less than off-line improvement schemes and would be able to deliver any capacity improvements. However, they would not address environmental impacts.	5	Measured from a common point both north and south of the link road options and taking account of the split of HGV and bus movements, the B1122 results in 15% more mileage than Alignment Z.	1	The existing road layout is well within capacity limits and therefore any improvements are not required in the future and do not deliver any legacy benefits. There would be some safety benefits.	2	Improvement of the existing highway alignment would be in scale with existing character of the area with minimal land take and visual intrusion.	5	NPS-EN1 requires that the detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Not all impacts are mitigated with this option.	2	It should be possible through demand management and junction design to minimise driver delay caused by congestion. The outcome cannot be expected to be as effective as off-line improvements.	4	Changes in the volume and composition of traffic using access routes would result in greater difficulty in crossing the road in settlements. Pedestrians using PROW's may also incur delays.	3	Pedestrian facilities in the existing settlements generally have little separation from the carriageway. Pedestrians would experience the general effects of increased traffic levels.	2	Pedestrians in settlements walking adjacent to the highway would experience the effects of a large increase in traffic levels, particularly buses and HGV's.	2	A review of accidents along the various access roads show a relatively high degree of accidents over the last 5 years. Possibly due to the B and C road standards. A significant increase in traffic flow is very likely to increase the accident rate.	2	On-line improvements would have minimal effect on landscape character.	4	On-line improvements would have minimal effect on existing historic assets.	4	On-line improvements would provide little relief to existing noise receptors.	2	On-line improvements would provide little relief to existing air quality receptors.	2	41	5
Alignment W	Not well related to the communities of Yoxford, Middleton Moor and Theberton which are being relieved. Could result in some relief to Saxmundham as an alternative to B1119.	4	Costed in the 2014 Suffolk County Council report at £55m. Although there may be minor variations to the design and alignment now being considered this cost is regarded as suitable for comparison purposes.	2	Measured from a common point both north and south of the link road options and taking account of the split of HGV and bus movements, Alignment W results in 11% more mileage than Alignment Z.	3	Additional capacity is not needed between the A12 and Sizewell as existing routes are well within capacity. Only legacy benefit would be related to safety and the reduction in accident risk. Could be a new signed route to Leiston.	2	The existing nature of the area is one of long range views and country lanes that respect field boundaries. A new DMRB road with associated engineering cut and fill will be very intrusive.	1	NPS-EN1 requires that the detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Adequate demand management and mitigation is proposed.	5	Detailed design of route option would include minimising delay. Traffic demand is well below design criteria and management measures are available to reduce any peaks in demand.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design to DMRB standards would include the required safety standards.	5	Impact on landscape character over most of the route length.	1	Potential effects on the setting of a number of historic assets (Grade I, II and II*) along each route. Key assets to consider include Hurts Hall and Leiston Abbey.	2	Impact on a small number of isolated properties.	3	Impact on a small number of isolated properties.	3	51	3
Alignment X	Not well related to the communities of Yoxford, Middleton Moor and Theberton which are being relieved. Would result in more traffic in Kelsale and Carlton and impact on a number of isolated properties.	4	No cost estimates have been calculated for this option. However, based on route length compared to Alignment W, a cost estimate of £44m results.	3	Measured from a common point both north and south of the link road options and taking account of the split of HGV and bus movements, Alignment X results in 5% more mileage than Alignment Z.	4	Additional capacity is not needed between the A12 and Sizewell. The route would attract additional traffic to Saxmundham. Only legacy benefit would be related to safety and the reduction in accident risk.	1	The existing nature of the area is one of short, medium and long range views and country lanes that respect field boundaries. A new DMRB road with associated engineering cut and fill will be very intrusive.	2	NPS-EN1 requires that the detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Adequate demand management and mitigation is proposed.	5	Detailed design of route option would include minimising delay. Traffic demand is well below design criteria and management measures are available to reduce any peaks in demand.	4	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity is expected in Kelsale and Carlton and PROW crossings of the route are required.	4	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity is expected in Kelsale and Carlton and PROW crossings of the route are required.	4	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity is expected in Kelsale and Carlton and PROW crossings of the route are required.	4	Detailed design to DMRB standards would include the required safety standards.	5	Local landscape character	2	Potential effects on the setting of a number of historic assets (Grade II and Grade II*) with the extent of Saxmundham.	4	Potential effects in Kelsale and Carlton.	2	Potential effects in Kelsale and Carlton.	2	50	4
Alignment Y	Not well related to the communities of Yoxford, Middleton Moor and Theberton which are being relieved. Would result in impact on a number of isolated properties.	4	No cost estimates have been calculated for this option. However, based on route length compared to Alignment W, a cost estimate of £54m results.	2	Measured from a common point both north and south of the link options and taking account of the split of HGV and bus movements, Alignment Y results in 20% more mileage than Alignment Z.	2	Additional capacity is not needed between the A12 and Sizewell. However, the route could be a new signed route to Leiston. Potential reduction in accident risk.	2	The existing nature of the area is one of long range views and country lanes that respect field boundaries. A new DMRB road with associated engineering cut and fill will be very intrusive.	2	NPS-EN1 requires that the detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Adequate demand management and mitigation is proposed.	5	Detailed design of route option would include minimising delay. Traffic demand is well below design criteria and management measures are available to reduce any peaks in demand.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design to DMRB standards would include the required safety standards.	5	Impact on landscape character north of Kelsale.	2	Potential effects on the setting of Oak Tree Farmhouse (Grade II).	4	Impact on a small number of isolated properties.	3	Impact on a small number of isolated properties.	3	54	2
Alignment Z	This option is the most related to the communities along the B1122 that it seeks to relieve and therefore has a logic that the other routes do not have. Effective relief of Yoxford, Middleton Moor and Theberton but an impact on a number of isolated properties.	5	No cost estimates have been calculated for this option. However, based on route length compared to Alignment W, a cost estimate of £46m results.	3	Measured from a common point both north and south of the link road options and taking account of the split of HGV and bus movements, Alignment Z results in the least route mileage of all options.	5	As the signed route to Sizewell B and C this route would continue to provide relief to Yoxford, Middleton Moor and Theberton during outages.	4	The DMRB compliant road would be out of character with the area immediately west and east of the railway. It is better related around Middleton Moor and Theberton where it acts as an obvious by-pass.	3	NPS-EN1 requires that the detrimental impacts on the surrounding transport infrastructure should be managed and mitigated during all stages of the development. Adequate demand management and mitigation is proposed.	5	Detailed design of route option would include minimising delay. Traffic demand is well below design criteria and management measures are available to reduce any peaks in demand.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design of route option would include providing adequate pedestrian facilities. Pedestrian activity along the route is not expected but PROW crossings of the route are required.	5	Detailed design to DMRB standards would include the required safety standards.	5	Impact on landscape character between A12 and immediately east of railway crossing.	3	Potential effects on the setting of a number of historic assets (Grade II). Key assets to consider include Dovehouse Farmhouse, Theberton Hall and The Gates / Walls at Theberton Hall.	3	Potential impacts at Annesons Cottages and Valley Farm.	3	Potential impacts at Annesons Cottages and Valley Farm.	3	62	1 Preferred Route

AECOM Limited
5th Floor, 2 City Walk
Leeds LS11 9AR
United Kingdom

T: +44 (0)113 391 6800
aecom.com