Sunderland City Council and South Tyneside Council

Impact Study – International Advanced Manufacturing Park

Topic Paper: Displacement

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Contents

1 Introduction

1.1 Overview

Sunderland and South Tyneside Councils are working jointly to secure the development of an International Advanced Manufacturing Park (IAMP) on land to the north of Nissan in Sunderland.

The development will comprise of around 100 ha, suitable for uses within the automotive and advanced manufacturing sectors, along with some distribution uses linked to these growth sectors. The IAMP is expected to create in the region of 5,000 gross jobs on the site.

This Paper examines the potential for displacement effects and forms part of Arup's assessment of the economic and housing market impacts of the IAMP. The assessment will be used as part of the evidence base to inform the emerging development plans of the two Councils.

1.2 Objectives of this paper

The primary objective of this Paper is to assess any potential displacement effects on other economic locations within the North East Local Enterprise Partnership (NELEP) area.

To meet this objective, the following specific aspects are examined:

- The potential for relocation of existing jobs from established locations across the NELEP area; and
- The potential for the supply chain and multiplier effects of the IAMP to generate demand for sites and space in Sunderland, South Tyneside and in neighbouring areas.

Understanding the potential displacement and economic multiplier effects of the IAMP will assist in identifying actions that can be taken to maximise the net additional economic contribution of the project.

2 Approach

2.1 Assessment methodology

The development of a robust economic impact framework is central to the approach applied.

The scale of the proposed IAMP and associated investment of public funds means that it is critical that the project maximises its net economic impact on the economy. In order to understand the potential net additional economic impact of the project it is necessary to undertake an assessment of the potential leakage, displacement and economic multiplier effects.

The analysis in this Paper utilises available evidence to estimate the expected strength of each of these effects. The analysis is based on Arup's experience in economic appraisal and evaluation of a number of major investments across the UK and the principles set out in the HM Treasury's Green Book and the Homes and Communities Agency's Additionality Guide.

The assessment uses the gross jobs estimate for the scheme provided by PwC's Strategic Business Case work[1] as the starting point from which to estimate net impacts.

2.2 Spatial scale

The project is assessed at the NELEP area spatial scale. This area covers County Durham, Gateshead, Newcastle, North Tyneside, Northumberland, South Tyneside and Sunderland local authority areas.

2.3 Summary of approach

The assessment has involved the following tasks:

1. **Review of gross job impacts estimates** - including the composition of expected employment at the IAMP;
2. **Review of strategic policy context** – including the NELEP Strategic Economic Plan and Enterprise Zones documentation;
3. **Analysis of existing major employment locations in the NELEP area** - including consideration of operational lifetime, attractiveness to regional and international investment, labour markets and connectivity to existing economic locations;
4. **Collation of evidence on potential interactions with other major employment locations** – including consultations with local authorities in the region around existing and planned employment sites;
5. **Estimation of the leakage, displacement and economic multiplier effects of the IAMP scheme** - utilising findings of the analysis of major employment locations, best practice and results of business consultation activity; and

[1] Sunderland City Deal in Partnership with South Tyneside: International Advanced Manufacturing Park, Strategic Business Case (November 2013).

6. **Sensitivity testing** - to cater for a range of potential outcomes.

4 Assessment

4.1 Overview

This section sets out a summary of the findings of the assessment.

The assessment begins by outlining the overarching vision for the IAMP and exploring the estimates of the gross economic impacts produced by PwC (estimates which underpin the City Deal). This is followed by an analysis of other major employment locations, focused on identifying key characteristics and the potential nature of interactions with the IAMP.

This evidence is used to inform an estimate of the net additionality of the project. Sensitivity testing of appropriate aspects is also undertaken and recommendations made in maximising the net impacts.

4.2 IAMP project

The development of the IAMP is central to the Sunderland City Deal.

The overall vision for the project is a 100 ha development to the west of Sunderland city centre that will house new automotive, logistics and offshore manufacturing businesses.

The IAMP will extend the prime location for automotive and other advanced manufacturing and engineering activities that currently comprises the Nissan plant, its supply chain and Sunderland's Enterprise Zone. The new development will host new and expanding manufacturing operations, the majority of which will be international firms.

The case for the IAMP is based on the strong growth in the automotive sector in the UK, both in vehicle production and supply chain activity. The Department for Business, Innovation and Skills (BIS) automotive strategy estimates that £3 billion of supply chain production could be brought to the UK. The Sunderland Enterprise Zone, adjacent to the Nissan plant, has attracted a 421,000 sq ft logistics facility providing supply support to Nissan and other local manufacturers.

The City Deal also confirms investment in the New Wear Crossing, a key component of the Sunderland Strategic Transport Corridor, supporting the IAMP. In addition, plans are being taken forward to develop a Central Business District on the former Vaux Brewery site to re-establish the city centre. This is expected to deliver 3,700 new city centre jobs by 2031.

4.3 Gross impacts

The proposition for the IAMP is underpinned by work undertaken on PwC. This work has established the demand case, proposed floorspace, phasing and estimated gross employment impacts.

Demand case

The Strategic Employment Study[2] undertaken by PwC indicates that automotive demand will continue to grow and more land will be required to sustain this growth.

The following table provides an overview of the estimated levels of floorspace demand for the automotive, advanced manufacturing and distribution sectors across a range of scenarios. Under the moderate scenario, there is an estimated floorspace requirement of 142 ha of development land for automotive, advanced manufacturing/engineering and distribution in the region over the next 20 years. Around 74% of this requirement is attributed to the automotive sector, with much smaller requirements in advanced manufacturing and distribution.

Table 3.1: Floorspace Requirement Based on Demand Analysis

	Gross sqm GIA by Scenario		
	Pessimistic	**Moderate**	**Very Optimistic**
Automotive	-220,000 (-55)	422,000 (105.5)	800,000 (200)
Advanced Manufacturing/Engineering	22,000 (5.5)	53,600 (13.4)	92,000 (23)
Distribution	0 (0)	94,000 (23.5)	240,000 (60)
Total IAMP requirement	**-198,000 (-49.5)**	**569,600 (142.40)**	**1,132,000 (283)**

Source: Arup summary of PwC figures.

Notes: Figures in brackets are hectares.

Sunderland and South Tyneside Councils' recent investor enquiry data suggests that the current land supply for large-scale industrial development is insufficient to meet this projected market demand. This is largely attributable to a lack of suitably large sites capable of being developed, and a lack of good quality units to meet the demands of new or expanding businesses wishing to locate in the area.

Floorspace

When completed, the IAMP will comprise the new 100 ha development plus the existing Nissan plant and the existing supplier park.

The PwC analysis suggests a phased approach to the development, as follows:

- Phase 1: 2018/19 – 2020/21
- Phase 2: 2020/21 – 2023/24
- Phase 3: 2024/25 – 2026/27

[2] Sunderland and South Tyneside Strategic Employment Study (August 2013).

The proposed floorspace is primarily B2/B8 (General Industrial and Distribution) space (around 90% of total floorspace) with the remainder being allocated as offices. A summary of the proposed floorspace and phasing is provided in the following table.

Table 3.2: Summary of Proposed Floorspace, IAMP

	Offices	B2/B8	Total
Phase 1	5,700	57,000	62,700
Phase 2	11,300	113,000	124,300
Phase 3	6,750	67,500	74,250
	23,750	**237,500**	**261,250**

Source: Arup summary of PwC figures.

The total proposed floorspace of 261,250 sqm is substantially less than the estimated requirement of 569,600 sqm identified in the 'moderate' scenario of the demand case prepared by PwC. The implication is that the central expectation for future demand is substantially greater than the proposed space at the IAMP and therefore a smaller probability of an overprovision of space (and potential displacement). The timing of the identified demand coming to fruition vs. space being provided at the IAMP will of course be important. The outline proposal for the IAMP is to deliver in phases over a 10-year period.

It is noted that the commercial demand/need for other land uses is to be determined in the future as part of the subsequent master planning exercise.

Gross impacts

The Strategic Business Case produced by PwC provides estimates of the gross economic impact of the IAMP.

PwC's estimated benefits are based on the development profiles identified in the masterplan, implied employment densities (across the three sectors: automotive, advanced manufacturing and distribution, as evidence by HCA) and average annual GVA per employee (again from each sector as evidenced by regional data).

The preferred option produces a Benefit Cost Ratio (BCR) of 11:1. The project therefore performs strongly on value for money. The difference between forecast costs and benefits means that even if optimism bias of 100% was applied this would not alter the conclusion of significant net benefits. The analysis presented in the Strategic Business Case underpins the outputs outlined in the Sunderland City Deal.

The full employment estimates provided as part of the PwC schedule of floorspace provide a breakdown of the employment impact by floorspace type and phase. These gross employment estimates are used as the basis for estimating the net additional impact in subsequent sections of this paper. As above, it is recognised that the central expectation of future demand is above the quantum of proposed space at the IAMP (and associated with in order of 9,000 jobs).

Table 3.3: Summary of Gross Employment Estimates, IAMP

	Offices	B2/B8	Total
Phase 1	335	919	1,255
Phase 2	665	1,823	2,487
Phase 3	397	1,089	1,486
	1,397	**3,831**	**5,228**

Source: Arup summary of PwC figures.

4.4 Major employment locations

While it is considered that due to the specific types of use it will attract the IAMP will largely complement other proposals for employment development, it is necessary to examine other major employment locations to understand the likely fit of the IAMP within the wider sub regional offer.

An examination of other major employment locations has therefore been undertaken in conjunction with work underpinning the employment land and developments topic area analysis. The primary objective of this work has been to assess key site characteristics to determine the potential for competitive and complementary interactions with the proposed offer at the IAMP.

A list of sites for examination in relation to potential displacement impacts has been established, starting with the sites identified through the Area Action Plan process. This has been further developed drawing on consultations held with councils and other stakeholders across the NELEP area.

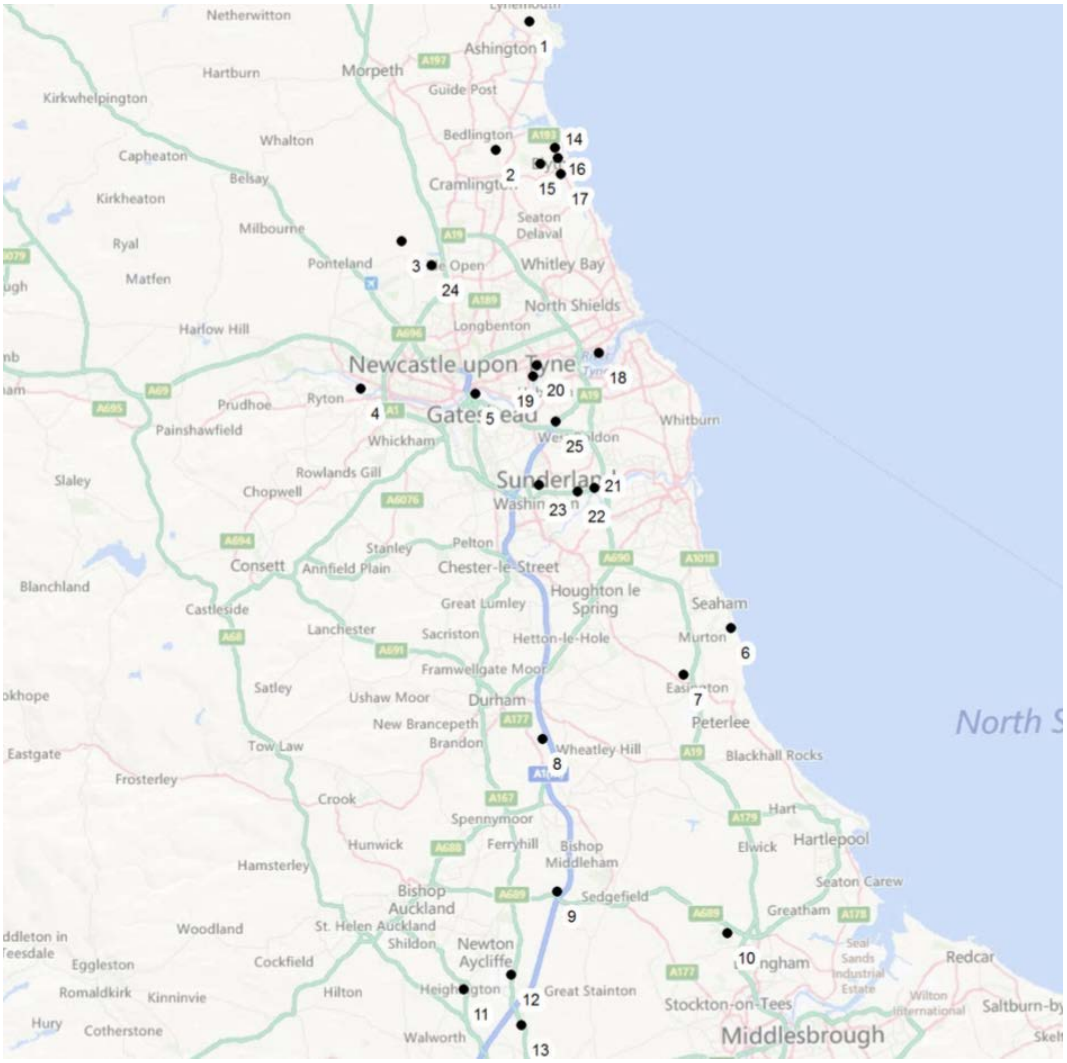
The table below provides a summary of the sites identified in terms of size and sectoral focus. The full analysis of sites is included in the employment land and developments topic area paper. The following two maps illustrate these sites spatially at the regional level and sites at the local level for Sunderland and South Tyneside.

Table 3.4: Sites identified for examination of displacement effects

	Site	Size	Sectoral focus and status
1	Northumberland Coastal Enterprise Centre	103ha	Identified for offshore oil & gas, renewables, advanced engineering and manufacturing sectors
2	West Hartford Business Park	55ha	Outline planning for B1, B2 & B8 industrial
3	Newcastle Great Park	80ha	Commercial office development, buildings 300-5,000sqm
4	Newburn Riverside Industrial Park	92ha	Planning for B1, B2 & B8 use for buildings up to 46,000sqm (allotted as 5-40ha plots)
5	Baltic Business Park	20ha	Developed for commercial office and education with buildings ranging from 4,500-16,000sqm
6	South of Seaham	68ha	Reserved for a centre of Creative Excellence
7	Hawthorn Business Park	22ha	Outline planning for B1, B2 & B8 industrial use for up to 66,000sqm of buildings (allotted as six plots from 4ha)
8	Tursdale Business Park	120ha	Identified for B1, B2 & B8 for medium to heavy industrial use with the potential for buildings up to 7,200sqm
9	Net Park	25ha	Identified for R&D and Technology Park with buildings up to 1,900sqm (allotted as 0.5-2ha plots)
10	Wynyard Park	205ha	Offices and industrial/warehouse space due to be delivered
11	Aycliffe Business Park (Heighington Lane West)	70ha	Reserved land for Distribution and Logistics use
12	Merchant Park (formerly Amazon Park)	52ha	Identified for B1, B2 & B8 for large industrial/warehousing. Part occupied by Hitachi Rail (3 sites remaining 3.5ha, 14.25ha and 17ha)
13	Faverdale Park	120ha	This site has been reserved for 2 single major industrial users
14	Indigo Park	33ha	To be developed for manufacturing and distribution users
15	Follingsby	37ha	Proposed for release for industrial and warehouse users (Local Plan Core Strategy suggests the net developable area is 22 ha)

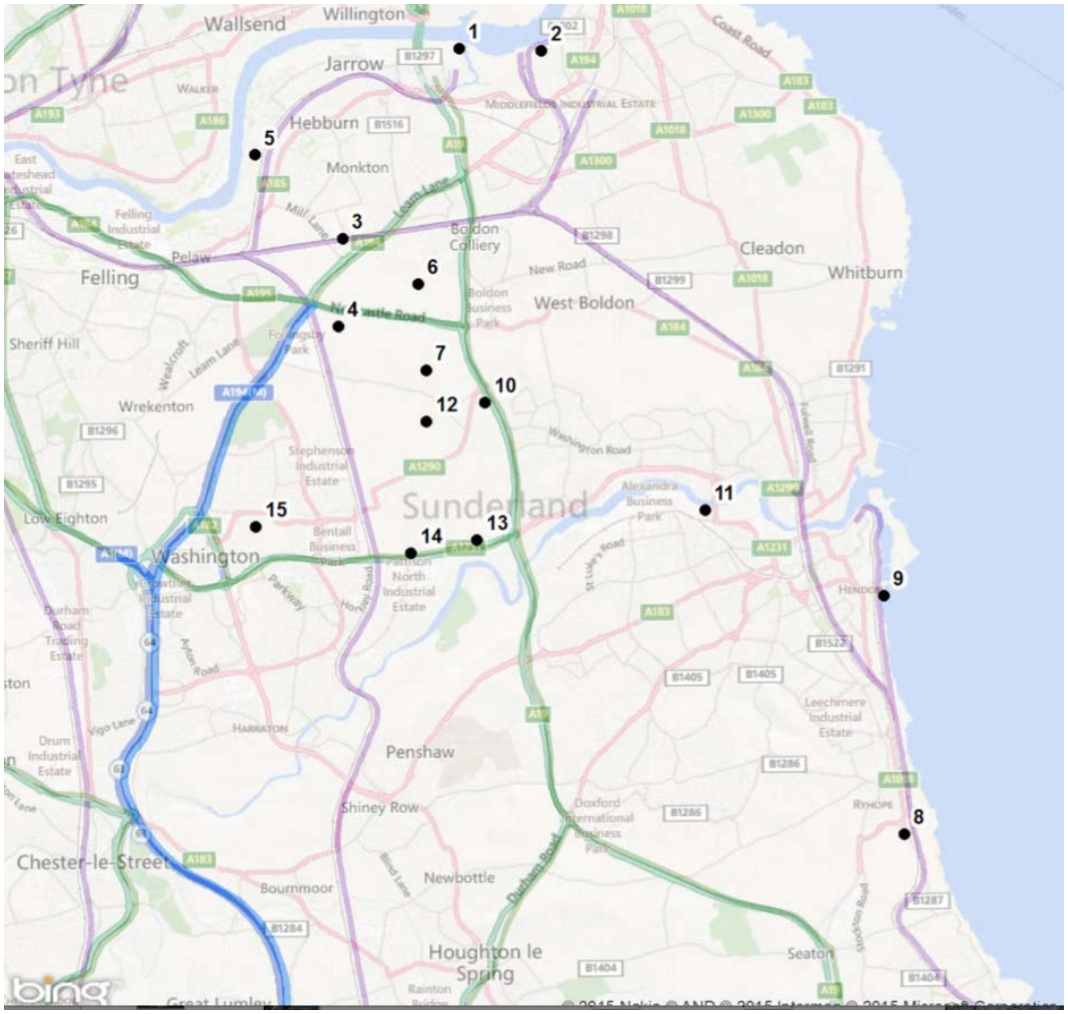
Source: Arup drawing on AAP and consultations.

Figure 3.1: Identified sites – Regional level



- 1 - Northumberland Coastal Enterprise Centre 103ha
- 2 - West Hartford 55ha
- 3 - Newcastle Great Park 80ha
- 4 - Newburn Riverside 92ha
- 5 - Baltic Business Park 20ha
- 6 - South of Seaham 68ha (Reserve Site)
- 7 - Hawthorn Business Park 22ha
- 8 - Tursdale 20ha
- 9 - Net Park 25ha
- 10 - Wynyard 205ha
- 11 - Merchant Park 70ha
- 12- Aycliffe Business Park 52ha
- 13 - Faverdale 120ha (Reserve Site)
- 14, 15, 16, 17 - Port of Blyth Enterprise Zones
- 18, 19, 20 - North of the River Tyne Enterprise Zones
- 21, 22, 23 - A19 Ultra Low Carbon Vehicle Enterprise Zone
- 25 - Follingsby
- 24 - Indigo Park

Figure 3.2: Identified sites – Sunderland and South Tyneside



1 *Green Business Park, Jarrow 5ha*
2 *Port of Tyne 8ha*
3 *Monkton Business Park, Hebburn 4ha*
4 *Wardley Colliery 10ha*
5 *Former British Short Circuit Test Station Site, Hebburn 8ha*
6 *Land Between Fellgate and the A184 45ha*
7 *Land Between Testos Roundabout and the South Tyneside Sunderland Boundary 75ha*
8 *South Ryhope 20ha*
9 *Hendon Sidings, Hendon 6ha*
10 *Land North of Nissan 25ha*
11 *Pallion Yards 16.5ha*
12 *Land to the North West of the Nissan Plant 175ha*
13 *Low Carbon Vehicle Enterprise Zones - Turbine Park, Vehicle Test Centre Site 32.53ha*
14 *Low Carbon Vehicle Enterprise Zones - Turbine Park, Vehicle Test Centre Site 32.53ha*
15 *Low Carbon Vehicle Enterprise Zones - Turbine Park, Vehicle Test Centre Site 32.53ha*

4.5 Net impacts

In appraising the net impacts of the IAMP it is important that the potential leakage, displacement and economic multiplier effects are considered. These need to be taken into account in order to assess the additional impact or additionality of the project i.e. the net changes over and above what would take place without the IAMP.

As identified in the project brief, project partners are particularly keen to understand the potential displacement and economic multiplier effects that could be generated by the project. In particular, to assess the balance between any potential negative displacement effects and positive economic multiplier effects.

The analysis utilises the findings of the existing evidence base (including The PwC Strategic Business Case), analysis of major employment locations and results of business consultation activity to determine net impacts. As outlined in the approach, the study area for assessing net impacts is the NELEP area.

Leakage

Leakage effects refer to the proportion of outputs that benefit those outside of the target area.

This could be treated as the proportion of employment that is taken up by individuals who do not reside in the NELEP area. In assessing the IAMP however, it is important to acknowledge the value of bringing new workers who will come and reside in area as a consequence of the higher skilled employment opportunities offered at the IAMP. Whilst individuals remaining in residence outside of the NELEP area may take up a proportion of jobs, this proportion is expected to be small. Data for existing Nissan workers indicates that only around 3.6% of workers reside outside of the NELEP area. Reflecting this while also taking a prudent approach to reflect the broader range of likely employment at the IAMP, an allowance for leakage of 5% is applied.

Displacement

Displacement refers to the proportion of outputs accounted for by reduced outputs elsewhere in the target area.

The scale of displacement effects will vary depending upon the nature of activity supported and local markets. Understanding potential displacement associated with the IAMP is a key area of interest for the project group. In particular, the extent of displacement in the commercial property market and the implications for employment.

The implications are considered in relation to:

- **Existing employment sites** – to what extent existing employment sites may experience a loss of existing occupiers. This will depend on type of firms currently located at these sites, i.e. would they benefit from co-location with Nissan.

  Also to what extent offer is competitive with the proposition at IAMP (even if no co-location benefits then some firms may still move, particularly from sites

in closer proximity). This could be a result of supply chain businesses relocating to take advantage of new modern space close to Nissan; and

- **Future planned employment space** – to what extent the take-up of future planned space may be affected by the provision at IAMP.

The PwC Strategic Business Case work indicates that the majority of site occupiers are likely to be inward investors or indigenous companies that might locate, or remain located, outside of the UK in absence of the IAMP. The demand study identifies that the IAMP is complementary to the existing UK automotive offer and given the profile of Nissan's global supply chain base, is likely to attract significant inward investor interest.

The PwC analysis therefore suggests that the potential for displacement is low, in particular since the proposed offer is distinct and targeted at encouraging occupiers that would otherwise remain located outside of the UK. The proposed floorspace and phasing at the IAMP is also in the context of much larger potential demand (as evidenced in PwC work) – thus acting to reduce the potential for displacement effects.

Diversification into new luxury and electric vehicle production is central part of Nissan's plans for increasing its production and addition of 25,000 sqm of floorspace. This is also relevant in considering potential displacement.

It follows that a key question is to what extent these new incoming firms choose to locate at the IAMP rather than other locations in the NELEP area. Whilst this does not constitute displacement of existing activity, it is prudent to consider the potential displacement of future planned activity.

In addressing this question, the extent to which other existing or planned facilities in other locations in the NELEP area offer a comparable product to the IAMP is important. Evidence from the analysis of other major employment locations across the NELEP area indicates that there is a shortage of suitable premises to offer potential incoming firms. In particular, in Sunderland and South Tyneside the supply of premises is fragmented and lacks larger sites that would be required by major inward investors looking to set up substantial manufacturing operations in the supply-chain servicing Nissan's activity. Further afield, whilst there are some more comparable sites in other local authorities these do not benefit from the close proximity to Nissan that many incoming supply chain firms would seek.

It is also evident that the sectoral emphasis of other employment locations across the NELEP area is largely distinct from the automotive focus of the IAMP. Many of these locations have identified a focus in other areas such as renewables. Nonetheless there is a broader advanced manufacturing offer that is shared by many of the existing and planned sites and the IAMP. Accordingly, in assessing potential displacement effects associated with the IAMP it is important to distinguish between the occupiers in the automotive sector and occupiers in the broader advanced manufacturing sector.

The current projected floorspace schedule for the IAMP provides a breakdown of floorspace by use class but does not specify a split between automotive, advanced manufacturing and distribution occupiers. Around 74% of floorspace demand identified in PwC's demand analysis is attributed to the automotive sector

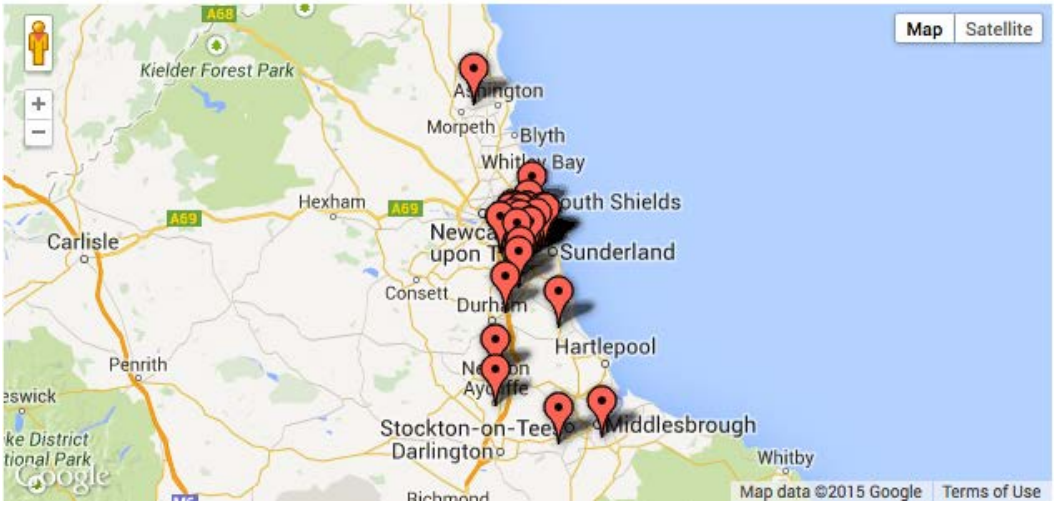
however. The assessment of displacement is therefore made on the basis of a commensurate proportion of floorspace at the IAMP being allocated to the automotive sector with a much smaller quantum of advanced manufacturing and distribution space.

The PwC analysis indicates that the majority of occupiers from the automotive sector are likely to represent new inward investments from firms that do not currently have representation in the area (or even UK). Anecdotal evidence from inward investment enquiries also supports this analysis. Nonetheless, there remains the potential for some demand for space from existing automotive suppliers who currently have premises elsewhere in the NELEP area. The IAMP will represent an attractive offer to these firms, benefitting from close proximity to Nissan and excellent transport connections (including through proposed transport infrastructure improvements that are due to take place). Accordingly, some of these firms could choose to relocate to space at the IAMP.

Data on the spatial distribution of the existing Nissan supply-chain is valuable in understanding interactions with other employment locations in the NELEP area and the potential for relocations as a result of new co-location space being available at the IAMP. An analysis of information based on reports on the automotive sector published by 'MAKE it Sunderland' shows that there is significant activity across the North East region. The following figures illustrate the spatial distribution of this activity.

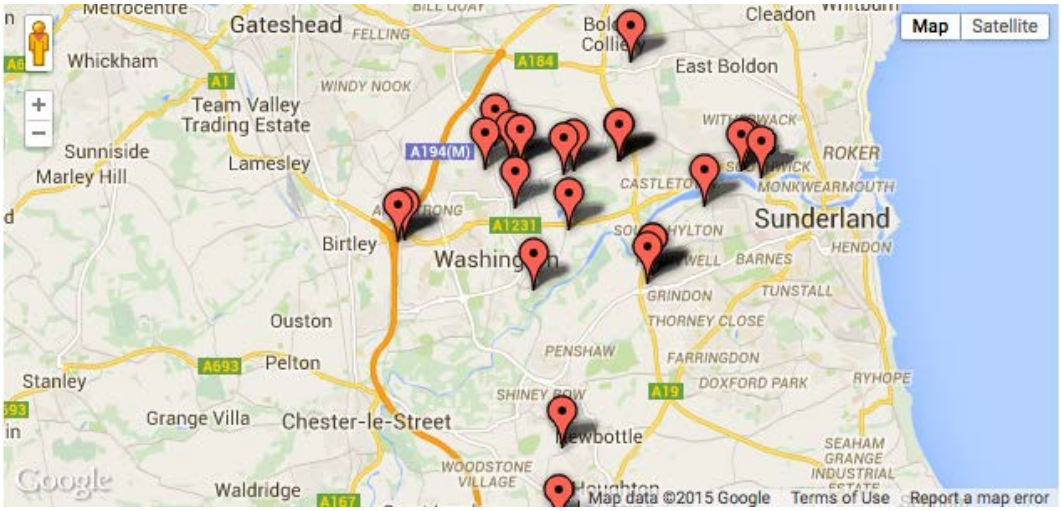
At the regional level, supply-chain firms are located as far as Ashington to the north and Middlesbrough and Eaglescliffe to the south. More locally in Sunderland and South Tyneside, activity is clustered around the Nissan facility and in surrounding areas including Washington, Sunderland city and Boldon.

Figure 3.3: Existing Nissan Supply-Chain – North East



Source: Arup using 'MAKE it in Sunderland' data.

Figure 3.4: Existing Nissan Supply-Chain – Sunderland and South Tyneside



Source: Arup using 'MAKE it in Sunderland' data.

Locations that could be particularly vulnerable to automotive supply-chain company movements to IAMP include the Washington area and Pennywell. A number of firms with strong relationships to Nissan are currently located in these areas and some of the space they are occupying is dated or near the end of its life.

Overall, the scale of displacement in the automotive sector is likely to be limited however since the majority of other major existing and planned employment locations do not have an automotive focus.

There is greater potential for displacement in the advanced manufacturing and distribution sectors since these are a key target market for other key employment locations. Proximity to Nissan will be less of a factor for these firms, instead it will be the floorspace offer, connectivity and access to input/output markets. The greatest pull is likely to be from relatively local locations in Sunderland and South Tyneside, particularly dated space such as at Washington.

It is important to take account of a range of possibilities in relation to displacement effects.

Benchmark evidence from BIS research indicates that the average displacement rate for regeneration through physical infrastructure projects is 38.7%. For advanced manufacturing and distribution space, there is little evidence to suggest a departure from this benchmark. For automotive space, the primary proposed offer at the IAMP, the evidence suggests that a lower level of displacement could be expected (and potentially negligible on the basis of the expected profile of occupiers identified in the PwC demand analysis).

Applying the average displacement rate from BIS research (38.7%) to the advanced manufacturing component of the IAMP and a 5% level to the automotive component implies an overall displacement rate of around 15%. This could be considered to represent the central case.

A further sensitivity analysis of the results has also been undertaken. Critically, the estimated level of displacement is based upon the demand case for automotive space established by PwC. Further, that the occupier profile of the IAMP reflects

this estimated demand profile i.e. with around 74% of space being occupied by firms from the automotive sector.

A change in the fortunes of the UK automotive sector or the occupier profile targeted by the IAMP management team would be significant. The focus of the IAMP on meeting needs primarily within the automotive sector is important in reducing displacement from other existing and planned developments.

Given the cyclical nature of the automotive industry and uncertainties relating to the outcome of the general election, UK EU membership and currency strength it is prudent to consider the potential for higher displacement. This could arise due to a weaker outlook for the UK automotive sector and therefore need for the IAMP to look to other sectors (such as advanced manufacturing more broadly) to achieve occupancy. A move toward a more general target market would mean that there is greater potential for competition with other existing and planned employment sites in the NELEP area (and consequently displacement).

Reflecting this, a higher level of displacement was tested. This considers a scenario in which automotive may account for a smaller than anticipated proportion of total floorspace at the IAMP. On the basis of a 50:50 split between automotive and advanced manufacturing, displacement would be around 27%. A higher level of displacement at 30% was therefore tested. This can be considered to represent the 'worst case' scenario.

The net results reported in the net impacts section therefore model the impacts applying a range of displacement; at 15% and 30%.

Multiplier effects

Economic multiplier effects refer to the further economic activity associated with additional local income, local supplier purchases and development effects.

In the supply-chain, the components industries that supply parts for the production of the cars will need to increase output through creating new jobs, logistics companies who transport these components from the manufacturer to the car plant will carry greater amounts of cargo which will require more trips and therefore additional drivers and warehousing staff. The automotive supply-chain comprises of several tiers of firms servicing vehicle and engine makers. The following figure provides an overview of the core tiers of firms involved.

Figure 3.5: Supply chain structure

Source: Arup

Beyond the supply chain, greater wealth amongst the local population from attracting new workers to the area or from employing previously unemployed people will also have a benefit to the local leisure and service sector. With a greater amount of disposable income spent in bars, restaurants and shops comes the need for more workers to serve these new customers (through creation of 'consumer-led' jobs).

The multiplier effects associated with the IAMP may generate the following benefits to the wider area:

- **Attraction of greater inward investment** - across all tiers of the automotive supply chain with associated benefits to local employment and income;
- **Increased market opportunities for SMEs** - including from the potential for Nissan and other UK based vehicle production centres to increase their UK sourcing of components;
- **Increased leverage of innovation potential** – the development of low-carbon vehicles as part of Nissan's future investment offers the opportunity for the area to capitalise and build upon this knowledge. The IAMP will result in a significant scaling up of business activity and the potential for universities, spin-outs and SMEs to undertake R&D to capture the related commercial opportunities arising;
- **Support of greater demand for city centre retail and services** ('consumer-led' jobs) – supporting the increased demand that will assist development of a new Central Business District delivering an estimated 3,700 new city centre jobs by 2031;
- **Provision of employment opportunities for workers with lower skills through 'consumer-led' job creation** – meaning that the employment opportunities associated with the project will extend beyond those in higher

skilled occupations on the IAMP site to opportunities with lower skills entry off-site, for example in city centre retail and office occupations. This will assist in addressing the needs of the current unemployed in the area; and

- **Support of growth of the Port of Tyne** – through the contribution of activity to increased exports.

Empirical evidence on multipliers through input-output analysis shows that the automotive sector generates relatively high economic multiplier effects compared with other sectors. Analysis by BIS has also highlighted the potential for substantial benefits to be generated through further re-shoring of the UK automotive supply-chain. These estimates typically relate to the national impact.

The analysis here is concerned with the impact on the NELEP area. In this respect, current data for the local area shows that Nissan employs around 7,000 people at its plant. A further 7,000 jobs are also supported within a cluster of 25 tier one suppliers and further jobs in a large pool of SMEs in lower tiers. This would indicate a multiplier effect of at least 2. This relates to indirect effects (through the supply-chain) at the local level and does not include induced effects (through increased spending of incomes). On this basis and making an allowance for allowance for induced effects, a multiplier of 2.66 is applied.

Estimated net impacts

Estimates of the net additional impact of the IAMP have been made using the PwC estimates of gross impacts as a starting point and applying an assessment approach in line with best practice principles. This approach utilises the existing evidence base (including PwC Strategic Business case), analysis of major employment locations, results of consultation activity and the findings of comparative research.

As highlighted in previous sections, it is recognised that the central expectation of future demand is above the quantum of proposed space at the IAMP (raising gross impacts from 5,228 to around 9,000 jobs). If this demand comes to fruition then there could therefore be additional jobs which will need to be accommodated.

The results are summarised in the following table.

Table 3.5: Summary of net employment impacts – NELEP area

	Central case		Worse case	
	Jobs	**Factor**	**Jobs**	**Factor**
Gross benefits	**5,228**		**5,228**	
Leakage	261	5%	261	5%
after leakage	***4,967***		***4,967***	
Displacement	745	15%	1,490	30%
after displacement	***4,222***		***3,477***	
Multiplier effects	7,008	2.66	5,771	2.66
Net benefits	**11,229**		**9,248**	

Source: Arup analysis using PwC gross employment estimates.

5 Conclusions and Recommendations

An analysis of the net additional employment impacts of the IAMP has been undertaken. The results indicate that the project will generate 11,229 net additional jobs in the NELEP area under the central case.

The focus of the analysis has been exploring the potential scale and nature of displacement effects that could be generated by the project. Locations that could be particularly vulnerable to automotive supply-chain company movements to IAMP include the Washington area and Pennywell. A number of firms with strong relationships to Nissan are currently located in these areas and some of the space they are occupying is dated or near the end of its life. Overall, the scale of displacement in the automotive sector is likely to be limited however since the majority of other major existing and planned employment locations do not have an automotive focus. The geographical footprint of IAMP overall is expected to be smaller in extent than for Nissan's activity.

This finding is critically dependent on the demand case for automotive space established by PwC and that the occupier profile of the IAMP reflects this estimated demand profile i.e. with around 74% of space being occupied by firms from the automotive sector.

The following factors are identified as important in determining the level of displacement:

- The realisation of the Strategic Business Case work findings which indicate that the majority of site occupiers are likely to be inward investors or indigenous companies that might locate, or remain located, outside of the UK in absence of the IAMP;
- That, as identified in the demand study, the IAMP is complementary to the existing UK automotive offer and given the profile of Nissan's global supply chain base will attract significant inward investor interest;
- The generation of additional demand for supply-chain activity in the area and potentially new incoming firms not currently represented in the area as a consequence of Nissan diversifying into new electric vehicle production; and
- The balance in occupiers between the automotive sector and broader advanced manufacturing and distribution sectors.

It is important to distinguish between the occupiers in the automotive sector and occupiers in the broader advanced manufacturing sector. Whilst the evidence suggests that displacement of automotive related activity is likely to be limited, there is greater potential for displacement of broader advanced manufacturing firms. Other key existing and planned employment locations are also seeking to attract firms within this sector.

It is emphasised however that there may be positive aspects to the relocation of firms. Potential in-movers may currently be in sub-optimal premises or locations that would benefit from moving to the IAMP. Relocation is often accompanied by re-investment in plant and machinery and so a degree of modernisation is likely to occur with benefit knock-on effects for productivity in the longer-term.

The potential for displacement needs to be considered in the context of the potential for offset by the generation of demand for sites and space in Sunderland, South Tyneside and neighbouring areas as a result of multiplier effects.

The IAMP project will generate significant multiplier effects, both through the supply-chain (indirect effects) and spending of incomes (induced effects). Together these effects may enable the IAMP to generate the following benefits to the wider area:

- Attraction of greater inward investment;
- Increased market opportunities for SMEs;
- Increased leverage of innovation potential;
- Support of greater demand for city centre retail and services;
- Additional employment opportunities for workers with lower skills; and
- Support of growth of the Port of Tyne.

The following recommendations are made with respect to maximising net additional impact:

- Consider how the IAMP could best play a central role in increasing automotive and advanced manufacturing across the local area and wider NELEP area. A potential approach would be for the IAMP to provide a primarily automotive offer and with an emphasis on larger plot sizes with suitable expansion zones to cater for firms' future scale up requirements. Other sites could then play a complementary role in providing for the broader advanced manufacturing sector and the growing needs of SMEs;
- Explore how the potential displacement from local locations (e.g. Washington) can be used as an opportunity for replacement of aging property stock that can in future years capitalise on the increased demand for space brought about through multiplier effects. The IAMP will be delivered in phases and consideration should be given to how these may fit with the expected lifetime of the existing property stock and the time when the opportunities for other locations arising from the multiplier effects of the IAMP are likely to be realised;
- Explore the potential phasing of the project in further detail, in particular to ensure that supply is brought forward incrementally taking into consideration the timing of other planned developments. This is especially the case for smaller plots and plots aimed at the broader advanced manufacturing and distribution centres. Currently, the majority of space is planned to come forward in 2020/21 – 2023/24; this should be reviewed;
- Incentivise larger automotive firms to locate at the IAMP in Phase 1. This will contribute toward forging the IAMP's identity as a focus for automotive and establish its place as a central hub that can work together with other employments sites to provide an integrated offer. In doing so it will reduce the potential for displacement and increase the potential for indirect benefits to be generate off-site through subsequent co-locations of lower tier supply-chain firms;
- Maximise the potential for induced effects to support the redevelopment of Sunderland city centre, for example by examining the type of retail and services offer that might be demanded by the expected demographic if new incoming workers who make the area their residence; and

- Develop a plan that enables the IAMP to adapt should demand from the UK automotive sector fall substantially short of forecasts. In particular, to ensure that any adjustment to cater for the broader advanced manufacturing sector is as differentiated as possible from other provision. Ultimately, the underperformance of the UK automotive sector is a key risk to the IAMP project.