Please note, a number of emails will follow in relation to the LIR – we will confirm the final e-mail.

Pnawn Da/ *Good afternoon*,

Gweler ynghlwm cynrychiolaeth CSYM mewn perthynas â'r uchod / *Please see IACC's representation in respect of the above.*
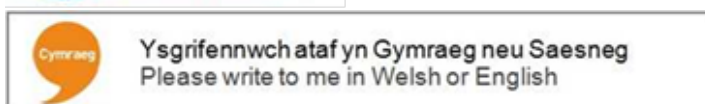
Bydd fersiwn Gymraeg yn cael ei ddarparu cyn gynted a phosib / *A Welsh version of the submission will be provided in due course.*

Cofion/ *Regards*,
Manon

Swyddfa Rhaglen Ynys Ynni /
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Education and Skills Local Impact Report – Appendix

1 Employment calculations

1.1 Results of basic model of annual average recruitment per year of workers at each NVQ level of skill

1.1.1.1   This section set out details of the analysis and modelling referred to in section 4.1.2.2 of the main report.

a) HNP's method for calculating the 1,260 figure assumes a maximum level of employment of workers from the wider DCCZ area of 2,000 workers, or 22% of jobs at 'peak'. The 1,260 figure represents 63% of the 2,000 workers from the DCCZ, or just 14% of the overall workforce at 'peak'. IAAC believe this 63% apportionment to Anglesey is flawed and unrealistic.

The Socio Economic Technical Appendix C1-2 Application Ref 6.3.9, Table 2-3 shows local participation figures at 'peak' for Hinckley Point of 34% and Sizewell B of 43%.

Overall local* labour	% of total workforce	
	Horizon proposal	Hinckley Point
Site services, security and clerical staff	76%	90%
Supervisory/managerial	12%	7%
Civil engineering ('civils')	22%	23%
Mechanical and electrical operatives	8%	14%
Operatives	42%	50%

*the term 'local' refers to the DCCZ

Applying the apportionment of local labour used by HNP in the Community Impact Report, and assuming the same distribution of occupations as for the DCCZ, we have calculated HNP's estimate of workers from Anglesey at peak as shown below.

Horizon's proposal	Overall 'peak' demand	Of whom from DCCZ	Of whom from Anglesey	% from Anglesey
Site services, security and clerical staff	902	689	434	48%
Supervisory/managerial	1,998	237	149	7%
Civil engineering ('civils')	3,069	675	425	14%
Mechanical and electrical operatives	2,580	208	131	5%
Operatives	451	191	120	27%
Totals	9,000	2,000	1,260	14%

It appears that HNP has apportioned its estimate of 2,000 roles from residents within the DCCZ to Anglesey residents using a fixed percentage of 63% and that this is applied irrespective of the nature of the role. This is not credible. The ratios are likely to be strongly affected by travel distance as well as local labour

availability (see evidence base on travel distances). For example jobs in the 'site services, security and clerical staff' category are likely to be relatively stable jobs and it is not credible that 37% of these workers will be commuting to Wylfa Newydd from the mainland if more local labour is available. Similarly, for supervisory and managerial jobs which are likely to be well paid and relatively long term, the ratio can be expected to be higher than 63% if the skills are available.

Applying a more realistic estimate of the ratio of these two categories results in a figure of 2,074 Anglesey workers at 'peak' – see table below, and an increase from 14% to 23% of the total workforce.

IACC proposal	Overall 'peak' demand	Of whom from DCCZ	Of whom from Anglesey	% from Anglesey
Site services, security and clerical staff	902	689	857	90%
Supervisory/managerial	1,998	237	200	15%
Civil engineering ('civils')	3,069	675	425	14%
Mechanical and electrical operatives	2,580	208	131	5%
Operatives	451	191	428	90%
Totals	9,000	2,000	2,074	23%

A further reason to believe the 63% apportionment is unrealistic is HNP's own assessment of the commuting patterns of its assumption of 3,000 non-home-based workers living in the community at 'peak'. Document C1.20 Technical Appendix Ref 6.3.9 Table 3-6 concludes that 87% of these workers living in the DCCZ will choose to live on Anglesey.

b) IACC has used HNP data on the skills levels needed during Wylfa Newydd and estimated the supply of skills at these levels from within the DCCZ population (including HNP's plan that just 2,000 of the total of 9,000 workers at 'peak' are DCCZ residents). This has been estimated in terms of the total jobs during the Wylfa Newydd project up to the point of 'peak' (a period of 7 years) and the average annual vacancies during this period. This analysis considers Wylfa Newydd jobs in the context of the wider jobs market with churn and retirements. The following table shows these estimates, alongside projections of the estimated total supply from amongst Anglesey residents.

NVQ level	Total need during Wylfa Newydd (over 7 years)	Average annual need during Wylfa Newydd	Total supply from Anglesey residents
4+ (STEM)	4,200	600	33
4+ (other)	14,700	2,100	879
3 (Construction/engineering)	2,100	300	12
3 (other)	19,110	2,730	802
2 (Construction/engineering)	1,470	210	20
2 (other)	12,320	1,760	700
1	2,600	371	50
No qualification	2,000	286	232
Other	2,000	286	-

Totals	53,900	7,700	2,729

Drawing on IACC's evidence base, a number of assumptions have been applied to estimate the supply of skills from Anglesey residents[i], set out below:

- Some 50 young people per year leave education at 16yrs – these are assumed to qualified to NVQ level 1 (for example they may achieve several GCSEs at D-E but not reach the five GCSE grades of A* to C required for level 2)

- Some 229 young people per year go on to further education at age 16 before entering the jobs market. This may include A levels, apprenticeships, HNCs, City and Guilds or a range of other post-16 qualifications. Of these, 5% qualify at NVQ level 3 in construction skills, 65% qualify at NVQ level 3 in other skills, 9% qualify at NVQ level 2 in construction skills and 21% qualify at NVQ level 2 in other skills.

- Some 265 young people per year go on to further and then higher education. Of these, UCAS statistics show some 34% will typically choose STEM options (excluding medicine)[ii]. Of these, while only a small number will study at Bangor University, some 50% may return to Anglesey on completion of their studies[iii]. This suggests that approximately 33 young people may return to Anglesey with a STEM degree at NVQ Level 4 or above, and 82 young people may return to Anglesey with a non-STEM degree at NVQ Level 4 or above.

- Approximately 23% of those who are economically inactive want a job, representing 2,336 potential workers, and the unemployment rate of 5.6% suggests 1,700 potential workers, based on current population levels and recent surveys. Data shows that the skills levels of these potential workers ranges from no qualifications to NVQ level 4+ [iv] equating to approximately 798 potential workers at NVQ levels 4 and above, 653 at NVQ level 3, 653 at NVQ level 2 and 232 with no qualifications.

Using profile data provided by HNP for the year-on-year rise and fall in numbers of jobs created by Wylfa Newydd during the construction phase (for example Jobs and Skills Strategy Ref 8.3 Figure 2-5) a basic model of annual average recruitment per year of workers at each NVQ level of skill has been created. This provides an approximate recruitment profile for Wylfa Newydd for each year as the construction phase progresses. Assumptions regarding the churn rate for each level of job have been applied.

The model referred to above has been used to examine the potential employment in connection with Wylfa Newydd of young people entering the workforce and the potential employment of unemployed and economically inactive (both as detailed above). The results are shown in two tables below in which Column A shows the number of applicants from Anglesey residents and column B shows the jobs secured.

Table ONE shows the potential employment if on completing their education young Anglesey residents seek and can secure jobs for which they are qualified.

Table TWO shows the potential employment if on completing their education young Anglesey residents and those who are unemployed and economically inactive seek and can secure jobs for which they are qualified.

In both cases the analysis shows that local employment level exceeding HNP's estimate should be achievable if:

- residents are motivated to seek gain the necessary skills and experience for these jobs,

- residents gain the specific skills needed (not just the overall level), and

- HNP's recruitment and procurement policies are configured to maximise employment for Anglesey residents.

TABLE ONE

	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4+ (STEM)	33	10	33	10	33	33	33	33	33	33	33	33	33	33
4+ (other)	82	35	82	35	82	82	82	82	82	82	82	82	82	82
3 (Construction/ engineering)	12	5	12	5	12	12	12	12	12	12	12	12	12	12
3 (other)	149	46	149	46	149	149	149	149	149	149	149	149	149	149
2 (Construction/ engineering)	20	4	20	4	20	20	20	20	20	20	20	20	20	20
2 (other)	47	29	47	29	47	47	47	47	47	47	47	47	47	47
1	50	6	50	6	50	50	50	50	50	50	50	50	50	50
No qualification	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Other	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Totals		135		269		662		1055		1448		1840		2233

TABLE TWO

	Year 1		Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B
4+ (STEM)	33	10	33	10	33	33	33	33	33	33	33	33	33	33
4+ (other)	879	35	879	35	879	630	879	700	879	879	879	879	879	879
3 (Construction/ engineering)	12	5	12	5	12	12	12	12	12	12	12	12	12	12
3 (other)	802	46	802	46	802	802	802	802	802	802	802	802	802	802
2 (Construction/ engineering)	20	4	20	4	20	20	20	20	20	20	20	20	20	20
2 (other)	700	29	700	29	700	528	700	587	700	700	700	700	700	700
1	50	6	50	6	50	50	50	50	50	50	50	50	50	50
No qualification	232	5	232	5	232	86	232	95	232	232	232	232	232	232
Other	-	0	-	0	-	0	-	0	-	0	-	0	-	0
Totals		139		279		2336		2336		2336		2336		2336

2 Detail of proposed mitigation measures – preparing the Island's young people

2.1.1.1   The section below shows the possible form of mitigations in relation to preparing the Island's young people. IACC will require dialogue with HNP regarding these proposals and the specific level of support that is appropriate in relation to: the negative effects of displacement and disruption to schools. Note that a number of mitigation measures are relevant to more than one impact or phase of the project.

2.2 Employment practices

Introduction

2.2.1.1   Employment strategies, policies and requirements including recruitment and procurement of labour by HNP and its supply chain must both encourage and enable maximum uptake of Anglesey residents with appropriate skills throughout the project.

Measures to maximise opportunities available to Anglesey residents

2.2.1.2   The following measures are proposed:

a) Prioritise local recruitment and support local workers to secure long term jobs throughout the project as far as possible, with consideration of the needs of other employers not in the supply chain where displacement may occur. For example, this may include advertising jobs of over one year in duration in Anglesey first and where suitably qualified candidates are available from Anglesey they should be appointed without further advertising. This should be a requirement for all contractors in the supply chain. If contracts end early, re-training should be provided if the worker wishes to develop new skills.

b) Configure all jobs wherever possible for maximum flexibility, for example part-time, job share and flexible hours.

c) Require contractors to provide training and apprenticeship opportunities.

d) Require contractors to train or employ a proportion of those who are long-term unemployed.

e) When workforce reductions are taking place in any given sector, HNP and its supply chain should be required to retain Anglesey residents rather than transient labour, helping them to retrain if necessary. For example opportunities will arise to move from jobs in the construction phase to those in the operational phase. Identification of suitable local residents should be made in good time and assistance with funding for retraining and support should be a priority.

f) Clear information concerning the strategy must be provided to the general public, potential workers and employers from the outset as this will encourage more residents to seek relevant education, training and jobs and help build greater confidence and sense of shared goals between HNP and the community. This in turn will lead to more individuals and businesses taking steps to become trained or retrained and ready for those jobs.

2.3 Under 16s education

Introduction

2.3.1.1   The proposed measures are selected to raise attainment in schools on Anglesey and offer an innovative and world class education to all learners, drawing on expert assessment of best practice and the latest research. HNP's support should be provided throughout the project to ensure a continuing flow of local young people

with the best possible qualifications suitable for a wide range of jobs and as a basis for further education towards higher level jobs including STEM roles.

2.3.1.2   Maintaining high quality, well-equipped facilities in Anglesey's primary and secondary schools is necessary to provide the best STEM education. Local authority budgets are sufficient for facilities to be maintained at an adequate and safe level and to carry out some improvements and modernisation, however funding contribution from HNP would enable all STEM related facilities to be brought up to a world-class standard at the outset, and to be maintained at that level throughout the project.

Support for teaching resources and programming

2.3.1.3   Formal education resources and programming to support teaching, broaden experiences and provide information that individual schools are not generally able to generate themselves. These resources must be curriculum linked and formatted for the school environment and timetable, requiring specialist design and development. A comprehensive suite of fully bilingual support materials would cover all aspects of the curriculum, all age ranges and main progression steps, and use the most effective media formats to deliver them. Teachers and other stakeholders should be closely involved in their design.

2.3.1.4   Current education reforms will lead to the introduction of the new school STEM curriculum (4-16yrs) in 2022 and will create a strong need for new resources and materials over the next five years, with the potential for the best to be used across Wales (which may further help meet skills gaps for HNP) as well as Anglesey. These materials could contribute to the guiding principles in each of the six new Areas of Learning and Experience (AoLE) subject areas, which link to the core 'What Matters' curriculum statements and the four formal overarching 'Purposes' of education. These should particularly focus on themes already identified by the reform process as areas where guidance materials would be desirable including:

- exemplification,
- Welsh dimension,
- enrichment and experiences, and
- careers and the world of work.

2.3.1.5   These exemplary resources could focus on content related to HNP's business and to STEM skills requirements (potentially drawing on successful outcomes for the Aerospace Sector in Flintshire). They should also be designed to help imbed skills needed by HNP into the curriculum and strengthen interest and employment potential for young people in the energy industry. As well as being made available on HNP's own Futures website, these should be made available through:

- the National Network for Excellence in Science and Technology (NNEST) website,
- all four regional education consortia,
- IACC and other local authorities,
- other networks in Wales, and
- networks beyond Wales and internationally (could become exemplary and relevant to HNP's work in other countries)

2.3.1.6   The possibility that HNP could also provide resources to make possible the development of a Welsh Bacc STEM Unit focused on Wylfa Newydd requires exploration with stakeholders.

2.3.1.7   The need for textbooks and other forms of text-based content should also be considered through consultation with schools, IACC and other stakeholders.

2.3.1.8   The section below shows the possible form of mitigations. IACC will require dialogue with HNP regarding these proposals and the specific level of support that is appropriate in relation to: the negative effects of displacement and disruption to

schools. Note that a number of mitigation measures are relevant to more than one impact or phase of the project.

Creative education projects with community involvement – primary school level

2.3.1.9   Creative learning in all schools on the island should be supported with a scheme based on the principles of the successful Lead Creative Schools programme[v]. In addition to providing a range of direct educational benefits to learners, this will also reinforce and compliment the principles of the new curriculum, for example developing teachers' skills in creative learning pedagogy and improving schools' culture as Learning Organisations.

2.3.1.10   The scheme is also effective at a motivational level, both through providing learners with greater 'pupil voice' and by involving them in 'making' activities, both of which can increase levels of motivation and attainment which can be particularly effective for learners who lack confidence, have special needs or experience other barriers.

2.3.1.11   Parental and community attitudes to education have a strong influence on school pupils' motivation and choices and involvement by parents and the local community in creative projects should be a particularly high priority, bringing them into the school and sharing in activities. There may be opportunities to link with other projects, for example Bangor University's current pilot project "Support for Kids in Learning and Language Strategies" (SKILLS), an online programme for parents and school support staff, or measures to encourage parents to read to their children more.

2.3.1.12   Similarly, opportunities to use digital technology and social media can be imbedded in creative projects, and this might be linked with other initiatives such as Technocamps coding work with schools. Links with relevant advisory bodies will help ensure safe practices are taught alongside social media.

Creative education projects with community involvement – secondary school level

2.3.1.13   As above – applied to the secondary school context. Note that in secondary schools there are additional factors including the extra logistical considerations of working with their subject oriented school timetable.

Improvements to school facilities

2.3.1.14   IACC seeks secure specific mitigation measures to ensure that adverse impacts are minimised as far as possible through a suitable contribution to investment in maximising the effectiveness of school education on Anglesey, to improve the physical condition and working environment of schools and provide strong foundations for a capable and adaptable local workforce and inspiring learning environment.

2.3.1.15   Part of this mitigation should be directed towards upgrading STEM labs and associated facilities in secondary schools since this will have a more direct effect on strengthening attainment in subject areas of relevance to Wylfa Newydd. A further element should be used to create spaces or adjust existing spaces where the community can share in school life. This may include exhibition areas, events spaces, film or projection equipment, access to computers. Discussion with HNP will help to identify and agree acceptable mitigation measures.

Upgrading staff rooms and staff only areas

2.3.1.16   Evidence shows that teacher motivation improves if facilities are improved. IACC will require dialogue with HNP to agree mitigation in connection with updating and improving staffrooms and staff-only working areas to help improve morale and strengthen staff recruitment and retention.

Sports/leisure benefits for teachers

2.3.1.17 To help improve teacher recruitment and retention IACC will require dialogue with HNP to agree a suitable level of mitigation for support for access to sports and leisure facilities for staff and their families.

Incentives to teach in secondary schools

2.3.1.18 Teacher recruitment is extremely challenging and teaching posts in STEM, Welsh medium and some other categories are defined as hard to fill by Welsh Government. Significant one-off incentives are offered by Welsh Government to attract potential trainees to PGCE and undergraduate teacher training courses. Despite the incentives, recruitment targets for prospective STEM teachers to teacher training courses have been repeatedly missed each year over the past five years, often by 40-50%. Shortages of lab technicians are also frequently reported. As a rural area, NW Wales experiences more recruitment difficulties than other parts of Wales – for example the Graduate Teaching Programme is able to fill fewer places each year than in South Wales.

2.3.1.19 In the context described above, IACC seeks mitigation to ensure that adverse impacts are minimised as far as possible to strengthen the supply of teachers and support staff in shortage areas such as STEM subjects and Welsh medium teaching on Anglesey.

Strengthen primary school teaching

2.3.1.20 Measures to strengthen teaching in primary schools and support higher attainment by learners are also needed. The proposed method is to increase the staff time available for teaching each pupil through support by HNP to increase the pupil:teacher ratio and the level of support should be related to both recruitment and on-going employment of additional teachers.

a) Support could be deployed in a number of different ways and the detail may vary over time, for example reducing the bureaucratic burden of management and administration processes could also provide more contact time for learners and might be achieved by extending IACC's 'Business Manager' Pilot which aims to provide temporary additional resources to assist primary and secondary headteachers.

b) Since attainment in smaller schools is typically lower, consideration should be given to a greater share of support going to these schools.

Contribution to initial teacher training

2.3.1.21 To improve the supply of new teachers IACC will require dialogue with HNP to agree appropriate mitigation. The form of this support also requires discussion with stakeholders. A possible mechanism though the Graduate Training Programme (GTP) is set out below, with other potential alternatives also described.

a) The existing GTP (run by GwE officers) currently has places for 30 student teachers per year for north Wales but has very few applicants for science teacher training. The scheme relies on a close 'fit' at a local level between a school and the trainee – for example when the student wants to live in that specific area and the school can be confident of offering them a job at the end. This could meet the needs of Anglesey in some cases, however a drawback of the scheme in this form is that students do not gain the benefit of Welsh Government one-off financial training incentives. Alternative one-off financial incentives for candidates supported by HNP may be possible leading to more training places on Anglesey.

b) Further potential alternatives are set out below.

- Expansion of Teach First (Cymru) to north Wales. Teach First originated in England, was replicated and later discontinued in Wales, principally because new teachers were not staying in the areas in which they learnt to teach. More recently, the Central South Consortium has begun operating a form of Teach First in Wales and may provide a more suitable model[vi].

- Link with two new routes to qualified teacher status recently announced by Welsh Government, expected to come on stream soon: the part time PGCE (including an online version) and new Employment Based Route (EBR). The EBR route in particular will be "targeted to address teacher shortages region by region". Both routes could appeal to new groups of potential teachers, for example economically inactive people, those with part time jobs not wanting to study full time, or self-employed people who have spare capacity. The online component could also make it easier for people who otherwise find it difficult to travel to teacher training colleges.

- Work closely with the CaBan partnership the new provider of approved initial teacher training in NW wales from September 2019. CaBan is a partnership of Bangor University, University of Chester, North Wales Regional School Effectiveness & Improvement Service (GwE) and the Collaborative Institute for Education Research, Evidence and Impact, Bangor University. The CaBan also includes partner schools and it would be very helpful to enable Anglesey schools to be partners if possible. Similarly, three Anglesey schools are currently Professional Learning Pioneers involved in developing the new curriculum, and their staff may be able to contribute important expertise with appropriate funding. Measures could include addressing barriers to applications, improving facilities or assisting in mentoring for example: support for CaBan to attract trainees and provide good quality training for teachers in shortage areas (STEM and Welsh medium); increasing the number of Anglesey schools that are part of the consortium; support for those Anglesey schools that are involved to help sustain good quality experiences for trainees without disrupting normal school operations, and incentives for potential trainees to come to the area to train.

Enhancing the skills of the existing teaching workforce

2.3.1.22   Improved training and support for existing teachers will improve retention and help increase the skills-base of the existing workforce, both important factors that can assist in strengthening teaching, particularly in shortage areas such as STEM and Welsh medium teaching. IACC will require dialogue with HNP to agree appropriate mitigation. Details of the measures also requires discussion with a number of stakeholders in order to determine the most effective approach.

a) The GwE education consortium provides a range of professional learning courses (formerly known as CPD or in-service training) for practising teachers. A number of other agencies also provide courses (for example Techniquest has provided courses on behalf of the National STEM Centre in York for a number of years).

b) The funding could include support for increasing the STEM subject knowledge of teachers who are teaching science in subjects in which they have not been originally trained: an example of a successful programme of this type for physics teachers is the Institute of Physics (IoP)'s Stimulating Physics Network[vii] service.

c) Specific teacher development and learning programmes to be able to teach pupils who are learning the language of instruction would be desirable, for example in locations where dependents of migrant workers are requiring support to integrate into Welsh medium schooling.

d) The possibility of involving existing expertise to upskill teachers with this funding support should also be explored with stakeholders, for example: the Anglesey

schools designated as Professional Learning Pioneers which currently have a special role in developing and testing new forms of professional learning; a Digital Literacy Framework (DCF) Pioneer school with expertise in teaching digital skills, and several Anglesey schools that are 'Lead Creative Schools' and have gained experience in key areas of pedagogy associated with Wales' current education reforms.

Online training and mentoring tools

2.3.1.23   The use of online methods can help practicing teachers to improve their practice and provide mentoring to newly qualified teachers to improve their skills more quickly and help them feel more supported.

2.3.1.24   Support from HNP could provide equipment and licenses for proprietary online teacher training tools that can be used as a highly cost effective source of feedback and mentoring for practising teachers. These typically use low cost video equipment and licensed access to online platforms that allow two-way dialogue between trainers and other teachers. They also have the potential to support a learning network between schools to strengthen the skills of existing teachers.

Support for SEREN-type services for MAT pupils

2.3.1.25   In the light of the high skilled roles required at Wylfa Newydd, it is important to encourage the more able and talented youngsters, referred to as MAT learners. The SEREN network is a Welsh Government scheme already in operation, and it is effective in supporting the brightest sixth formers on Anglesey and inspiring them to the highest levels of achievement.

2.3.1.26   It is proposed that mitigation also includes a contribution from HNP to extending this approach to younger learners, possibly with funding for a coordinator in collaboration with Welsh Government. Measures identified by Welsh Government include:

- subject-specific workshops,

- networking with like-minded students, university staff, tutors and current undergraduates,

- providing information on universities, courses, summer schools, workshops,

- support and advice with UCAS applications, university interviews and assessments, mock interviews and feedback sessions, and

- advice for teachers.

2.4 Post-16 education

Funding to fill gaps in local training and apprenticeship provision (FE and HE)

2.4.1.1   Specific and robust support is required from HNP to ensure that assessible, high quality training and apprenticeships pathways suitable for occupations associated with Wylfa Newydd is available within a maximum of one hour's drive of all parts of Anglesey.

2.4.1.2   IACC will require dialogue with HNP regarding appropriate mitigation which could include a financial contribution and expertise where appropriate to fill gaps in the provision of post-16 training and apprenticeships in construction other relevant sectors in accessible locations, chiefly at NVQ Levels 3,4 and 5, and to provide opportunities for work experience where necessary.

2.4.1.3   This includes post 16 education and training courses and programmes that help those with low qualification levels to gain basic training, that relate to lower and medium skill level jobs and are relevant to both construction and operational phases and for those seeking retraining. Training opportunities should be suitable

for school leavers and others including NEETS, unemployed, underemployed, self-employed, the economically inactive, those with other barriers to employment and those who may wish to retrain or wish to re-enter the labour market.

2.4.1.1   The following list of courses provide a guide to where HNP's contributions to strengthening of training provision may be needed in relation to construction jobs. The first table shows courses forming part of the pathways to the largest groups of jobs during the construction phase. It is important that sufficient places for these are available in good time and readily accessible to Anglesey residents.

a) High priority 'pathway' construction-related courses during the construction phases:

BTEC Level 3 in Construction and the Built Environment
Foundation Award in Electrical Installation
Foundation Award in Performing Engineering Operations
NVQ Level 2 in Plant Operations
NVQ Level 2 in Scaffolding
NVQ Level 3 in Accessing Operations and Rigging (Scaffolding)
NVQ Level 3 Wood Machining
CISRS Scaffolding Supervisory and Construction Management Course
Advanced Diploma in Construction and the Built Environment
Foundation Degree in Construction
Foundation Degree in Building Studies
Foundation Degree in Engineering (pathway in Electrical Engineering)
BEng (Hons) in Electrical and Electronic Engineering

b) The following NVQ Level 2 and 3 courses and apprenticeships are presently available from Grŵp Llandrillo Menai but may require additional capacity in accessible locations:

Electrical Installation Apprenticeship: NVQ Level 3
Plumbing and Heating Apprenticeships: NVQ Level 3
Bricklaying Apprenticeships   : NVQ Level 3
Joinery Apprenticeships: NVQ Level 3
Plastering Apprenticeships: NVQ Level 3
Power Sector Apprenticeships: NVQ Level 3
Painting and Decorating Apprenticeships: NVQ Level 3
AS and A levels: Chemistry, Maths, Physics, Biology Computer science, Electronics, Maths+ :NVQ Level 3
Solid Fuel Heating Installation (BPEC certificate): NVQ Level 3
Fabrication and Welding Apprenticeships : NVQ Level 3
Level 3 Award in Inspection and Testing Electrical Installations
General Maintenance Apprenticeships: NVQ Level 3
Construction: NVQ Level 2
Engineering: NVQ Level 2
BTEC Level 2 First Extended Certificate Engineering

c) The following NVQ courses at levels 4+ and apprenticeships are presently available from Grŵp Llandrillo Menai or Bangor University but may require additional capacity in accessible locations:

NVQ Level 7 Diploma in Construction Senior Management
NVQ Level 6 Diploma in Construction Site Management
Electronic Engineering BSc
Chemistry BSc
Biology BSc
Advanced Manufacturing Engineering - Higher Apprenticeship
Foundation Degree (FdSc) Computing (Networking)
Foundation Degree (FdSc) Computing (Software Development)

d) Jobs throughout the project will be available in occupations such as supervisory and managerial roles, security, ICT, HR, administration, food preparation, cleaning, hospitality, catering and driving, as well as skilled technical and professional STEM occupations not related to construction. Support from HNP is required to ensure that there is good access to training and apprenticeships relevant to these roles at relevant times and may involve financial contributions to setting up new courses where gaps exist or capacity may not be sufficient. For example:

- Adult education at NVQ Levels 1 and 2 (GCSE) and Level 3 (AS and A Levels), particularly in languages, maths and STEM subjects and Welsh Baccalaureate

- Courses such as Foundation for Work at NVQ Levels 1,2 and 3 and in relevant areas such as retail, hospitality, ICT and business skills

- Courses at NVQ Levels 4 and 5 in STEM and in fields such as management, HR and computing such as HNCs, HNDs, vocational qualifications and apprenticeships

- STEM at NVQ Level 4+ including HNDs, vocational qualifications and apprenticeships

2.4.1.2   The specific skills sectors where provision will be needed will change as the project progresses and the timing of this provision must be carefully planned. There will not be an abrupt change in skills at the end of the construction stage, but rather a series of changes as the need for each job rises, approaches its peak and falls throughout the project. The lead-times for training vary widely and will dictate the timetable: for example, some training for operational jobs will start early in the construction stage, while conversely some training for construction jobs will wind down well before the end of the construction phase.

2.4.1.3   The timing issues at the start of the project are critical to maximising employment for Anglesey residents during the construction phase. The largest groups of skills involved are: scaffolders, pipe fitters, labourers, steel fixers, electricians and carpenters. Ensuring adequate levels of training for these and other smaller categories of jobs is urgent. For example, for courses lasting two years, training provision would need to be in place to match demand by September 2019 in order that trainees to complete their course, undertake a year of work experience and be ready for employment during the main period of construction at Wylfa Newydd.

2.4.1.4   At higher education level there is a need for increasing accessibility for Anglesey residents to nuclear industry specific training and to initial teacher training. This includes strengthening the provision of suitable courses in accessible locations. Arrangements need to be in place in good time due to the long training periods involved in higher level nuclear relevant STEM jobs.

2.4.1.5   The Universities of Bangor and Aberystwyth work closely together on STEM provision and it is recommended that Aberystwyth University's physics courses and other relevant degree courses currently offered by Aberystwyth are considered for potential expansion and adaptation to more nuclear relevant modules. Its Physics BSc already includes an Energy and the Environment module, and a foundation year is offered which is suitable for mature students or those who have not done the correct A level subjects. The University also has a tradition of subject support though the medium of Welsh.

2.4.1.6   Where displacement occurs and employees move to positions that they perceive to be better paid there will be a need for training and reskilling of replacement staff and these measures include this training, noting that displacement is most likely to occur in occupations where the demand for skills is highest, requiring the same or similar training in most instances.

2.4.1.7   Although in general construction jobs may not be suitable for older people, training facilities should be accessible to this group as far as possible since they may be interested in retraining or upskilling, particularly for part time jobs.

2.4.1.8 It is also expected that there will be shortages of suitably trained and experienced teachers and trainers able to teach key pathway courses through the medium of Welsh and English which may restrict the flow of local learners through these pathways, particularly for specialist or hard to recruit subjects. Funding support is needed to rapidly address shortages and gaps, whether this is to upskill existing staff, increase the efficient deployment of staff, for example through increased mobility or to support the engagement of specialist training providers.

2.4.1.9 Mitigation from HNP should include support to make training courses available to Anglesey residents in locations that are closer to them and this may be required at various times during the construction phase. It is likely that the courses will be run by institutions such as Grŵp Llandrillo Menai, the University of Bangor or other existing local providers to relocate courses to achieve this. This may involve converting premises at the Llangefni campus, at schools or at other locations to run courses where there is demand from Anglesey residents but where provision was previously only available at sites further away.

2.4.1.10 If there are courses that are relevant to Wylfa Newydd but are not provided by Grŵp Llandrillo Menai and are not available anywhere in north Wales, a greater level of support is likely to be needed to set up new courses in a location on or close to Anglesey. Supplementary information on post-16 training is provided later in this Appendix.

2.4.1.11 In some cases it may be possible to provide the improved access to courses though online or remote mentoring methods, and an alternative to physical relocation may be investment in improved connectivity, training infrastructure, or a combination of these.

Support for training e.g. basic nuclear familiarisation training

2.4.1.12 Basic nuclear familiarisation training will be important for most workers and a system for providing this in a readily accessible form for Anglesey residents is vital. Options for the form and delivery method require discussion with HNP and other stakeholders, however it will be necessary to ensure that courses such as the following are widely available:

- Level 2 Award for Nuclear Industry Awareness

- Level 3 Diploma in Nuclear Power Plant Operations

- Level 3 Leadership and Management Practice award in construction with a specific focus on nuclear safety

2.4.1.13 HNP states that site workers at Wylfa Newydd are likely to need at least one year's site experience. There is also a need for all workers to fully understand the safety practices and other specific requirements of a nuclear site. Discussions with employers and contractors are needed to investigate what arrangements are needed to provide suitable opportunities to Anglesey residents to gain this experience as this may be a limiting factor.

Alterations to Bangor and Aber STEM courses to encourage teaching as a career

2.4.1.14 It is proposed that Bangor and Aberystwyth Universities are supported to adjust their physical sciences undergraduate courses to include modules on teaching science in which students spend time in schools including Anglesey schools. This innovative approach that has been piloted by Swansea University and University College in London and aims not only to provide pupils with a role model but also to increase the possibility of the student taking a greater interest in teaching as a career. Note the Cabinet Secretary for Education has personally encouraged Welsh HEIs to consider this seriously.

Support for training institutions to deliver Welsh medium courses (FE and HE)

2.4.1.15   Mitigation is also needed to ensure all education and training is fully available through the medium of Welsh medium for those that want it (e.g. follow good practice by Coleg Cymraeg Cenedlaethol which supports Welsh-medium development in further education). There are also several pilot projects in this area e.g. providing Welsh language training to practitioners.

2.4.1.16   Support from HNP may include contributing to the costs of translation of resources, Welsh language training, procurement of training equipment, and discussion to agree specific support for this form of mitigation is sought.

Support for post-16 learners, bursaries, travel grants etc (FE and HE)

2.4.1.17   IACC propose that HNP should contribute to support learners to help overcome barriers to all relevant post-16 training and apprenticeships, such as bursaries, scholarships, travel grants and other forms of assistance. Additional transport to and from training locations may also be required.

2.4.1.18   Incentives such as bursaries or sponsorships should also be available to students from Anglesey who leave to study undergraduate degrees outside the region in relevant subjects such as physics, maths or engineering and who may return after their studies. This should include Anglesey residents wishing to study nuclear-relevant degree courses and post-graduate courses at Bangor University, Aberystwyth University or at other universities sponsored or supported by HNP (including HNP's sponsored Physics and Technology of Nuclear Reactors course at the University of Birmingham). Such schemes could also be linked to work experience or secondments offered to recipients by HNP or its supply chain on their return after completing their studies.

Good connections between schools and FE and HE

2.4.1.19   Increasing the connection between secondary schools and post-16 training could help raise awareness of STEM and construction jobs associated with Wylfa Newydd amongst pupils and help increase the supply of applicants. This could be further strengthened by arrangements for pupils at secondary schools to visit facilities for workshops or similar awareness raising programmes.

2.4.1.20   Support for the Gwynedd and Anglesey Post-16 Education Consortium could be a suitable mechanism, particularly when its current EU funding ceases.

Support companies who decide to train existing staff themselves.

2.4.1.21   Mitigation from HNP should include support the provision of training to businesses and their employees to familiarise and prepare them for potential involvement. This could include:

- strengthening the NWEAB policy of persuading smaller employers (especially those who may be in the supply chain for Wylfa Newydd) to offer work placements or apprenticeships, and support them to make sure they are of the best quality,

- training provision to provide a basic level of nuclear understanding and initial familiarisation with nuclear site specific issues,

- training support for companies to obtain ISO9001 certification, and

- support for companies who decide to train existing staff themselves.

2.5 Careers, engagement and support services

Introduction

2.5.1.1   The aim should be that all education and training choices of the people of Anglesey are made in the full knowledge of the potential employment opportunities associated with Wylfa Newydd and equal emphasis should be placed on direct employment opportunities with HNP, indirect opportunities connected with Wylfa Newydd and its supply chain, and opportunities arising from displacement.

2.5.1.2   A strategy for high quality careers advice and engagement activities is needed that is joined-up and harmonised with existing policies and strategies, including those of Welsh Government, IACC and bodies such as NWEAB.

2.5.1.3   The design of engagement materials and techniques should follow best practice and be subject to formative development including evaluation with the target audience and adjustment where necessary prior to roll-out to ensure maximum effect. Periodic summative evaluation should take place thereafter to ensure continuing relevance and updating should be carried out when necessary.

Support for informal educational enrichment activities - primary schools

2.5.1.4   It is proposed HNP support the setting up of a STEM 'kits' service on the island, chiefly for primary schools. The kits comprise thematic sets of experiential, hands-on easy-to-use activities to motivate and stimulate learners' interest and support the curriculum. They are suitable for use by one class at a time and can be used for parents and at other events during evenings and holidays. Content should be across science and maths but could include other topics. Operated by class teachers, the use of a standardised format helps teachers gain familiarity in the use the kits after initial training and practice.

2.5.1.5   Elements of the enrichment services described in the next section for primary schools would also be suitable for secondary schools and should also be made available to them. This may be arranged through the secondary school with feeder primary schools visiting them, or through school federations. Links may be possible with existing programmes such as the NWEAB's ACT ON STEM bilingual programme for pupils, parents and children (launched April 2017 for KS2).

2.5.1.6   Enrichment activities should be planned to facilitate community links wherever possible. For example, family members should be invited into schools to take part in sessions with kits or outreach programmes

2.5.1.7   In addition to the unstaffed kits service it is proposed that the service to primary schools also includes visits by careers advisors and role models such as university students to begin to raise awareness of STEM and the world of work in an appropriate manner for the age group.

Support for informal educational enrichment activities - secondary schools

2.5.1.8   Informal education services to support STEM education and to provide broader support and enrichment for secondary schools will reinforce learning and raise aspirations. The following elements are proposed.

a) For secondary schools, short term access to more expensive or specially adapted equipment of known educational benefit which is not needed by a school all the time. It is proposed that HNP support the set up of an equipment library service secondary schools. The equipment should be configured in a portable format, and arrangements for bookings, transport and maintenance set up. Examples include: large format 3D printers, spectroscopy equipment, specialised imaging and testing equipment.

b) It is recommended that high quality outreach for secondary schools is provided to schools to address each main subject area in accordance with new curriculum under development. Content of all programming should relate to real work contexts, and cover careers and occupations (particularly in NWEAB priority and growth areas) and should convey what it's like to do those jobs and the teamworking involved. Resources should be gender-balanced (Chwarae

Teg provide a 'gender lensing' service) and should be designed to counter other stereotyped views of STEM and of other careers to improve aspirations of people on the island, especially girls and disadvantaged groups. They should also seek to correct the impression that degrees are 'superior' to apprenticeships or vocational training. There is increasing evidence of the links between wellbeing, health and learning and programming should include physical literacy considerations to help strengthen pupils' skills in resilience, mindfulness and managing their emotional health.

2.5.1.9   Detailed planning of a secondary schools' enrichment services should consider where opportunities to combine or support existing programmes may arise, noting that funding for these may be EU funding which will not continue long-term, or other forms of temporary funding:

- Welsh Government's 'Have a Go' programme for which Grŵp Llandrillo Menai is listed as a partner. This could include HNP providing funding for the creation of modules about nuclear relevant skills/occupations, and

- STEM Gogledd's recently funded project to enrich and promote STEM subjects through a range of activities that complement the mainstream curriculum within schools across Gwynedd, Anglesey and Conwy.

2.5.1.10   The secondary schools' enrichment services should be designed and arranged so that it is accessible to primary schools and can readily link community events. For example, parents could be invited to science shows or kits can be used as part of opening evenings or school exhibitions for families and the wider community. The services should also be designed to utilise existing strengths on the island, for example Ysgol Uwchradd Caergybi is active in the community and has a record of providing enriching extra- curricular activities.

Support community careers advice and supporting those with barriers into the labour market

2.5.1.11   Mitigation measures concerning careers advice and raising awareness are essential to maximise interest in training. For those making FE and HE education choices and those preparing to leave education or training, detailed information and advice should be available concerning opportunities and career pathways. Families and friends have a strong influence over young people's attitudes and choices regarding education and employment routes and they should also be engaged.

2.5.1.12   Support should be particularly targeted towards school leavers and others including NEETS, unemployed, underemployed, self-employed, the economically inactive, those with other barriers to employment and those who may wish to retrain or wish to re-enter the labour market. Free training and advice should be provided in accessible locations for those who may need it, such as help with interview techniques, job search and CV writing skills.

2.5.1.13   Guidance should anticipate potential future changes, such as students who leave for undergraduate degrees outside the region but who may return after their studies. Where possible, communication with this group should be maintained during their studies. Those who may decide to study relevant degree course such as physics, maths or engineering at Welsh universities such as Aberystwyth and Cardiff may be more likely to return and there may be incentives that HNP could provide to further encourage this.

2.5.1.14   Drawing on evidence from research and best practice, engagement should seek to:

- raise science capital amongst the wider population on the island,

- provide creative learning opportunities or help to counter stereotyped views of STEM and gender imbalance in other skills areas to help improve aspirations of people on the island, especially for disadvantaged groups and to encourage girls to consider STEM education and employment options,

- show young people the link between their education and gaining more interesting and rewarding jobs or better earning power, and

- be sensitive to objections on the island, seeking to show understanding and avoid discouraging those people who have reservations about the project (or know people who do) from considering employment opportunities.

2.5.1.15 Steps should be taken to target those not resident on Anglesey with key skills who may consider returning and becoming a permanent resident. This should particularly include those with a prior connection to the island who have relevant skills, such as young people who have left Anglesey to pursue higher education or work elsewhere, skilled labour that may have left the island when Wylfa 1 was closed, or teachers working in other parts of the UK.

2.5.1.16 Marketing and information through business networks and press advertising is needed to increase the number of companies based on Anglesey or with significant employees on Anglesey who may be interested in working on Wylfa Newydd. This should include helping them understand a) what the process for applying for work is and b) how to begin to train their personnel to improve their chances of winning this work.

2.5.1.17 Specific marketing and promotion is also needed to attract more teachers. This includes attracting qualified teachers practising elsewhere to take up permanent jobs on the island, encouraging ex-teachers to return to the profession and increasing the flow of potential new teachers and trainers to train and qualify.

2.5.1.18 Engagement may include community events, poster campaigns, letters, social media and press advertising to promote initial interest, followed up with information and advice sessions to explain 'routes back to work' and provide tailored advice, encouragement and support. For example, advertising about possible career progression could be targeted at self-employed tradesmen who are unqualified to offer them competency assessments leading to possible certification.

2.5.1.19 Small offices may be needed in each main population centre on the island for bookable consultation and advice sessions. An example of this type of intervention is the OPUS project in Conwy which provides services to over 16s who are unemployed including help with confidence and self esteem, encouragement towards volunteering, work placements to gain practical work experience, and other help.

Brokering of work experience opportunities for Yrs10-13

2.5.1.20 Week long work experience programmes for students in years 10 – 13 are a challenge for schools to arrange but are valuable elements of their learning and experience. A specialist service is needed to carry out the necessary safety checks and make other arrangements that are necessary before school learners can take up work experience placements with employers. This is a service that was previously performed by Careers Wales but has recently been discontinued, leading to a dramatic fall in the numbers of pupils taking up work placements across Wales.

Encouraging employers to offer work placements

2.5.1.21 Arrangements are needed to ensure that HNP's contractors support education and training measures and that this is tiered down through the supply chain. In addition to using contractual techniques, this could be achieved with trained staff visiting businesses and acting as a liaison between them and training establishments. Measures could include:

- encouraging (or perhaps setting targets) for use of Welsh in the workplace,

- offering work placements or apprenticeship training opportunities, and

- supporting schools (e.g. providing STEM Ambassadors) or visiting school events, providing careers information.

Providing careers advice in schools

2.5.1.22   Staff should be employed to visit all schools regularly and provide advice to teachers and pupils in secondary schools on a 1:1 basis.

2.5.1.23   Teachers and trainers in relevant sectors should also be provided with up to date information on an on-going basis, particularly those teaching years 10 and 11. This should include details about progress with the project as a whole, estimated skills needs and employment opportunities for the period relevant to those they teach, and information on education and training pathways. Additional details, such as feedback from those who understand the nature of the kind of work through direct experience would be helpful.

3   Evidence base

3.1.1   Introduction – preparing the Island's young people

3.1.1.1   A complete schedule of evidence underpins the analysis and identification of the measures and mitigation proposed. For clarity and to avoid excessive duplication, it has been presented thematically. The relevance of each theme to the impacts relating to preparing the Island's young people is shown in the table below.

	Impact 1	Impact 2	Impact 3
Positive value of employment	✓	✓	✓
Raising educational attainment	✓	✓	✓
Impact of facilities on educational attainment	✓	✓	✓
Impact of teaching on educational attainment	✓	✓	✓
Teacher shortages	✓	✓	✓
Promoting STEM	✓	✓	✓
But it's not just about STEM	✓	✓	✓
Barriers to learning and training	✓	✓	✓
Teacher recruitment and retention issues	✓	✓	✓
Effect of journey times on employment	✓		✓
Tiering down	✓		✓
Skills shortages	✓	✓	✓
Negative effects of displacement			✓

3.1.1   Introduction – Capacity and Capability of the Island's schools

3.1.1.1   The following evidence underpins the analysis and identification of the measures and mitigation proposed. For clarity and to avoid excessive duplication, it has been presented thematically. The relevance of each theme to the impacts assessed in relation to the capacity and capability of the Island's schools is shown in the table below.

	Impact 4	Impact 5	Impact 6	Impact 7	Impact 8
Raising educational attainment		✓	✓	✓	✓
Impact of facilities on educational attainment	✓		✓		
Impact of teaching on educational attainment			✓	✓	✓
Teacher shortages		✓	✓	✓	✓
Promoting STEM	✓	✓		✓	✓
But it's not just about STEM		✓		✓	✓
Barriers to learning and training	✓	✓	✓	✓	✓
Teacher recruitment and retention issues		✓		✓	✓

3.1.2   Positive value of employment

3.1.2.1   The Pearson Report into the Future of Skills and Employment in 2030 (2013) states: Not only are jobs typically the most important determinant of earnings and living standards. They also critically shape how individuals view themselves, interact with others and perceive their stake in society, including their sense of control over the future[viii].

3.1.2.2   The Donor Committee for Enterprise Development (DCED) summarises evidence on the relationship between economic growth and employment[ix].

3.1.3   Raising educational attainment

3.1.3.1   The report Education at a Glance OECD (2018) showed the link between educational attainment and employability and highlighted that this is a particularly pronounced factor in the UK[x]. It found that across almost all countries the risk of unemployment in the UK was higher for those without an upper secondary qualification compared to those who attained this baseline level.

3.1.3.2   Schooling, Labor-Force Quality, and the Growth of Nations[xi]. Hanushek, E. A., & Kimko, D.D. (2000). School quality had a remarkable impact on differences in economic growth.

3.1.3.3   Economic outcomes and school quality[xii]. International Institute for Educational Planning (2005). Investments should focus on school quality because they have

such powerful economic impacts. The most likely way to improve student performance is to improve the quality of teachers.

3.1.3.4   An analysis of the labour force survey reinforces the wealth of literature on the importance of training and skills attainment. The table below shows that as the level of highest qualification held by residents of Wales rises, broadly speaking so too does their propensity to be employed and their average gross weekly pay. Furthermore, given Gross Value Added (GVA) is essentially the sum of wages and profits, we can assume that raising skill levels should, all other things being equal, raise productivity levels in Anglesey.

Fig 5: Economic activity and average pay by highest qualification in Wales

Level of highest qualification held (living in Wales)	Economic Activity Status			Average gross weekly pay in main job
	Share of Employed	Share of Unemployed	Share of Inactive	
NQF Level 4 and above	79	2	18	£644
NQF Level 3	74	4	21	£385
NQF Level 2	64	7	29	£359
Below NQF Level 2	58	6	36	£337
Trade apprenticeships	70	2	28	£310
Other qualifications	65	3	32	£295
No qualifications	37	4	60	£303
Total	**67**	**4**	**29**	**£475**

Source: Labour Force Survey

3.1.3.5   Improving Schools in Wales: An OECD Perspective (2014)[xiii]: Estonia has some parallels to Wales, and particularly Anglesey: ageing population, net outward migration, reduction in pupil numbers, effect of a dominant "outside" language. Estonia is ranked 8. (2nd highest in Europe) overall in PISA education tests. It has also shown year-on-year improvement since participation in PISA testing. Intervention by the government starting in 2008 included:

- promote vocational training.
- encourage newly qualified teachers to teach in small towns and rural areas
- new teachers are offered an allowance of more than 12 750 EUR during the first three years of teaching.
- promoting ICT use at all levels of education
- The introduction of ICT equipment is combined with teacher training and new learning materials.

3.1.3.6   The Nuclear Capability Study (2014) found that recruitment into nuclear roles is principally of new graduates and those who have recently completed apprenticeships[xiv].

3.1.3.7   The research paper: The effect of schools on school leavers' university participation (2013) it one of many that finds that most of the variation in actual participation in university education between particular groups can be accounted for by measures of prior attainment, particularly at age 15 (i.e., at the end of compulsory schooling)[xv].

3.1.3.8   The Investment Strategy for Northern Ireland[xvi] introduced 'social clauses' into contracts for major public works. These clauses required contractors to deliver employment and training opportunities for apprentices and the long-term unemployed. This has been developed further and expanded into the "Buy Social"[xvii] Construction Model where for example one long-term unemployed individual must be recruited for each £1m of contract value.

3.1.3.9   The Nuclear Energy Skills Alliance Nuclear Workforce Assessment (2015) states that across the whole ECI in the UK, it is estimated that 18,000 are currently employed in the nuclear sector, split between decommissioning sites (50%), operational staff at reactor sites (43%) and NNB sites (7%). Demand is set to increase the total number of engineers in the nuclear sector to 26,000 by 2020.

3.1.3.10   A Learning Inspectorate Donaldson (2018) highlights the challenge of raising attainment during the on-going education reforms[xviii]: "Current evaluations of school leadership in Estyn's inspections suggest that secondary schools in particular will need to 'up their game' if they are to make a success of the reforms."

3.1.3.11   An Estyn report on School size and educational effectiveness (2013)[xix] highlighted the effect of school size on pupils' attainment.

3.1.4   Impact of facilities on educational attainment

3.1.4.1   The quality of new build in Further Education and its impact on learners (Estyn 2010)[xx]. Teachers indicate that they have improved levels of motivation upon moving to new build accommodation.

3.1.4.2   The thematic report 'Appraisal of the performance of schools before and after moving to new or substantially renovated dwellings' (Jan 2007), Estyn stated: "Improvements in the quality of buildings have a very beneficial effect on the quality of teaching and staff morale Having a positive effect on pupils' performance. "

3.1.4.3   Kools, M. and Stoll L. (2016), "What Makes a School a Learning Organisation?", OECD Education Working Papers, No. 137, OECD Publishing, Paris[xxi]. An OECD project on Innovative Learning Environments (ILE) started by examining the literature on the nature of learning, and then identifying research-informed principles of learning to guide development of learning environments for the 21st century.

3.1.5   Impact of teaching on educational attainment

3.1.5.1   PISA Effective Teacher Policy Report (2018)[xxii]. Better teachers are crucial to improving the education that schools provide.

3.1.5.2   Bennett, J., Dunlop, L., Knox, K. J., Reiss, M. J. and Torrance Jenkins, R. (2018) 'Practical Independent Research Projects in science: a synthesis and evaluation of the evidence of impact on high school students'[xxiii]. Practical investigations in science in school led to improved learning of science ideas, affective responses to science, views of pursuing careers involving science, and development of a range of skills

3.1.5.3   Improving Teaching. Estyn (2018)[xxiv]. Education research strongly suggests that, of all education factors, classroom teaching has the greatest influence on pupils' learning.

3.1.5.4   University of Missouri-Columbia (2018)[xxv]. "Students taught by highly qualified teachers more likely to obtain bachelor's degree: Schools with more teachers who majored in their teaching subject are more likely to have students succeed both short and long term."

3.1.5.5   Survey by OFSTED of 12 schools[xxvi]. Characteristics of outstanding secondary schools in challenging circumstances: Features that the schools have identified as important ingredients of their achievements are illustrated by short case studies. A number of themes emerged which were common to most or all of the schools.

These included, for example, attention to the quality of teaching and learning; the assessment and tracking of students' progress; target-setting, support and intervention; attracting teachers and growing leaders.

3.1.5.6   Children's perceptions of school science[xxvii] Colette Murphy and Jim Beggs (2003) highlights evidence of the lack of confidence in STEM amongst primary school teachers: "Many findings (e.g. Harlen, Holroyd and Byrne, 1995) have cited problems linked to primary teachers' lack of confidence in teaching science and their insufficient scientific knowledge background."

3.1.5.7   A teacher who knows me: The academic benefits of repeat student-teacher matches. Institute for Effective Education (2018)[xxviii]. The study suggests that assigning pupils to the same teacher two years in a row may improve academic performance because teachers get to know their pupils and are able to adjust and target their teaching styles accordingly.

3.1.5.8   Language teaching and learning in multilingual classrooms[xxix]. European Commission (2015). There is indicative research evidence that the availability and level of support improves migrant children's educational attainment and that additional learning activities and support in school can improve their progress.

- Classroom support has to be maintained with the support of teaching assistants, specialist teachers and resources.

- Raising attainment is linked to teachers who have the competences and experience to tailor teaching to children in the class. Build the capacity and resources of classroom teachers and provide additional teaching.

- Class teachers who adapt their approaches to teach children whose language skills are not as high as others are believed to be better able to ensure they can participate in the learning and make the same progress as other children.

- Classroom teachers in primary schools and subject specialists in secondary schools benefit from training to enable them to teach children without the language of instruction more effectively.

3.1.6   Teacher shortages

3.1.6.1   Recent figures from Stats Wales (2017)[xxx] show an increase in the number of vacancies advertised for science teachers. The combined number of years of experience in teaching science leaving the profession has also risen, a continuation of a worsening trend in Wales.

3.1.6.2   The Welsh Reform Journey: OECD (2017)[xxxi]. There is a need for providing stronger incentives for talented individuals to become teachers, especially in areas of shortages. Developing a high-quality teaching profession is the key to the future success of schools in Wales.

3.1.6.3   KS3 and KS4 science report, Estyn (2017)[xxxii]. "There is a lack of applicants for science posts". "The number of post-graduate science teachers being trained has fallen short of national targets over several years".

3.1.6.4   'Teaching: A valued profession' (2018) by Professor Mick Walters[1] states that the recruitment of teachers to some areas of the curriculum is proving difficult. Shortage subjects include mathematics, the sciences, geography, the Welsh language, and digital technology.

3.1.6.5   National Audit Office report: Training New Teachers (2016)[xxxiii]. Found that secondary school teacher training places are proving particularly difficult to fill. The Department cannot recruit enough trainees in the majority of secondary subjects: 14 out of 17 secondary subjects had unfilled training places in 2015/16, compared

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[1]http://www.assembly.wales/ministerial%20statements%20documents/the%20future%20of%20teachers%E2%80%99%20pay%20and%20conditions%20(2)/180921%20-%20kw%20-%20teaching%20a%20valued%20profession%20report%20by%20mick%20waters%20-%20english%20%20(1).pdf

with two subjects with unfilled places in 2010/11. In subjects with hard-to-fill places, providers are more likely to accept trainees with lower degree classifications.

3.1.6.6 The report: Teaching and Leadership: Supply and Quality (2018) by the Education Policy Institute (EPI)[xxxiv] recognised that there are many better paid jobs on offer for mathematics and physics graduates. The EPI suggested that teacher salaries should be higher in shortage subjects to reflect the demand for skills outside of education through salary supplements, while also acknowledging that present budgets cannot respond sufficiently to have the necessary impact.

3.1.6.7 What happens when you pay shortage-subject teachers more money? Gatsby/Education DataLab (2017)[xxxv]. Research showing that introducing a 5% salary supplement for new science and maths teachers in the first five years of their career would significantly help eliminate the shortage of teachers in these subjects.

3.1.6.8 Improving science teacher retention – Wellcome Trust/Education Datalab (2017)[xxxvi].

- High teacher turnover damages pupil attainment (Ronfeldt et al 2012; Atteberry et al 2016):

- Where teacher shortages occur, research shows that school leaders tend to either lower recruitment standards, make increased use of temporary teachers or increase class sizes (Smithers and Robinson 2000), all of which have been linked to reduced pupil attainment (Mocetti 2012; Fredriksson et al 2013; Schanzenbach 2006).

3.1.6.9 Improving science teacher retention. Wellcome Trust/Education Datalab (2017)[xxxvii]. One in 12 teachers who did not participate in STEM Learning CPD left teaching within two years but this drops to 1 in 30 for those who participated in CPD. CPD increases the odds of remaining by 160%.

3.1.6.10 Evaluation of Welsh-Medium Provision in Initial Teacher Education[xxxviii] (2018). Shows the decline in take up of welsh medium teacher training (see table below) and identifies the following challenges to attracting more trainees:

- the perception that financial incentives in England are more generous than in Wales,

- the drop in the number of students pursuing A level courses through the medium of Welsh,

- the drop in the number of students taking Welsh as a subject at A level,

- policy requiring ITE trainees to hold a grade B GCSE in English and Maths has reduced the sector's recruitment pool

- greater level of competition for Welsh language skills amongst prospective employees across a broader range of careers.

- teaching has suffered from significant negative press coverage over the last few years with prospective trainees deterred by the high workload

Table 5.3: First years on ITE courses in Wales designed to enable students to to teach in Welsh and school level

	School level	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Enabled to teach in Welsh	Primary school	145	195	180	135	150	145
	Secondary school	120	105	140	120	95	90
	All	**265**	**305**	**320**	**255**	**245**	**235**
Not enabled to teach in Welsh	All	**1,495**	**1,440**	**1,330**	**1,245**	**1,065**	**1,010**

Source: HESA Student Record

3.1.7 Promoting STEM

3.1.7.1   The Education at a Glance OECD (2018) report highlights the challenge of promoting careers in engineering, manufacturing and construction, finding that these accounted for just 9% of graduates in the UK, one of the lowest rates among the OECD countries (OECD average 14%).

3.1.7.2   Wales Institute of Social & Economic Research, Data & Methods (2018)[xxxix]. The effect of schools on school leavers' university participation - allocating resources to raising aspirations and giving practical help with the university application process could make a difference [to the numbers of learners applying to go to university].

3.1.7.3   University College London (2017)[xl]. Students' science attitudes, beliefs, and context: associations with science and chemistry aspirations). Students' aspirations to study non-compulsory science/chemistry in the future were associated with:

- Their extrinsic motivation towards science (for example, how science can help with their future lives/ material benefit).

- Students' family science capital, advice/pressure to study science, participation in science extra-curricular activities, self-concept and intrinsic value (finding science interesting).

- Teaching approaches such as hands on practical work and providing everyday contexts for science are linked to extrinsic and intrinsic motivation and self-concept.

- Engagement in extra-curricular science activities."

3.1.7.4   Getting Skills Right: United Kingdom, OECD (2017)[xli]. Research-based recommendations concerning:

- Repeated employer interactions during secondary schools should become a cornerstone of career guidance strategies. Facilitate navigation of the abundance of available career guidance information by incorporating the use and analysis of online data portals into secondary school curriculum.

- Provide the employed with access to…career guidance counselling provided by approved recruitment agencies,

- Lifelong learning

- Apprenticeship system

- Weak demand for higher-level skills

- Access to quality schooling

3.1.7.5   Wellcome State of the Nation – Primary Science (2017)[xlii]. Provides a 'state of the nation' picture of primary science teaching across the UK. Key findings: in the past 12 months, just under a third (30%) of teachers had not received any support for teaching science and 25% of teachers are concerned that they may not be able to answer children's questions about science.

3.1.8   But it's not just about STEM

3.1.8.1   Good Work: the Taylor Review of Modern Working Practices (2017) . Employers stressed the value they place on the numeracy, literacy and digital skills of young people entering their workforces". "the importance of transferable skills, such as communication, team-working and organisation"

3.1.8.2   The Future of Skills Employment in 2030, Pearson (2017) finds that a growing body of work also underscores the role of 'noncognitive' skills, including social skills and leadership skills. This derives from the pivotal insight of Heckman (1995) that labour market outcomes such as earnings are likely shaped by an array of skills insofar as measured cognitive ability accounts for only a small portion of the variation in such outcomes (Heckman and Kautz, 2012). Deming (2015) finds that, in the US, nearly all job growth since 1980 has been in occupations that are relatively social-skill intensive.

3.1.8.3   Promoting Emotional Health, Well-being and Resilience in Primary Schools (2016) Report concluded "there is no silver bullet". There is a variety of high-quality and evidence-based programmes which provide excellent guidance. What is critical is how a programme is implemented, and a whole school approach is key.

3.1.8.4   Sources of resilience and their moderating relationships with harms from adverse childhood experiences (2018) . Identifies the importance of a relationship with a trusted adult in a child or young person's life for mental illness outcomes and the importance of all school staff being prepared.

3.1.8.5   Gwynedd and Anglesey Public Services Board recently carried out a well-being assessment, which confirmed that lack of attainment correlates with the lack of well-being of individuals throughout their lives, with evidence that chronic adverse experiences (ACEs) have a long-term negative impact on young children. It is necessary to ensure that all children have positive experiences during their childhood to enable them to thrive and grow to become active and participating members of their communities.

3.1.8.6   What do rigorous evaluations tell us about the most promising parental involvement interventions? A critical review of what works for disadvantaged children in different age groups. Durham University. Nuffield Foundation (2013)[xliii]. Also, parents as partners in teaching: Trimdon Grange Infant and Nursery School. Manchester. Ofsted (2015)[xliv]

3.1.9   Barriers to education and training

3.1.9.1   Kings College London, ASPIRES research[xlv]. A range of papers identifying science capital as a key factor in young people's aspirations and motivations to study STEM subjects and pursue STEM careers. Raising science capital requires a broad approach including school, family and community, particularly in raising aspirations of girls and those from disadvantaged backgrounds.

3.1.9.2   Review of SES and Science Learning in Formal Educational Settings A Report Prepared for the EEF and the Royal Society (2017)[xlvi] including correlational studies of science learning, Found that disadvantaged pupils make poor progress in science at every stage of their school career. The gaps grow particularly strongly between ages 5-7 and ages 11-16, which coincide with particularly significant times in cognitive development. Disadvantaged pupils are proportionally less likely than other pupils to continue with science in the post-16 years. The factors that hold low

SES pupils back in school attainment are likely to be ones that affect a wide range of school outcomes.

3.1.9.3   Learning Works Widening Participation in Further Education (1997)[xlvii]. "Adult education classes have meant added enrichment for many who have already benefited from education" but there is concern that initiatives to include more working-class people, more disaffected young people, more women, more people from ethnic minority groups are being discontinued because they fall through the gaps in the system.

3.1.9.4   Becci Newton and Joy Williams, Institute for Employment Studies (2013)[xlviii]. Barriers to greater inclusivity in apprenticeships include parents' views of suitable occupations, lack of positive role models, lack of flexible working conditions, lack of vacancies, lack of confidence, negative perceptions of apprenticeships, insufficient careers guidance, direct and indirect discrimination, stereotyped perceptions of occupations.

3.1.9.5   Office for Students: National Collaborative Outreach Programme report (2018)[xlix]. Lower interest and knowledge in higher education in disabled people and white, working class learners "Disabled learners have lower levels of knowledge about the benefits of higher education and are less confident in their ability to fit in and cope with student life". "Mentoring is the most common way of increasing engagement and interest in higher education".

3.1.9.6   What role do enjoyment and students' perception of ability play in social disparities in subject choices at university? UCL Institute of Education (2017)[l]. Students whose parents had higher levels of education were more likely to choose STEM subjects over arts and humanities as their enjoyment of STEM subjects increased, compared with students whose parents had low levels of education.

3.1.9.7   Alison Fuller and Lorna Unwin, University of London (2014)[li]. The evidence indicates that overcoming gender inequalities and helping young people to change their attitudes to the choices they make in relation to both education and careers requires a multi-faceted, innovative, and sophisticated approach, beginning as early as possible and extending well into adult life. It requires the commitment and involvement of everyone in society, and continuous monitoring.

3.1.9.8   TUC and YWCA (2010)[lii]. The report states that although more females are joining apprenticeships, they are joining new schemes and not those that are existing. New apprenticeships have been created in areas such as business administration and education which are largely attracting more female applicants. Therefore occupational segregation still exists across all areas with less females entering roles related to engineering.

3.1.9.9   Rose Study, University of Oslo (2010)[liii]. In Europe, around 50% of the boys give a positive response to the question "I would like to get a job in technology" but very few girls indicate that they want such a job. This gender difference is dramatic and there seems to be something about the perception of "technology" that puts off girls in a way that seems to exist in all well developed countries".

3.1.9.10   What factors determine the uptake of A level physics? International Journal of Science Education. Gill, T., & Bell, J. F. (2013)[liv]. It is also clear that physics is overwhelmingly masculine, with physics courses at A level and university being predominantly comprised of male students. Indeed, gender would seem to be the largest determinant (compared with prior attainment or type of school, for instance) of physics uptake at A level.

3.1.9.11   Language and education: the missing link[lv]. Save the Children and the CfBT Education Trust (2009). Teaching in an unfamiliar language limits the building new knowledge and is an important factor in whether or not children succeed in education.

3.1.9.12   A National Study of School Effectiveness for Language Minority Students' Long-Term Academic Achievement[lvi]. University of California, Santa Cruz (2002). The following major factors influence the success of programs for teaching in a learners

non-native language: the quality of available instructional time and the degree of full and effective support, teacher skills and training.

3.1.9.13   Minority Ethnic Language and Achievement Project Evaluation[lvii]. ICF GHK in association with Arad Consulting (2014). Classroom teachers in primary schools and subject specialists in secondary schools benefit from training to enable them to teach children without the language of instruction more effectively.

3.1.9.14   Raising attainment in Anglesey schools must also recognise the particular challenges facing small schools. An Estyn report on School size and educational effectiveness (2013)[lviii] highlighted the disadvantageous effect of school size on pupils' attainment. Half of Anglesey primary schools (23) have fewer than 100 pupils.

3.1.9.15   Research on the nature of learning What Makes a School a Learning Organisation? (2016)[lix], endorses research findings on effective teaching. For example, the ILE fifth principle argues that schools should set clear expectations for students (Muijs et al., 2014[lx]), demand hard work and challenge them without overloading. All students need to be sufficiently challenged to reach above their existing level and capacity. However having high expectations of all students should not be limited to schools but requires parents, communities and society at large to do the same if equity in learning opportunities is to prevail (Frome and Eccles, 1998[lxi]; Dumont, Istance and Benavides, 2010[lxii]).

3.1.9.16   The effect of schools on school leavers' university participation (2018) describes research that tracks progress of school leavers in Wales and confirms that there is evidence that the school or tertiary setting a young person attends may also determine the likelihood they will go to university[lxiii].

3.1.9.17   In 2017 HNP conducted an online SNAP SURVEY (5.1 Consultation Report Appendix D.1 to D.7 Rev 1.0) with people living on the Island receiving 289 responses. Two tables showing results from this survey are shown below. These showed how strongly transport issues affect their lives, and the reliance on cars for those who can afford them (see two charts below). Conclusions stated in the report included:

- An apparent disconnect between people needing to travel to activities/services and the lack of public transport at the right time etc

- Many can't rely on public transport if they need to get to an appointment- either the bus is too early and they have to wait around or it doesn't run past/through their village.

Results from SNAP SURVEY to question "which of the following services were near where they lived?":
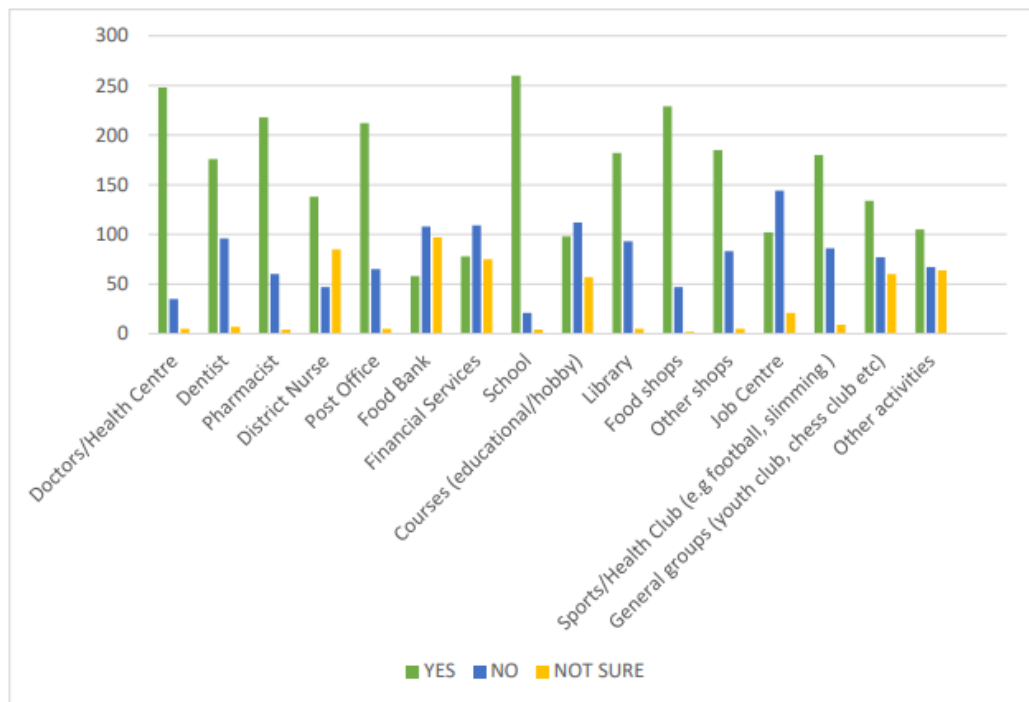
Results from SNAP SURVEY to question: "how they get about?"
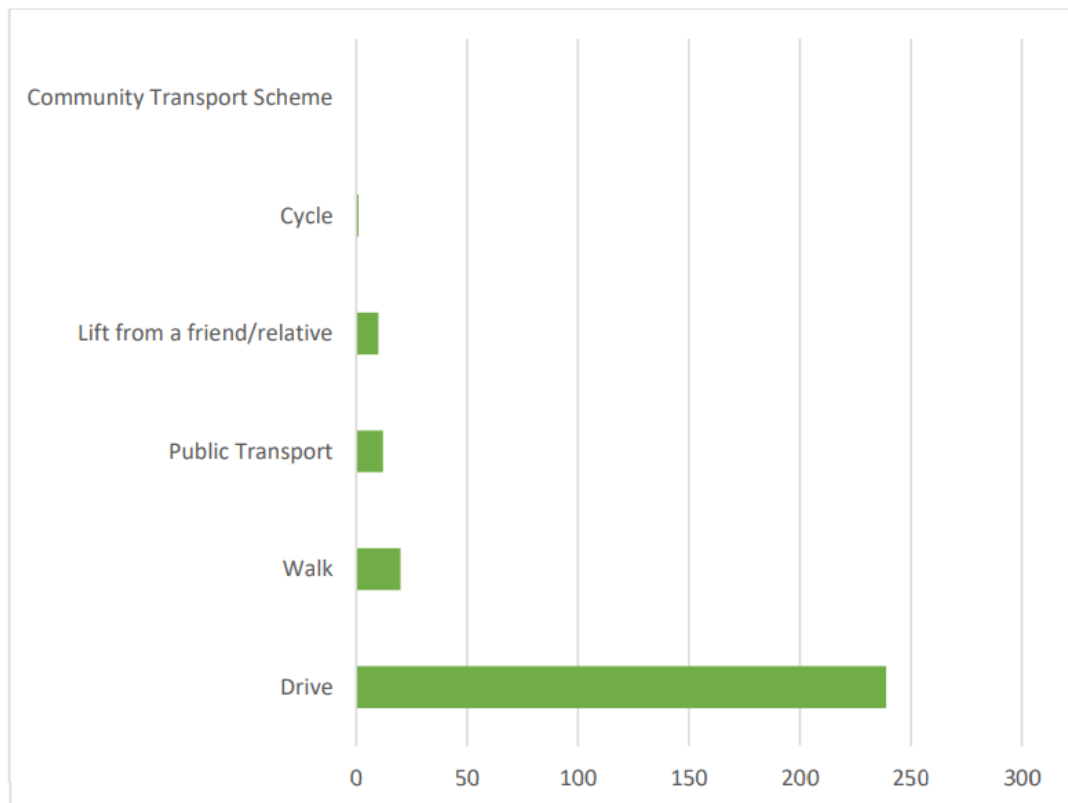
3.1.9.18   New Qualifications, Estyn (2018). A report on new GCSEs in English language, Welsh language, mathematics, mathematics-numeracy, and the Welsh Baccalaureate finds that many pupils do not develop their numeracy well enough through the Welsh Baccalaureate…often because teachers involved in the planning and delivery of the course lack the necessary experience and expertise in mathematics

3.1.9.19   The provision of textbooks and learning resources for pupils, Children, Young People and Education Committee (2018)[lxiv]. The Committee reported that it is extremely concerned about the potential impact of the forthcoming curriculum reform on the availability of resources.

3.1.10   Teacher recruitment and retention issues

3.1.10.1   Improving science teacher retention – Wellcome Trust/Education Datalab (2017)[lxv].

- High teacher turnover damages pupil attainment (Ronfeldt et al 2012; Atteberry et al 2016):

- Where teacher shortages occur, research shows that school leaders tend to either lower recruitment standards, make increased use of temporary teachers or increase class sizes (Smithers and Robinson 2000), all of which have been linked to reduced pupil attainment (Mocetti 2012; Fredriksson et al 2013; Schanzenbach 2006).

3.1.10.2   Recent figures from Stats Wales (2017)[lxvi] show an increase in the number of vacancies advertised for science teachers. The combined number of years of experience in teaching science leaving the profession has also risen, a continuation of a worsening trend in Wales.

3.1.10.3   National Audit Office report: Training New Teachers (2016)[lxvii]. Found that secondary school teacher training places are proving particularly difficult to fill. The Department cannot recruit enough trainees in the majority of secondary subjects: 14 out of 17 secondary subjects had unfilled training places in 2015/16, compared with two subjects with unfilled places in 2010/11. In subjects with hard-to-fill places, providers are more likely to accept trainees with lower degree classifications.

3.1.10.4   KS3 and KS4 science report, Estyn (2017)[lxviii]. "There is a lack of applicants for science posts". "The number of post-graduate science teachers being trained has fallen short of national targets over several years".

3.1.10.5   'Teaching: A valued profession' (2018) by Professor Mick Walters[2] states that the recruitment of teachers to some areas of the curriculum is proving difficult. Shortage subjects include mathematics, the sciences, geography, the Welsh language, and digital technology. The report acknowledges there can be regional skills shortages and shortages of teachers, but expression caution around using incentives citing the problem of generating competition rather than collaboration between schools.

3.1.10.6   The Welsh Reform Journey: OECD (2017)[lxix]. There is a need for providing stronger incentives for talented individuals to become teachers, especially in areas of shortages.

3.1.10.7   At secondary level an increase in school rolls is expected over the coming five years and additional recruitment will be needed for approximately 25-30 new teachers by 2023, placing further pressure on recruitment and retention in shortage areas.

3.1.10.8   The report: Teaching and Leadership: Supply and Quality (2018) by the Education Policy Institute (EPI)[lxx] recognised that there are many better paid jobs on offer for mathematics and physics graduates. The EPI suggested that teacher salaries

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[2]http://www.assembly.wales/ministerial%20statements%20documents/the%20future%20of%20teachers%E2%80%99%20pay%20and%20conditions%20(2)/180921%20-%20kw%20-%20teaching%20a%20valued%20profession%20report%20by%20mick%20waters%20-%20english%20%20(1).pdf

should be higher in shortage subjects to reflect the demand for skills outside of education through salary supplements, while also acknowledging that present budgets cannot respond sufficiently to have the necessary impact.

3.1.10.9   A teacher who knows me: The academic benefits of repeat student-teacher matches. Institute for Effective Education (2018)[lxxi]. The study suggests that assigning pupils to the same teacher two years in a row may improve academic performance because teachers get to know their pupils and are able to adjust and target their teaching styles accordingly.

3.1.10.10   What happens when you pay shortage-subject teachers more money? Gatsby/Education DataLab (2017)[lxxii]. Research showing that introducing a 5% salary supplement for new science and maths teachers in the first five years of their career would significantly help eliminate the shortage of teachers in these subjects

3.1.10.11   Wellcome State of the Nation – Primary Science (2017)[lxxiii]. Provides a 'state of the nation' picture of primary science teaching across the UK. Key findings: in the past 12 months, just under a third (30%) of teachers had not received any support for teaching science and 25% of teachers are concerned that they may not be able to answer children's questions about science.

3.1.10.12   Improving science teacher retention. Wellcome Trust/Education Datalab (2017)[lxxiv]. One in 12 teachers who did not participate in STEM Learning CPD left teaching within two years but this drops to 1 in 30 for those who participated in CPD. CPD increases the odds of remaining by 160%.

3.1.11   Effect of journey times on employment

3.1.11.1   The report Workforce Mobility and Skills in the UK Construction Sector 2012[lxxv] found that when the reduced distance from temporary accommodation was taken into account construction workers were travelling an average (mean) of 28 miles each way, or a median journey of 20 miles.

3.1.11.2   Being sick of the daily commute could be affecting your health. Royal Society for Public Health (2016)[lxxvi] The main findings were that:

- health status, level of happiness and satisfaction were lower for people who had longer commutes. These people were also more likely to go to their GP.

- People who travel by bus or coach had lower levels of life satisfaction and less sense that their daily activities are worthwhile than those travelling by car, while those taking the train had higher levels of anxiety.

- In a poll of 1,500 people, 55% said they felt more stressed as a result of their commute and 41% did less physical activity.

3.1.11.3   As stated in HNP's Socio Economic Technical Appendix C1-2 Application Reference Number: 6.3.9, informed by IFF Research/University of Warwick. 2005, shows that in Wales 66% of workers are unwilling to travel more than 25miles to work, and that non-construction workers are more likely to conform to the average distance travelled to work (which is 12 miles or 19.6 kilometres). HNP's proposals are based on exceeding these percentages.

3.1.11.4   Babcock. 2012. Workforce Mobility and Skills in the UK Construction Sector 2012 found that "When the reduced distance from temporary accommodation was taken into account construction workers were travelling an average (mean) of 28 miles each way, or a median journey of 20 miles."

3.1.11.5   HNP's Socio Economic Technical Appendix C1-2 Application Reference 6.3.9 quotes information from Hinkley Point B showed that 94% of the operational workforce lived within the three immediate districts, and that EDF's policy states is that all operational permanent staff should live within 25 miles of the station [2.5.4]. This suggests HNP's estimate of the Anglesey residents labour participation is too low. It also states that during the decommissioning phase of Wylfa Power Station

87.2% of workers were residents on Anglesey [2.5.5], although a greater proportion of specialist roles are needed during commissioning, again suggesting a higher figure is realistic if appropriate mitigation is taken.

3.1.12 Tiering down

3.1.12.1 The Nuclear Capability Study (2014) conducted a telephone survey of businesses in Wales which showed that the most common business response to securing a contract beyond existing capacity would be to recruit skilled staff from elsewhere, reported by 60 per cent of potential suppliers and 49 per cent of those already engaged with the sector[lxxvii]. It also reported that "Sourcing locally tends to be more economically advantageous and is also good in maintaining good local and national reputation".

3.1.13 Skills shortages

3.1.13.1 Employer Skills Survey 2017 (DfE and IFF Research) includes information on the labour market in N Wales and also sets out impacts of skills shortages[lxxviii].

3.1.13.2 The Open University Business Barometer (2018) report states many businesses are struggling to fill vacancies, and that the level at which Wales businesses are "spending as a result of the skills shortage" is more "per business" than other parts of the UK[lxxix].

3.1.13.3 UCAS data (2018)[lxxx]. For those domiciled in Wales applications for physical sciences courses in 2018 are down around 7% from last year, continuing a five year downward trend. Applications for engineering courses are also down this year. See table below.

Undergraduate courses	2014	2015	2016	2017	2018
Physical sciences	4,390	4,350	4,270	3,940	3,650
Engineering	4,160	4,360	4,620	4,800	4,250

3.1.13.4 Getting Skills Right: United Kingdom, OECD (2017)[lxxxi]. Research-based recommendations including expanding bursaries for STEM students that are conditional on a commitment to teach after graduation. Enhance incentives to attract and retain higher quality teachers to schools in lower socio-economic areas in order to reduce disparities in access to quality schooling.

3.1.13.5 Universities UK: Graduate retention: meeting local skills needs (2017)[lxxxii]. Includes recommendations on how to improve retention.

- Promoting partnerships
- Improved intelligence
- Work placements
- Flexible funding

3.1.13.6 The Geographical Mobility of students, Higher Education Funding Council for England (2017)[lxxxiii]. The motivations that lead graduates to move away from their region of study are complex, but often stem from a combination of short term and long term career considerations.

3.1.13.7 Nuclear Education and Training: From Concern to Capability (2012)[lxxxiv]. "Universities have also striven to make improvements over the last ten years, with some new and advanced nuclear courses being launched in an increasingly global context. In some cases, and notably when assisted by governmental funding and

support, academic programmes have succeeded in reversing the declining trend of student recruitments experienced during the 1980s and 1990s."

3.1.13.8   The problem of vacancies caused by skills shortages are increasing particularly acutely in North Wales, and Brexit is adding to the pressures expected over the proposed period of construction of Wylfa Newydd. The following graphics are taken from the Employer Skills Survey 2017 (DfE and IFF Research)[lxxxv].

# Incidence and density of skill-shortage vacancies by region
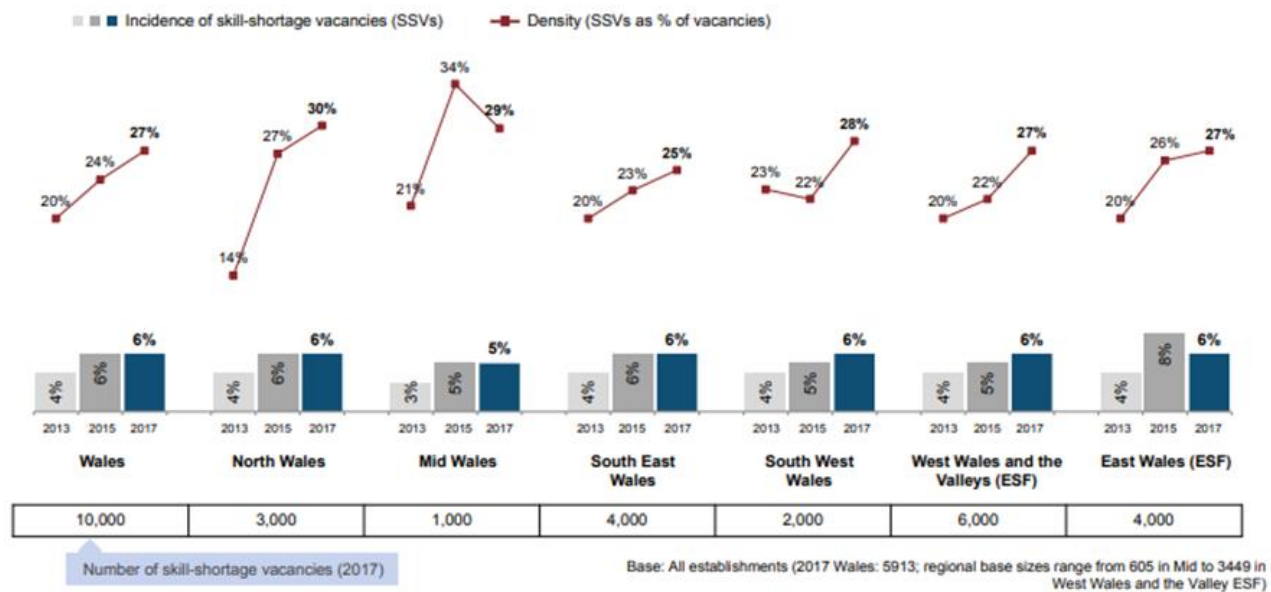
Impact of skill-shortage vacancies
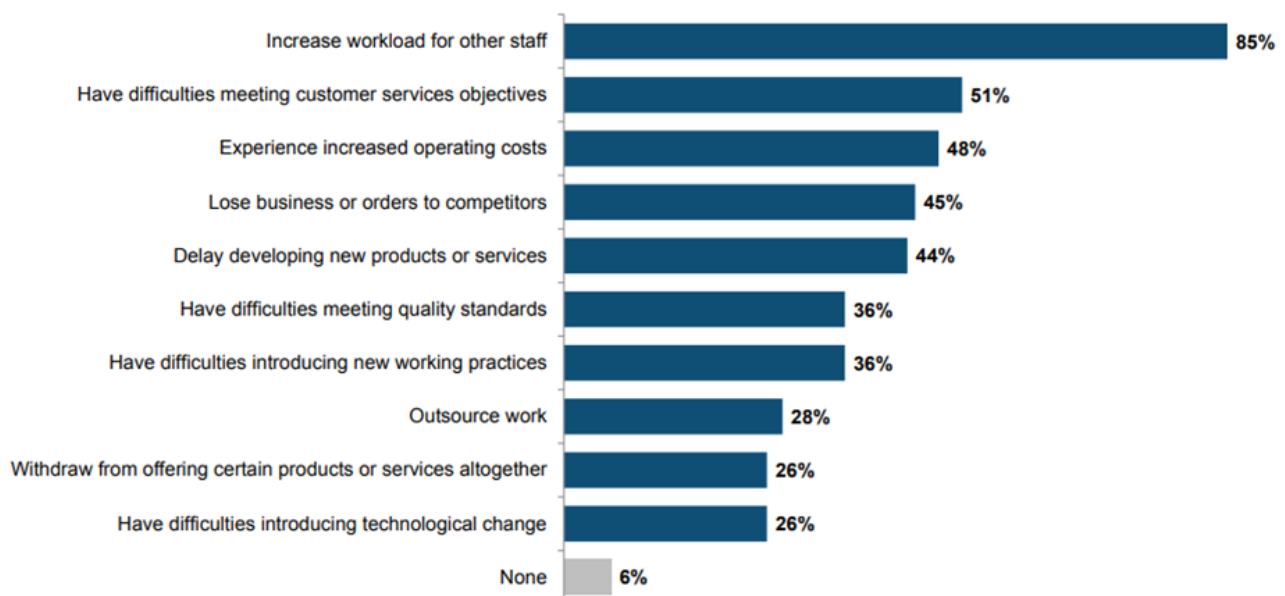
Base: All establishments with hard-to-fill vacancies that are all as a result of skill shortages (428)

3.1.13.9   The impact of vacancies caused by skills shortages and by skills gaps were set out clearly by the 2017 survey:

Impact of skills gaps

Base: All establishments with skills gaps (1056)
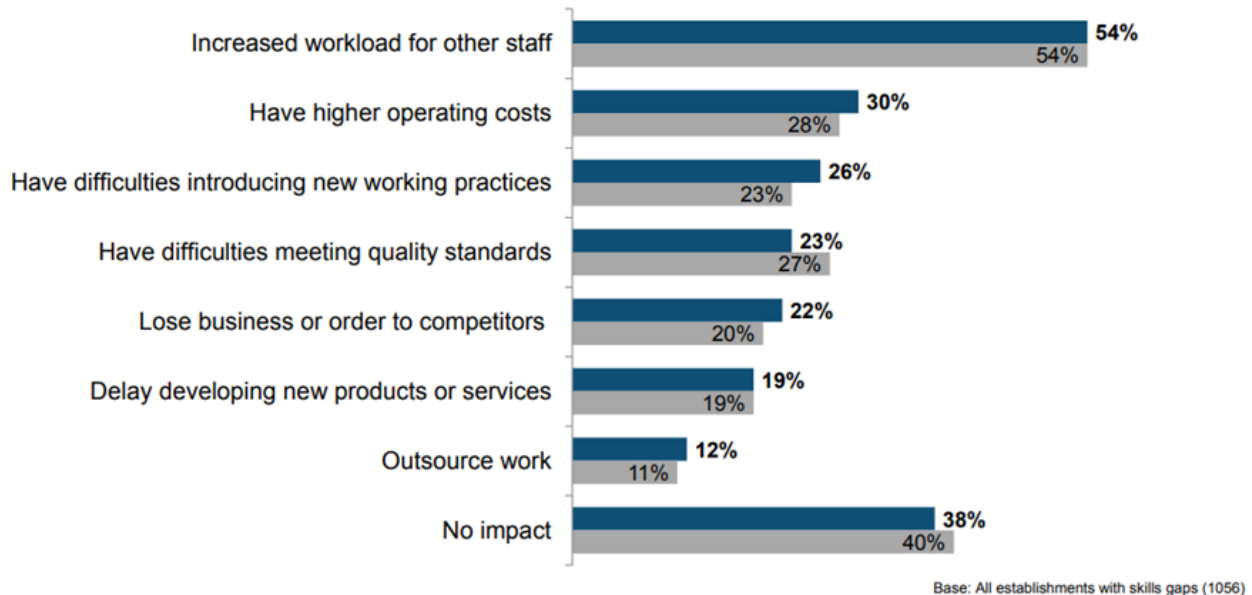
3.1.13.10   Demand for Skills and Supply of Local People, Oxford Economics study (2018) states: "Beyond peak labour demand in 2023, demand for labour will fall in Anglesey. This will have implications for residents who have trained, upskilled and graduated in the skills needed to fill jobs in Anglesey pre-2023.

3.1.14   Negative effects of displacement

3.1.14.1   Nuclear Capability Study (2014) found that significant employment displacement as a result of Wylfa Newydd is expected to occur, with employees moving to positions that they perceive to be better paid and possibly leaving employment voids as a result[lxxxvi].

3.1.14.2   Miller Research, Beaufort Research, Cogent and Oxford Economics, 2014 . "It is widely expected amongst stakeholders that there will be some significant employment displacement as a result of the NNB at Wylfa Newydd, with employees moving to positions that they perceive to be better paid and leaving employment voids as a result".

3.1.14.3   The Pearson Report into the Future of Skills and Employment in 2030 (2013) [lxxxvii] states:

- …among displaced workers who are re-employed within a year, between 20% and 70% change occupation or industry (OECD, 2012).

- Notwithstanding the economic benefits to firms of this labour supply flexibility, roughly a quarter of displaced workers experience a major change in skills – one that is associated with sizeable adjustment costs

and wage losses (Poletaev and Robinson, 2008; Kambourov and Manovskii, 2009; Gathmann and Schonberg, 2010; Robinson, 2011).

- Structural change is affecting labour markets, as it is all markets, upsetting the balance of supply and demand for skills. While misalignment is normal over the business cycle, the costs of persistent mismatches can be considerable if left unaddressed: they limit the ability of firms to innovate and adopt new technologies, while impeding the reallocation of labour from less productive activities to more productive ones (Adalet McGowan and Andrews, 2015). They also lead to increased labour costs, lost production associated with vacancies remaining unfilled and all the direct and indirect costs of higher unemployment (Sahin et al., 2014; OECD, 2016b)

4 National Policy and Legislation – preparing the Island's young people

4.1 National Policy

4.1.1.1 National Policy Statement for Energy (EN-1) (2011)[lxxxviii] requires applicants to assess jobs and training opportunities.

4.1.1.2 National Policy Statements EN-6 (Nuclear Energy) (2009)[lxxxix] requires that the applicant should identify at local and regional levels any socio-economic impacts associated with the construction, operation and decommissioning of the proposed new nuclear power station and that assessment should demonstrate that the applicant has taken account of, amongst other things, potential pressures on local and regional resources, demographic change and economic benefits.

4.1.1.3 Welsh Government is committed to creating a highly trained, inclusive workforce, which can respond effectively to national and regional skills needs. As part of its national strategy Prosperity for All and Economic Action Plan, its Employability Plan stresses the need to bring the role of employers to the fore.

4.1.1.4 The Welsh Government's apprenticeship policy and five-year action plan (Welsh Government, 2017) aims to address skills shortages and establish a new system for framework review and development, including degree level apprenticeship programmes. the Welsh Government priorities for 2016 to 2022 are:

- addressing acute skill shortages,

- introducing an all age apprenticeship programme approach,

- jobs and growth – developing higher level skills,

- improving access, equality and equity of opportunity,

- developing sustainable skills pathways – integrating apprenticeships into the wider educational and economic system, and

- establishing a new system for framework review and development.

4.1.1.5 The National Employability Plan 2018[xc] built upon the Welsh Government's Economic Action plan released in December 2017, and set out the Welsh Government's vision for a highly trained, inclusive workforce, which can respond effectively to national and regional skills needs:

- At its centre is a commitment to helping individuals – regardless of their ability, background, gender, or ethnicity – to achieve their full potential through meaningful employment, delivering high-quality tailored support, increasing opportunities for sustainable work and bringing to the fore the role of employers.

- The Economic Contract frames the Welsh Government's relationship with business, based on the principle of public investment with a social purpose. The Economic Contract provides the opportunity to highlight and promote responsible business practices which have the potential to support employability including fair work and a focus on good health, skills and learning in the workplace.

4.1.1.6   The Welsh Government's recently published an update[xci] on the Employability Plan contains details of current initiatives on upskilling, tackling economic activity and careers advice services to adults, communities, parents and childcare.

4.1.1.7   The Cymraeg 2050 strategy[xcii] (2017) sets out ambitious targets for increasing the number of secondary teachers who can teach through the medium of Welsh from its current level of 1,800 to 2,200 by 2021 and 3,200 by 2031. ITE provision needs to nearly double the number of trainees being trained annually in order to realise these targets.

4.1.1.8   The 21st Century Schools building programme[xciii] is a national policy concerning strategic investment in the educational estate throughout Wales. It has been operational since 2013 organised in several phases. Band A runs until 2018/19 and Band B will run from April 2019 to March 2026.

4.1.1.9   Education in Wales: Our national mission 2017-21[xciv] (2017). Sets out the strategy, priorities and targets for the current education reforms due to be complete in 2026.

4.1.1.10   The Special Educational Needs Code of Practice for Wales[xcv] (2004). Sets out guidance, roles and responsibilities for early years providers, primary school and secondary school teachers, local education authorities, families, and all those involved in providing for children's special educational needs whether they have a statement or not.

4.1.1.11   NWEAB Regional Skills & Employment Plan 2017[xcvi]. Sets out challenges and priorities for north Wales to improve the skills base, meet employers needs and support growth.

4.1.1.12   The National Youth Work Strategy for Wales 2014–2018[xcvii] aims to ensure that young people across Wales have access to diverse informal and non-formal learning opportunities that stretch HNPs, challenge their thinking, and develop their skills.

4.1.1.13   Changing Lives: A Vision for Careers Wales 2017-20[xcviii] sets out how Careers Wales supports the aim of securing a more prosperous, healthy and ambitious Wales.

4.1.1.14   Relevant legislation

4.1.1.15   Welsh Language Act[xcix] (1993) has the fundamental principle that the Welsh and English languages should be treated on the basis of equality in the provision of services to the public in Wales.

4.1.1.16   Well-being of Future Generations (Wales) Act[c] 2015 requires public bodies in Wales to take into account the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change. It sets out seven well-being goals:

- A prosperous Wales
- A resilient Wales
- A healthier Wales
- A more equal Wales
- A Wales of cohesive communities
- A Wales of vibrant culture and thriving Welsh language

- A globally responsible Wales

4.1.1.17   The Children's Act 2004[ci]. This supplemented the Children's Act 1989 Act and reinforced the message that all organisations working with children have a duty in helping safeguard and promote the welfare of children.

4.1.1.18   The Planning (Wales) Act[cii] introduces legislative provision for the Welsh language in the planning system.

5   National Policy and Legislation – Capacity and Capability of the Island's schools

5.1.1.1   National Policy Statement for Energy (EN-1) (2011)[ciii] requires:

a) Assessment of jobs and training opportunities

b) Consideration of impact of a changing influx of workers including altering the demand for services and facilities in the settlements nearest to the construction work

5.1.1.2   National Policy Statements EN-6 (Nuclear Energy) (2009)[civ] requires that the applicant should identify at local and regional levels any socio-economic impacts associated with the construction, operation and decommissioning of the proposed new nuclear power station and that assessment should demonstrate that the applicant has taken account of, amongst other things, potential pressures on local and regional resources, demographic change and economic benefits.

5.1.1.3   The 21st Century Schools building programme is a national policy that has been operational since 2013. It is a long term strategic investment in the educational estate throughout Wales focusing on:

- addressing growth in demand for Welsh medium education

- reducing surplus capacity and inefficiency in the system

- expansion of schools and colleges in areas of increased demand for educational services

- addressing condition of educational assets

- making assets available for community use where demand exists, to optimise the infrastructure and resources for public services.

5.1.1.4   Education in Wales: Our national mission 2017-21[cv] (2017). Sets out the strategy, priorities and targets for the current education reforms due to be complete in 2026.

5.1.1.5   The Cymraeg 2050 strategy[cvi] (2017) sets out ambitious targets for increasing the number of secondary teachers who can teach through the medium of Welsh from its current level of 1,800 to 2,200 by 2021 and 3,200 by 2031. ITE provision needs to nearly double the number of trainees being trained annually in order to realise these targets.

5.1.1.6   The Welsh Government's Childcare, Play and Early Years workforce plan. The plan recognises the vital role the childcare sector plays as an economic enabler helping parents and carers to access and remain in work.

5.1.1.7   The Special Educational Needs Code of Practice for Wales[cvii] (2004). Sets out guidance for early years providers, primary school and secondary school teachers, local education authorities, families, and all those involved in providing for children's special educational needs whether they have a statement or not.

5.1.1.8   The Education Act 1996. Local authorities must ensure that there are sufficient schools providing primary and secondary education for their area. Schools are regarded as sufficient if they are sufficient in number, character and equipment to provide for all pupils the opportunity of appropriate education.

5.1.1.9   The School Standards and Organisation (Wales) Act 2013 requires that the Welsh Ministers issue a School Organisation Code. This sets out requirements for consultation upon and publication of, statutory proposals for change. Therefore, for proposals published since 1 October 2013, local authorities are required to follow the School Organisation Code which sets out requirements and provides guidance in respect of school reorganisation proposals brought forward to reconfigure school provision and for those responsible for determining proposals. Under the School Organisation Code, when considering decisions to alter schools IACC is required to:

- place the interests of learners above all others

- pay particular attention to the impact of the proposals on vulnerable groups, including children with Special Educational Needs (SEN)

- consider the ability of the school or schools which are the subject of the proposals to deliver the full curriculum at the foundation phase and each key stage of education. This consideration should include the quality of curriculum delivery and the extent to which the structure or size of the school is impacting on this.

- consider any relevant advice from Estyn, refer to the most recent Estyn reports or other evidence derived from performance monitoring, and take into consideration any other generally available information available on a school's effectiveness

- the nature of journeys to alternative provision and resulting journey times for pupils including SEN pupils; in particular whether primary school pupils will have one-way journeys in excess of 45 minutes or secondary school pupils one way journeys of over an hour;

- Where there are more than 10% surplus places in an area overall, local authorities should review their provision and should consider whether to make proposals for their removal if this will improve the effectiveness and efficiency of provision. A significant level of surplus provision is defined as 25% or more of a school's capacity (as defined in Circular 21/2011) and at least 30 unfilled places.

- Although local authorities are asked to manage excessive surplus places this does not automatically mean closing schools. Sections 1.7 and 1.8 of the Code encourage proposers to look at other options available to them and their schools, for example clustering, collaboration or federation with other schools to increase the school's viability or making use of the existing buildings as a community resource. They are also encouraged to rationalise school space by co-locating services within the school to offset costs

- the capital costs of proposals and whether the necessary capital funding is available;

- the scale of any projected net savings (taking into account school revenue, transport and capital costs);

- whether, without the proposals, the schools affected would face budget deficits;

- what impact proposals will have on educational attainment among children from economically deprived backgrounds;

- whether the possibility of making fuller use of the existing buildings as a community or educational resource

b) Under the School Organisation Code, when considering decisions to alter special schools IACC is required to:

- whether there is surplus SEN provision within the area;

- whether proposals will improve standards of accommodation for pupils with SEN, including building accessibility;

- the impact of proposals on the transportation of learners with SEN

5.1.1.10   The Education (Wales) Measure 2011 gave local authorities the power to federate schools (regulations revised in 2014). Consultation is currently in progress regarding the addition of a presumption against the closure of rural schools.

5.1.1.11   Welsh Language Act[cviii] (1993) has the fundamental principle that the Welsh and English languages should be treated on the basis of equality in the provision of services to the public in Wales.

5.1.1.12   Well-being of Future Generations (Wales) Act[cix] 2015 requires public bodies in Wales to take into account the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change. It sets out seven well-being goals:

- A prosperous Wales

- A resilient Wales

- A healthier Wales

- A more equal Wales

- A Wales of cohesive communities

- A Wales of vibrant culture and thriving Welsh language

- A globally responsible Wales

5.1.1.13   The Children's Act 2004[cx]. This supplemented the Children's Act 1989 Act and reinforced the message that all organisations working with children have a duty in helping safeguard and promote the welfare of children.

5.1.1.14   The Education (School Premises) Regulations 1999[cxi]. Standards concerning school premises.

5.1.1.15   The Planning (Wales) Act[cxii] introduces legislative provision for the Welsh language in the planning system.

6   Gaps in information provided – preparing the Island's young people

6.1   List of gaps

6.1.1.1   In document 1.4. General Glossary HNP defines its Jobs and Skills Strategy as "A strategy which has been developed with stakeholders to identify various measures to support employment for the Wylfa Newydd Power Station." Adding that it is not a certified document. By this definition the strategy is not intended to address wider implications for jobs and skills, mitigate impacts or to maximise employment for Anglesey residents.

6.1.1.2   The Jobs and Skills Strategy states: "HNP's education strategy focuses on three strands: inspire, engage and equip [listed below] however, no education strategy has been provided and there is very little firm information concerning commitments to support these aims:

a) inspire young people to study STEM subjects,

b) engage young people, key stakeholders and the local community about the future recruitment opportunities offered by HNP, and

c) equip young people with key employability skills".

6.1.1.3   The Mitigation Route Map lists 1,039 items, of which only two refer to education as 'issues' and only 19 contain a reference to education.

6.1.1.4   HNP refers to its Supply Chain Charter including a "series of measures…commencing in the primary education sector and tracking through to secondary and higher education establishments and partners". Further reference to this concept appears to be missing.

6.1.1.5   HNP acknowledges that "Labour forecasting is an ongoing activity and not an exact science", stating that "Planning new or additional training solely against original forecasts is a risky approach but this can be mitigated. Incorporating early joint working with contractors and programme controls will help establish a more likely level of need". These statements describe work that should already have been undertaken and included in the proposals.

6.1.1.6   The majority of documents provided by HNP concerning local jobs and skills issues concern people living within the DCCZ, a large area of north west Wales with none specific to Anglesey residents as a group. HNP does not provide information on how it plans recruitment practices on the Project to differentiate between Anglesey residents and others, if at all.

6.1.1.7   Estimates of how many workers are expected to be employed directly, by contractors and by subcontractors at each stage of the Project have not been provided. HNP states that during construction much of the employment will be via the supply chain, however details of how patterns of employment may differ between direct and indirect employment are not provided.

6.1.1.8   Proposals concerning training in non-construction related skills or school education are very limited indeed, and issues around teaching or teacher recruitment and retention are absent.

6.2 IACC requests and dates

6.2.1.1   In its response to the Stage 3 (PAC3) (letter from Gwynne Jones to Mr Hawthorn) IACC stated: "In summary the demand for skills evidence is unacceptably incomplete and further work is required. This information is required to allow the necessary and appropriate targeting of jobs and training to maximise opportunities and supply the labour HNP requires ahead of roles arising reducing the need for in-migration where roles could be filled by local labour whilst protecting existing employers and businesses". Further information requested in this letter included:

Information requested	Result
Detailed understanding of future skills gaps	Some information provided
What additional training is required from higher education, and further education to meet future demand by HNP	Some information provided
Detail of the requirement for additional skills in the immediate supply chain	Some information provided
Detail on the contracts available to local business	Not provided
More detail on the demand and supply for skills and qualifications.	Some information provided

Detail on the level and scope of support for improving facilities at secondary schools	Not provided
How HNP will run the Technical Apprenticeship Scheme over the lifetime of the construction Project, how many apprenticeship places will be created each year and will the number rise in line with peak demand for labour	Not provided
How HNP's efforts to add nuclear context to courses at University of Bangor, the £1m investment in the Engineering provision at Grwp Llandrillo Menai from Bangor to Llangefni and engagement with schools to encourage take up of STEM subjects fit in with HNP's wider skills / training strategy and when these further investments will be made.	Not provided
More information on any programmes or incentives to incorporate or re-train existing Magnox staff (or those recently left who still possess relevant skills). Clear proposals are needed in this respect.	Not provided
The precise remit and role of the [WNESS] brokerage service should be set out in order to give a consistent view on what is to be provided. Similarly how the other routes to employment are to be made operational should also be clearly set out with specific mechanisms, quantified targets, funding and other details including staffing.	Some information provided
Details of how HNP will work with partners to fund training including the scale of financial commitment to training and mechanisms to deliver.	Not provided

6.2.1.2   In its letter of 30.11.17 IACC stated that it required:

Information requested	Result
An Education Strategy [7.15]	Not provided
Confirmation as to when a detailed breakdown of the estimated number of jobs during the construction period will be made available. The phasing for workforce demand is key to understanding when which skills will be in demand. [7.5]	Not provided
Information concerning the supply and demand for skills and training [7.6]	Some information provided
An assessment of capacity within the existing training system [7.6]	Some information provided
Information on the training places to be provided by year, course and skill level [7.8]	Not provided
Detail on how large the problem of backfilling positions will be [7.8]	Not provided
How HNP will monitor requirements for backfilling and the frequency of this monitoring [7.8]	Not provided

Details in relation to the Service Hubs/Management Board [7.8]	Not provided
How the monitoring will trickle down to the supply chain [7.8]	Not provided
Confirmation as to what HNP's expectations of the role of the Employment & Skills Service are [7.8].	Not provided
IACC requires confirmation that the strategy pushes displacement/poaching as deep and late into the construction phase as possible [7.10]	Not provided
Further clarification in relation to local labour participation. [7.12]	Some information provided
Clarity on wages rates is required to understand the potential displacement effects. As wages on Anglesey are already low, the issue of displacement is genuine, and remains of concern to the Council and local businesses. [7.11]	Not provided

7 Gaps in information provided – Capacity and Capability of the Island's schools

7.1.1.1   The Mitigation Route Map lists 1,039 items, of which only two refer to education as 'issues' and only 19 contain a reference to education.

7.1.1.2   HNP's statements concerning 'expected' capacity of schools appears to focus on the physical facilities only and not to consider teachers and other staff.

7.1.1.3   It is likely that some of the dependents of migrant workers will not have English or Welsh as their first language and further information from HNP is required concerning numbers of workers with dependents who may be in this category.

7.1.1.4   HNP accepts responsibility in principle for providing capacity for these children to be educated and identifies the Community Impact Fund as the relevant funding source should support be needed suggesting conditions for providing funding that are not specified. The proposals do not address the challenge of providing the necessary teaching capacity for these people in any way.

7.1.1.5   HNP provides an estimate of 220 dependents of migrant workers only at the point of 'peak' construction, acknowledging that the actual figure will depend on the recruiting practices of contractors and subcontractors over which it does not have full control. It does not provide an estimate of the numbers at other points during the construction phase, or of the actual number of individual children involved that this may represent throughout the period.

7.1.1.6   HNP has also not assessed the level of displacement jobs, and this may be a cause of further inward temporary migration of families with school age dependents needing education.

7.1.1.7   For the operating phase HNP provides an on-going figure but no estimate is given for outage periods or for the decommissioning phase. Further information is needed concerning both phases.

7.1.1.8   There is no reference to the possibility of pupils having special needs or of the implications of this for capacity provision although this is likely during the construction phase.

7.1.1.9   There is a general commitment to mitigate the effect on the education system of children of incoming workers and provide funding, but no information is given concerning planning for this (other than monitoring) what form it would take or what level of financial provision would be made.

7.1.1.10   HNP identifies the Community Impact Fund as covering "spending on boosting school place numbers", and for funding "localised issues such as schools". However, no figures are given.

7.2 IACC requests and dates

7.2.1.1   In its letter of 30.11.17 IACC advised HNP that there is existing primary school oversubscription across the Island. The predicted increased demand on school places until 2025 requires implementation of proposals to mitigate against the Project's related employment led increased demand on the Education Authority's resources. [7.16]

7.2.1.2   In its letter of 30.11.17 IACC advised HNP that:

a) A full assessment of the Community Impact Report cannot be made until the IACC has a full understanding of how the workforce are to be managed. [8.17]

b) analysis of the current state of Anglesey and of individual Study Areas…is essential to understand the 'current state of play' in localities before their capacity/capability to accommodate/handle the impacts of the Project and other planned projects. [8.18]

8   DCO Obligations and requirements – preparing the Island's young people

8.1.1.1   HNP's commits to "investing in a skills infrastructure" during the Project and for IACC is it encouraging that HNP sees Anglesey is the "main area of focus" for education engagement.

8.1.1.2   It is stated that the Skills Fund "could include capital spending to support the curriculum", however there are no details given on what form this could take or of the amount identified for this purpose.

8.1.1.3   Document 8.17 Sustainability Statement: The Community Impact Fund could be used to address potential effects on education facilities [5.10.16]

8.1.1.4   Planning Statement Ref 8.1: In order to enhance local employment opportunities, HNP will establish a fund to support a range of education, training and employment initiatives relating to both the construction and operational phases of the project… which is covered by the Community Impact Fund. [7.4.57] pp169, 170

8.1.1.5   Jobs and skills Strategy Ref 8.3: HNP is committed to investing in a skills infrastructure that provides people from Anglesey and the surrounding counties with the skills they require to be deemed competent to work on the project – and also in areas where future displacement is likely to occur." [2.3.3]

8.1.1.6   Document 8.17 Sustainability Statement refers to a capital investment programme for all 5 secondary schools on Anglesey, but no further information is provided in its DCO submission. [5.9.4]

8.1.1.7   Statements on funding via a HNP 'Skills Fund' are encouraging and they refer to this funding "supporting" the operation of the WNESS (including outreach, work readiness training etc) and communication routes (including social media platforms) within the local community to enhance awareness of training and employment opportunities. However, the fund is referred to as "flexible" and it is not clear what the extent of this funding is, what the term "supporting" means (e.g. is

this part-funding), how it may change with time, or on what basis decisions would be made. The proposals state that a body called the 'Jobs and Skills Service' will be responsible for overseeing the WNESS but it is not clear what this refers to.

8.1.1.8 HNP's proposals refer to some support and funding for training facilities to date. References to working with partners to deliver training in future are unclear and not specific in terms of roles, financial contributions or the type of training.

8.1.1.9 Outreach to schools is proposed but its main purpose appears to be to: "communicate HNP's requirements for education and skills". There is reference to engagement with schools to "demonstrate commitment to wider issues i.e. community benefits" and to "support" wider stakeholder objectives.

8.1.1.10 In terms of scale, the proposals say that "HNP…will look to increase [its outreach activity, predominantly aimed at primary-aged children]". The level of increase proposed is not quantified.

8.1.1.11 HNP proposes to appoint two education officers (term time only) to "engage, deliver and train teachers to use and embed the [outreach] programme into their curriculum".

8.1.1.12 Under the heading "School Engagement" HNP states it will "target schools in priority geographical areas, engaging with all 5 Secondary Schools and 47 Primary schools on Anglesey". It is not clear what form this engagement may take or when it would occur.

8.1.1.13 HNP's proposals refer to "Continue engagement with schools through the 'Dyfodol/Futures' educational engagement programme", "Big Bang Cymru" and "STEM Ambassadors" however it is not clear what scale and form of support this represents by HNP. The documents state: "This engagement plan is available to all schools on the Isle of Anglesey".

8.1.1.14 The proposal documents refer to a number of initiatives that are already in place or in progress, chiefly concerning construction skills training and some work with schools, however no clear onward commitment to these is set out. IACC's proposals concern the Project as a whole.

8.1.1.15 HNP states that "Planning new or additional training solely against original forecasts is a risky approach but this can be mitigated…to establish a more likely level of need". Details of the likely level of need and sensitivity analysis of this data would be helpful to identify employment opportunities, training needs and probable negative impacts of displacement.

8.1.1.16 HNP provides estimates for employment of Anglesey residents at the 'peak' of overall employment during construction, giving a figure of 1,256 workers from Anglesey at this point but provides no estimate for levels employment of Anglesey residents before or after this point during construction, or at any time during the operational phase or of the number of vacancies this is expected to represent. Estimates of how many workers are expected to be employed directly, by contractors and by subcontractors at each stage of the Project would help assess the effectiveness of proposed mitigations involving those who are not directly employed by HNP. This lack of information concerning sensitivity of analysis and forecast estimates, particularly in many areas where there are external factors that create additional uncertainty, weakens stakeholder's ability to plan.

8.1.1.17 HNP's strategy for maximising local employment is unclear and mainly focuses on its WNESS proposals and on actions it has taken to date. This limits stakeholders' ability to make plans to maximise the potential for local employment across the whole of the Project.

8.1.1.18 HNP's proposals include an estimate of just 1260 Anglesey workers at the point of 'peak' construction despite Anglesey residents representing the most committed potential employees for Wylfa Newydd. There should be more ambitious targets for employment of Anglesey residents in both construction and operational phases and these should be underpinned by clear, detailed, timely commitments to funding to achieve them. Welsh Government and IACC provide large sums to support

education and training on which Wylfa Newydd will rely, and as a responsible business a fair and reasonable contribution from HNP is expected.

8.1.1.19 Based on IACC's evidence, measures to mitigate these positive and negative impacts include employment and procurement practices led and enforced by HNP throughout the supply chain together with a responsible contribution to investment in education and training that is fully accessible to a wide range of Anglesey residents. The measures include education and training proposals that mitigate the negative effects of displacement but there may be wider social and economic impacts that require other forms of mitigation or compensation.

8.1.1.20 Strengthening basic education is key to securing suitable employment for the widest range of people, both for the flow of young people entering the labour market each year, and for those adults who require training or retraining. This will ensure good preparation for low and medium skilled occupations and ensure the foundations are in place for further education and training in preparation for higher level STEM jobs. The same approach will help to mitigate the effects of displacement and the disruption to businesses that this can cause.

8.1.1.21 Support is also essential to ensure good access for all Anglesey residents to the specific training, apprenticeships and work experience opportunities that Wylfa Newydd requires at each stage, and this must be accompanied by recruitment practices that ensure that Anglesey residents can secure all good, stable jobs at Wylfa Newydd for which they meet the requirements.

9 DCO Obligations and requirements – Capacity and Capability of the Island's schools

9.1 HNP proposals

9.1.1.1 It is welcome that the Jobs and Skills Strategy states: "HNP's education strategy focuses on three strands: inspire, engage and equip:

- inspire young people to study STEM subjects,

- engage young people, key stakeholders and the local community about the future recruitment opportunities offered by HNP, and

- equip young people with key employability skills".

9.1.1.2 While HNP states it has tested its projections based on IACCs modernisation programme, this appears to be out of date and this needs to be reviewed. Since there will inevitably be uncertainty in the effects of modernisation and rationalisation plans on school facilities for a range of reasons (such as consultations, funding, legal obligations and constraints) a precautionary principle should apply in considering HNP's mitigation obligations to ensure that they are sufficient for all scenarios that are reasonably possible.

9.1.1.3 There is a general commitment to mitigate the effect on the education system of children of incoming workers and provide funding, but no information is given concerning planning for this, what form it would take or what level of financial provision would be made.

9.1.1.4 HNP identifies the Community Impact Fund as covering "spending on boosting school place numbers", and for funding "localised issues such as schools", however, no figures are given. HNP refers to "monitoring" and says that it will fund new capacity if:

a) it can be demonstrated that the Project creates a shortage in certain primary schools, and

b) the shortage results from workers who bring their children with them.

9.1.1.5   These are overly narrow and unworkable. For example, the requirement to demonstrate the cause of a shortage of school places by linking directly to an individual child of an incoming family is impractical and unrealistic. There are many factors affecting the supply and demand for school places at the level of individual places, and identifying a 1:1 relationship between a worker at Wylfa Newydd and the need for a specific additional school place will often not be possible. To illustrate this, a child of an incoming worker may be accommodated in a primary school with the result that the school reaches capacity for that year group; the following term a local resident may move within the catchment of the same school and their child of the same year group would no longer be able to be accommodated.

9.1.1.6   Monitoring is referred to, but the documents do not explain how monitoring could provide a workable response within a sufficient timescale.

9.1.2   Where specific funds or funding commitments are made

9.1.2.1   Community Impact Report Ref 8.23: "Should localised issues arise where applications are made for places in schools at capacity and IACC can demonstrate the nature of the resulting effect (e.g. temporary short-fall in funding, additional costs for appeals processes etc.) HNP will provide funding to address this via the Community Impact Fund" [2.3.47]. Repeated at 3.3.46, 4.3.35, and 5.3.33 and Planning Statement at [7.4.56]

9.1.2.2   C1-Socio-economics (Rev 1.0) Ref 6.3.1: Monitoring of school enrolment by the IACC. HNP will provide funding via CIF if issues arise [1.6.16]

9.1.2.3   SocioEconomics D3 Ref 6.4.3: "Community Impact Fund would provide funding for localised issues, such as schools and leisure facilities. Community Impact Fund (secured through planning/Section 106 Obligations). Funding would be released subject to the satisfaction of a number of conditions, yet to be agreed". [Table 3-6 3.6.4]

9.1.2.4   Sustainability Statement Ref 8.17: The Community Impact Fund could be used to address potential effects on education facilities [5.10.16]

9.1.2.5   Planning Statement Ref 8.1: In order to enhance local employment opportunities, HNP will establish a fund to support a range of education, training and employment initiatives relating to both the construction and operational phases of the Project… which is covered by the Community Impact Fund. [7.4.57] pp169, 170

9.1.2.6   Jobs and skills Strategy Ref 8.3: HNP is committed to investing in a skills infrastructure that provides people from Anglesey and the surrounding counties with the skills they require to be deemed competent to work on the Project – and also in areas where future displacement is likely to occur." [2.3.3]

9.1.2.7   Mitigation Route Map Ref 8.14 states: HNP will fund a peripatetic teacher service (pro-rata as detailed below) that would support current immersion education capacity on Anglesey (and potentially Gwynedd if required) across primary and secondary schools. Funding will be available so that two language immersion teachers will be available to work with pupils at the start of the construction. The level of this service will be proportionate to the number of workers that will bring their families and increase or decrease in response to demand. The number of workers bringing families will be carefully monitored through collection of data.

9.2 How proposed mitigations relate to HNP's proposals

9.2.1.1   HNP accepts responsibility for mitigating the impacts of additional numbers of dependents of workers coming onto the Island and requiring education and identifies the appropriate fund. HNP's proposals are to monitor the need for additional school places, but its assessment is that none are likely to be needed. In relation to the impact of incoming learners without Welsh language skills, a low level of teaching support is proposed, again with monitoring.

9.2.1.2   IACC proposes a more planned and pre-emptive approach, based on ensuring the maximum level of additional provision is provided in good time in a way that is cost effective both for HNP and in relation to IACC's ongoing planning for school modernisation and improvement. Since these plans are necessarily made in a phased way, the final mitigation will be a mix of definite measures and provisional measures, however because many of the measures cannot be fully defined at the outset, a timetable must be devised for finalising them at the appropriate time to ensure provision is ready for learners.

9.2.1.3   In relation to Welsh language immersion services, IACC proposes an approach that is more realistic in terms of need, comprehensive in terms of impacts and resilient to deal with uncertainties. IACC's position also takes into account relevant external factors such as demographic trends and modernisation.

9.3 Dependency on further detail from HNP

9.3.1.1   To determine appropriate levels of contribution to mitigate both facilities and staffing issues, it will be necessary for HNP to provide more information about how it has calculated the range of possible extra places and the factors affecting this. It should also recognise the wider obligations and responsibilities local authorities have to take a planned approach to rationalising capacity, managing school budgets and maintaining capacity for short term local variation in demand.

9.3.1.2   Further information from HNP will help identify a projection of the expected numbers of dependents of migrant workers arising both from employment Wylfa Newydd and displacement. A planned approach to putting in place the required mitigation for this projected number and their anticipated needs in good time is necessary.

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[i] Oxford Economics. Demand for Skills and Supply of Local People (2018)
[ii] https://www.ucas.com/file/177126/download?token=Pjpysfoc

iii http://www.centreforcities.org/reader/great-british-brain-drain/migration-students-graduates/11-graduate-retention-rate-city-201314-201415/

iv Oxford Economics: Demand for Skills and Supply of Local People (2018)

v http://www.arts.wales/arts-in-wales/creative-learning/the-lead-creative-schools-scheme

vi http://www.jsavage.org.uk/ite/how-much-does-it-cost-to-train-one-teacher/

vii http://www.stimulatingphysics.org/

viii https://futureskills.pearson.com/research/assets/pdfs/technical-report.pdf

ix https://www.enterprise-development.org/what-works-and-why/evidence-framework/link-between-employment-and-economic-growth/ Accessed September 2018

x https://read.oecd-ilibrary.org/education/education-at-a-glance-2018/united-kingdom_eag-2018-70-en#page3

xi http://hanushek.stanford.edu/sites/default/files/publications/Hanushek%2BKimko%202000%20AER%2090%285%29.pdf

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xiii http://www.oecd.org/unitedkingdom/FINAL%20Improving%20Schools%20in%20Wales%20-%20An%20OECD%20Perspective%20-%20with%20cover.pdf
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xiv https://gov.wales/docs/det/publications/150407-nuclear-capability-en.pdf

xv https://www.tandfonline.com/doi/full/10.1080/09243453.2018.1484776#

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xvii http://buysocialni.org/

xviii https://www.estyn.gov.wales/sites/default/files/documents/A%20Learning%20Inspectorate%20-%20en%20-%20June%202018.pdf

xix https://www.estyn.gov.wales/sites/default/files/documents/School%20size%20and%20educational%20effectiveness%20-%20December%202013.pdf

xx https://www.estyn.gov.wales/sites/default/files/documents/The%20quality%20of%20new%20build%20in%20Further%20Education%20and%20its%20impact%20on%20learners%20-%20June%202010.pdf

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xxii http://www.oecd.org/pisa/effective-teacher-policies-9789264301603-en.htm

xxiii http://eprints.whiterose.ac.uk/134531/3/Practical_independent_research_projects_in_science_a_synthesis_and_evaluation_of_the_evidence_of_impact_on_high_school_students.pdf

xxiv https://www.estyn.gov.wales/sites/default/files/documents/Improving%20teaching.pdf

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