CHAMPIONS FOR WIND: FINAL PROJECT EVALUATION REPORT

Autumn 2020 – Summer 2024

Report Date – December 2024

Contents

Acknowledgements

This evaluation project was undertaken collaboratively by a number of different parties and our thanks go out to all of the Teacher Champions and children involved in the varied interventions at the following institutions:

Bydales Academy
Lawrence Jackson School
Redcar and Cleveland College
Prior Pursglove College
Egglescliffe School
Mo Mowlam Academy
St Peter's Catholic College
Sacred Heart School

The project was directed by Mike Cargill and Richard Hurst

This evaluation was carried out by an evaluation team at Teesside University between September 2020 and July 2024. The team consisted of:

Dr Lee Copping
Dr Nicholas Gray
Dr Helen Moore
Hannah Poulter

The project was funded by the Sofia Offshore Wind Farm development (RWE)

Ethical clearance was granted by the School of Social Sciences, Humanities and Law Research and Ethics Sub Committee, Teesside University.

Executive Summary

This evaluation was commissioned by the Sofia Offshore Wind Farm as part of an evaluation of funded educational interventions in local secondary schools designed to educate and inform pupils about the renewable energy sector, specially, the construction of the Dogger Bank wind farm off the Northeastern coastline. Participating institutions were incentivised to develop their own programmes aimed at children between the ages of 13 and 18 years old. This took place annually between 2020 and 2024. The impact of the programme was then evaluated. This evaluation is a follow up to a previous programme of activity that completed in 2014 (see Bugler, 2014) with the hope that the findings can be replicated.

The appointed research team from Teesside University were tasked with conducting a mixed methods study to evaluate the *Champions for Wind* project; a scheme designed to help children understand the broader impact of the renewable energies sector on the local economy through innovatively delivered projects integrated into school their curriculum. The overarching aim was to provide an evidence base to help understand aspects of the scheme's success and to consider its impact on the knowledge and interest of young people living in the Tees Valley with regards to the renewable energy sector. The programme evaluation consisted of a pre-test/post test survey of knowledge and interest on renewables occurring over four consecutive years. In the final year, a focus group of pupils participating in the programme and some interviews with staff champions was also conducted.

191 students took part in the pretest/post-test section of the evaluation. The results suggested that across the project's lifespan, pupils engaged in the programme had significant increases in both their knowledge of the offshore wind industry and Dogger Bank development and their interest in learning more about the industry and careers within it. There were no significant differences by sex although effect sizes (which were small) did suggest a slight bias for boys towards items examining interest. Most effect sizes were close to zero. Both boys and girls improved on all measures pre and post test. When recalling careers related to the wind industry, there were slightly more STEM based and technical roles recalled at post-test than in pretest, whereas when asked to recall personal qualities relating to working in the wind industry, there were few differences in

recalled traits between the pre and post-test. The student focus group analysis largely reaffirmed these claims.

Teachers (Champions) were generally positive about the programme at large and felt the pupils valued the learning experience and the opportunity to network amongst themselves to share experiences and ideas around the development of the materials. There was also the strong sense that pupils were learning about something that was very local and provided an affirmation that there are STEM based industries developing in their communities.

In conclusion, the evaluation (and the one prior to it) suggests that this form of educational intervention does increase knowledge and interest in the locally emergent renewables sector and has a positive impact on pupils, teachers and schools engaged in the programme.

Student's Perspective – Survey

Methodology

Student's perspectives were assessed via a pre-test/post-test survey that had been adjusted following a previous iteration of this evaluation (Bugler, 2014). Please see appendices 6 and 7 for a copy of the actual survey items. As in the previous evaluation, the items were separated into three broad themes; knowledge, interest and preconceptions. The key change in the items focusses on replacing the focus on *Dogger Bank* with the *Sofia Offshore Wind Farm*.

The survey included 20 questions covering the three themes including:

12 likert questions focusing on knowledge.
6 likert items focusing on interest.
2 free response questions focusing on preconceptions.

The survey was delivered via an online platform (JISC) and took approximately 20 minutes to complete. Completion of the survey took place in classroom time at each participating school site.

Ethical approval was granted by the School of Social Sciences, Humanities and Law Ethics Sub Committee (REF - 2020 Nov 1717 Poulter). Consent and assent to participate came at three levels. Firstly, participating schools agreed to include their pupils as part of the evaluation. They agreed to contact parents and collect parental consent for each participating pupil. Finally, assent was attained from each participating pupil when they completed each survey and school champions ensured that only those with the parental consents in place could participate.

Consent documentation can be seen in appendices 5, 6 and 7.

Participants

Participating schools were briefed at the beginning of each academic year that outlined timelines, the ethical proceedings and the nature of the survey.

There were four rounds of data collection over four academic years. Table 1 summarizes the participant numbers. All participants were aged between 13 and 18 years old. Participants were asked to complete a unique code (based on replicable constants about themselves) which was used to match them across data waves.

Table 1: Recruitment summary between Academic Years 20/21-23/24

	Pre Test			Post Test			Pre/Post Participants
	Schools	N	M/F	Schools	N	M/F	N M/F
2020/21	2	13	7/5	0	0	0/0	0
2021/22	3	48	34/13	2	69	40/28	21 (14/7)
2022/23	2	12	11/0	1	6	5/1	0
2023/24	2	19	13/4	3	24	18/6	5 (4/1)
Total	6	92	65/22	6	99	63/35	26 (18/8)

Participation in the pre/post test routine was low (approximately 14% of the total sample appear in both sets), occurred in only two of the four years and in each year, involved only one school.

Statistical Analysis

Due to the sampling limitations, the analysis examining change in items is done as both an independent and repeated measures test to help determine the impact of the program. As such, where possible, each item has two effect size calculations go give a sense of the size of any actual change.

Statistical methods follow the previous report (use of t-tests) to give a statistical index of change. Due to the size of the sample and nature of the data, these were performed using a 1000 sample bootstrap so that robust 95% confidence intervals could be examined alongside significance tests. Effect sizes were also calculated to allow comparison across the analysis (using a corrected Hedge's g rather than Cohen's d). Due to the small numbers for each school within each year, school and year effects were not considered as part of this analysis. As this was an item level analysis, probability values used to judge significance were corrected for multiple comparisons using a Bonferroni correction (which in this case suggested a p value of <.003).

Measures themselves are not examined for psychometric properties (e.g. reliability) as the evaluation is focusing on responses to individual items, not underlying latent dimensions. While

the report refers to knowledge and interest as concepts, they are not treated as some form of aggregated dimension.

Table 2: Tests of difference for those completing both pre and post measures (N=26)

Question	Pre M(SD)	Post M(SD)	Diff	p	Lower 95% CI	Upper 95% CI	Hedges g
I know what renewable energy is.	3.96 (.75)	4.38 (.71)	.42	.002	-.667	-.167	-.616
I know how offshore wind farms work.	3.08 (.78)	3.92 (.88)	.83	.000	-1.167	-.500	-.768
The different careers in the offshore wind industry.	2.96 (1.08)	3.83 (.96)	.88	.000	-1.292	-.458	-.786
The Sofia Offshore Wind farm.	2.67 (1.05)	3.67 (1.13)	1.00	.001	-1.542	-.465	-.684
The careers available through the Sofia Offshore Wind farm.	2.88 (1.15)	3.71 (1.08)	.83	.003	-1.377	-.250	-.601
Developing and gaining permission from the authorities to build an offshore wind farm.	2.54 (.93)	3.46 (1.06)	.92	.000	-1.333	-.500	-.806
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	2.75 (.99)	3.50 (.93)	.75	.006	-1.250	-.292	-.534
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	2.50 (.93)	3.50 (1.06)	1.00	.000	-1.375	-.625	-.820
Developing and gaining permission from the authorities' to build an offshore wind farm.	2.92 (1.18)	3.42 (1.02)	.50	.018	-.875	-.125	-.438
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	2.71 (1.12)	3.29 (1.00)	.58	.020	-1.042	-.125	-.429
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	3.00 (1.06)	3.42 (.93)	.42	.019	-.750	-.083	-.434
Rate how much you know about the qualifications and experience needed to work in the offshore wind industry.	2.71 (.81)	3.25 (.90)	.54	.002	-.792	-.292	-.629

Rate how much you think you would like to work in the offshore wind industry.	2.13 (1.15)	2.92 (1.32)	.79	.001	-1.208	-.375	-.721
Learn more about offshore wind farms.	2.79 (.98)	3.29 (.96)	.50	.002	-.750	-.292	-.620
Learn more about the offshore wind industry	2.83 (1.05)	3.42 (.97)	.58	.004	-.917	-.292	-.579
Learn more about careers in the offshore wind industry.	2.92 (1.02)	3.46 (.93)	.54	.001	-.875	-.208	-.672
Learn more about the Sofia Offshore Wind farm	2.79 (.72)	3.29 (.96)	.50	.001	-.750	-.250	-.669
Learn more about careers at the Sofia Offshore Wind farm	2.96 (.96)	3.29 (.86)	.33	.029	-.625	-.042	-.395

Using the bootstrapped confidence intervals, Table 2 shows that across all 18 items, there was a statistically significant increase in knowledge between the pre and post test items. Using probability values alone and correcting for multiple comparisons (reducing p to <.003), 11 of the 18 effects are still significant. Statistical significance aside, responses to all knowledge and interest items increased in magnitude with effect sizes ranging from .395 (the equivalent of about a third of a point) to .820 (approximately equivalent to one point). This would suggest that the intervention had a non-trivial impact on knowledge and interest in renewables.

Table 3: Independent Tests of Difference for Pre and Post Test Samples

Question		Pre Test	Post Test	Diff	p	Hedges g	95% LCI	95% UCI
I know what renewable energy is.	N	88	95					
	M	3.88	4.53	.65	<.001	-.76	-1.05	-.46
	SD	.969	.742					
I know how offshore wind farms work.	N	88	95					
	M	2.83	3.82	.99	<.001	-1.02	-1.32	-.71
	SD	.950	.989					
The different careers in the offshore wind industry.	N	88	95					
	M	2.50	3.85	1.35	<.001	-1.30	-1.62	-.98
	SD	1.104	.967					
The Sofia Offshore Wind farm.	N	88	95					
	M	2.44	3.75	1.30	<.001	-1.12	-1.43	-.81
	SD	1.249	1.062					
The careers available through the Sofia Offshore Wind farm.	N	88	95					
	M	2.36	3.73	1.36	<.001	-1.19	-1.50	-.87
	SD	1.261	1.026					
Developing and gaining permission	N	88	95					
	M	2.32	3.14	.82	<.001	-.72	-1.01	-.42

from the authorities to build an offshore wind farm.	SD	1.130	1.145					
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	N	88	95					
	M	2.36	3.41	1.05	<.001	-.95	-1.25	-.64
	SD	1.106	1.096					
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	N	88	95					
	M	2.34	3.36	1.02	<.001	-.92	-1.22	-.61
	SD	1.103	1.110					
Developing and gaining permission from the authorities' to build an offshore wind farm.	N	88	95					
	M	2.36	3.27	.91	<.001	-.76	-1.06	-.46
	SD	1.224	1.171					
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	N	88	95					
	M	2.22	3.38	1.16	<.001	-1.05	-1.35	-.74
	SD	1.066	1.141					
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	N	88	95					
	M	2.36	3.35	.98	<.001	-.87	-1.17	-.57
	SD	1.157	1.099					
On a scale of 1 (nothing) to 5 (a lot), rate how much you know about the qualifications and experience needed to work in the offshore wind industry.	N	88	95					
	M	2.40	3.40	1.00	<.001	-1.05	-1.36	-.74
	SD	.941	.961					
On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to work in the	N	88	95					
	M	2.51	2.85	.34	.062	-.28	-.57	.01
	SD	1.145	1.304					

offshore wind industry.								
On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to Learn more about offshore wind farms	N	88	95					
	M	3.41	3.33	-.08	.655	.07	-.22	.35
	SD	1.256	1.241					
Learn more about the offshore wind industry - On a scale of 1 (not at all) to 5 (a lot), rate how interested you would be to:	N	88	95					
	M	3.33	3.25	-.08	.675	.06	-.23	.35
	SD	1.275	1.203					
On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to Learn more about careers in the offshore wind industry	N	88	95					
	M	3.31	3.36	.05	.78	-.04	-.33	.25
	SD	1.244	1.228					
On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to Learn more about the Sofia Offshore Wind farm	N	88	95					
	M	3.34	3.19	-.15	.385	.13	-.16	.42
	SD	1.173	1.179					
On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to Learn more about careers at the Sofia Offshore Wind farm	N	88	95					
	M	3.31	3.28	-.02	.903	.02	-.27	.31
	SD	1.197	1.310					

Treating the data as two independent samples at two separate time points (the beginning and the end of the program, while less useful, may still give us some indication about levels of knowledge and interest.

Using the bootstrapped confidence intervals, Table 3 shows that across 12 of the items, there was a statistically significant increase in knowledge between the pre and post test samples. Using probability values alone and correcting for multiple comparisons (reducing p to <.003), the same 12 of the 18 effects are still significant. These 12 items were all knowledge items. None of

the interest items showed statistically significant increases. Knowledge increases differed between the two groups between .72 (around half a point) and 1.30 (about 1.3 points). Interest scores fluctuated around zero change (some showing a slight increase and some showing a slight dip).

Sex Differences

Following the previous report, sex differences on the answers to questions were explored (at pre and posttest). Table 4 shows the descriptives for males and females at pre and posttest. A correction for multiple comparisons was implemented across the 36 tests and p was evaluated to be significant if <.001. No difference was significant to this threshold. Effect sizes were generally small (and operated in both male and female directions). It may be worth noting that while not statistically significant, interest questions seem to have larger effect sizes favoring boys (whereas knowledge items appear to largely close to zero.

Table 4: Descriptive Statistics split by sex for all items

	Pre Male (N=65)		Pre Female (N=22)		Pre Diff		Post Male (N=63)		Post Female (n=35_		Post Diff	
Question	Mean	SD	Mean	SD	Diff (M-F)	g	Mean	SD	Mean	SD	Diff (M-F)	g
I know what renewable energy is.	3.94	0.98	4.00	0.82	-0.06	-0.06	4.49	0.74	4.57	0.74	-0.08	-0.11
I know how offshore wind farms work.	2.95	0.98	2.68	0.84	0.27	0.29	3.78	0.99	3.85	0.99	-0.08	-0.08
The different careers in the offshore wind industry.	2.62	1.01	2.50	1.22	0.12	0.11	3.79	0.90	3.80	1.13	-0.01	-0.01
The Sofia Offshore Wind farm.	2.54	1.30	2.45	1.06	0.08	0.07	3.75	0.93	3.63	1.29	0.12	0.11
The careers available through the Sofia Offshore Wind farm	2.43	1.20	2.45	1.41	-0.02	-0.02	3.69	0.88	3.69	1.30	0.01	0.01
Developing and gaining permission from the authorities to build an offshore wind farm.	2.44	1.17	2.41	1.14	0.03	0.02	3.13	1.10	3.09	1.27	0.04	0.04
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	2.42	1.10	2.45	1.18	-0.03	-0.03	3.38	1.07	3.37	1.21	0.01	0.01
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	2.40	1.12	2.36	1.05	0.04	0.04	3.38	1.04	3.32	1.22	0.06	0.05

Developing and gaining permission from the authorities' to build an offshore wind farm.	2.46	1.20	2.32	1.13	0.14	0.12	3.16	1.07	3.37	1.37	-0.21	-0.18
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	2.35	1.12	2.18	0.96	0.17	0.16	3.25	1.11	3.51	1.25	-0.26	-0.22
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	2.45	1.16	2.41	1.05	0.04	0.03	3.32	1.03	3.31	1.25	0.00	0.00
How much you know about the qualifications and experience needed to work in the offshore wind industry.	2.54	1.02	2.32	0.78	0.22	0.23	3.51	0.91	3.09	1.04	0.42	0.44
How much you think you would like to work in the offshore wind industry.	2.78	1.15	1.95	0.95	0.83	0.74	3.08	1.29	2.49	1.17	0.59	0.47
Learn more about offshore wind farms	3.57	1.17	3.09	1.23	0.48	0.40	3.52	1.18	2.94	1.26	0.57	0.47
Learn more about the offshore wind industry	3.40	1.21	3.23	1.27	0.17	0.14	3.38	1.11	2.97	1.32	0.41	0.34
Learn more about careers in the offshore wind industry.	3.42	1.18	3.27	1.12	0.14	0.12	3.49	1.06	3.17	1.44	0.32	0.26
Learn more about the Sofia Offshore Wind farm	3.45	1.14	3.32	0.89	0.13	0.12	3.33	1.08	3.03	1.32	0.30	0.26
Learn more about careers at the Sofia Offshore Wind farm	3.39	1.23	3.27	0.83	0.12	0.10	3.44	1.16	3.00	1.48	0.44	0.34

An analysis on the smaller matched sample was conducted to look at whether there were increases in knowledge and interest for both boys and girls. Table 5 illustrates the results.

Table 5: Descriptive Statistics split by sex for all items for pre/post test participants.

	Pre Males			Post Males				Pre Females			Post Females			
	N	Mean	SD	N	Mean	SD	Diff	N	Mean	SD	N	Mean	SD	Diff
I know what renewable energy is.	18	4.00	0.767	18	4.39	0.608	0.389	8	4.00	0.756	8	4.50	0.926	0.50
I know how offshore wind farms work.	18	3.17	0.857	18	3.78	0.878	0.611	8	3.13	0.641	8	4.13	0.835	1.00
The different careers in the offshore wind industry.	18	3.00	0.970	18	3.89	0.758	0.889	8	2.88	1.246	8	3.63	1.302	0.75
The Sofia Offshore Wind farm.	18	2.67	1.085	18	3.67	1.085	1.000	8	2.88	0.991	8	3.75	1.282	0.88
The careers available through the Sofia Offshore Wind farm	18	2.78	1.003	18	3.72	0.958	0.944	8	3.13	1.356	8	3.63	1.302	0.50
Developing and gaining permission from the authorities to	18	2.56	0.984	18	3.44	0.922	0.889	8	2.75	0.886	8	3.50	1.309	0.75

build an offshore wind farm.														
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	18	2.67	1.085	18	3.50	0.985	0.833	8	3.25	0.886	8	3.38	0.744	0.13
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	16	2.44	1.031	18	3.50	0.985	1.063	8	2.63	0.744	8	3.50	1.195	0.88
Developing and gaining permission from the authorities' to build an offshore wind farm.	18	3.00	1.237	18	3.39	0.916	0.389	8	2.88	0.991	8	3.50	1.195	0.63
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	18	2.72	1.227	18	3.28	0.958	0.556	8	2.88	0.835	8	3.38	1.061	0.50
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	18	3.00	1.085	18	3.50	0.857	0.500	8	3.00	0.926	8	3.25	1.035	0.25
How much you know about the qualifications and experience needed to work in the offshore wind industry.	18	2.67	0.907	18	3.22	1.003	0.556	8	2.75	0.463	8	3.13	0.641	0.38
How much you think you would like to work in the offshore wind industry.	18	2.28	1.227	18	2.89	1.278	0.611	8	1.75	0.886	8	2.75	1.488	1.00
Learn more about offshore wind farms	18	3.00	0.970	18	3.50	1.043	0.500	8	2.50	0.926	8	3.00	0.535	0.50
Learn more about the offshore wind industry	18	3.00	1.029	18	3.50	0.985	0.500	8	2.50	0.926	8	3.25	0.886	0.75
Learn more about careers in the offshore wind industry.	18	2.83	1.098	18	3.50	0.985	0.667	8	3.25	0.707	8	3.38	0.744	0.13
Learn more about the Sofia Offshore Wind farm	18	2.83	0.857	18	3.39	0.979	0.556	8	2.88	0.354	8	3.13	0.835	0.25
Learn more about careers at the Sofia Offshore Wind farm	18	3.00	1.029	18	3.39	0.916	0.389	8	3.00	0.756	8	3.13	0.641	0.13

After implementing a correction for multiple comparisons, no one pairing was statistically significant ($p<.001$). Almost all were significant to $p<.05$ however which suggests that sample

size is the issue here. All differences are positive for both boys and girls, suggesting that interest and knowledge increased over the course of the intervention.

Correlations between pre and post test responses

In keeping with the previous intervention, the strength of the relationship between answers on each question pre and posttest are illustrated in Table 6.

Table 6: Correlations between all items pre/post test

Question	N	Correlation	p
I know what renewable energy is.	26	.608	.000
I know how offshore wind farms work.	26	.145	.239
The different careers in the offshore wind industry.	26	.443	.012
The Sofia Offshore Wind farm.	26	.200	.164
The careers available through the Sofia Offshore Wind farm	26	.278	.085
Developing and gaining permission from the authorities to build an offshore wind farm.	26	.397	.022
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	26	-.049	.407
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	24	.307	.072
Developing and gaining permission from the authorities' to build an offshore wind farm.	26	.509	.004
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	26	.255	.104
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	26	.565	.001

How much you know about the qualifications and experience needed to work in the offshore wind industry.	26	.541	.002
How much you think you would like to work in the offshore wind industry.	26	.650	.000
Learn more about offshore wind farms	26	.680	.000
Learn more about the offshore wind industry	26	.533	.003
Learn more about careers in the offshore wind industry.	26	.684	.000
Learn more about the Sofia Offshore Wind farm	26	.661	.000
Learn more about careers at the Sofia Offshore Wind farm	26	.611	.000

The analysis suggests that all items are positively correlated with each other except for the knowledge item on understanding how an offshore windfarm is constructed (which has no significant relationship between the time points). Of the other 17 items, once corrected for multiple comparisons, 10 of the items are significantly and positively related ($p<.003$). Most relationships are moderate in strength. While there is no singular linear increase in knowledge and interest overall, it does suggest that the interventions do promote increases to knowledge and interest across the piece and that the rate of increase in each is quite variable from pupil to pupil.

Additional Questions

In the pre and post programme questionnaire, all pupils were asked two free response questions which were designed to pick up on the preconceptions of students.

The first focused on assessing their knowledge of careers needed in the offshore industry. Many types of jobs were suggested by the pupils, the majority of them being centered around science and engineering (including marine biologist, mechanical and electrical engineers and technicians, environmental engineers, mathematicians and geologists). Other careers were included however, featuring job types in the construction industry (builders, site managers, welders, plumbers, project managers, surveyors and supervisors), support services (health and safety

operatives, accountants, lawyers, quality controllers and maritime services (sailors, ships captains, divers).

At post programme, there were similar jobs recurring but the inclusion of more specific ones also featured (particularly engineering roles focusing on things like construction of turbines, blades etc. The majority of jobs noted by pupils would still be classed as STEM based roles however.

The second question focused on personal qualities that pupils think might be important to work in the offshore wind industry. Pupils were asked to list up to five such qualities. 70 responded pre programme and 67 post programme. The most common were traits centering around Teamwork, Problem Solving, Confidence, Determination, resilience, leadership and a strong work ethic. These were common responses at both pre and post programme.

Pupil Evaluation

In the post programme questionnaire, pupils were asked two additional questions around the segments of the evaluation they enjoyed the most and the least to get a sense of what could be perhaps improved overall, or to share any best practice. Most comments were very brief and lacked detail but there were some commonalities.

For what they enjoyed the most, there were 68 respondents and the most common responses focused on practical elements, particularly around building models of wind turbines. Facility tours were also well received as was learning about the sector generally.

For what was enjoyed the least there were only 57 respondents and several of them responded with nothing. The responses were more varied, and nothing consistently stands out as an issue common to the programme generally. The most general comments focused on level of writing, the learning of some complicated content the focus on some mathematical concepts.

Pretest – Posttest Summary

The gathered evidence from the programme suggests that curricular interventions focused on local renewable industries can lead to increases in knowledge and interest in the renewables

sector in pupils. These gains are largely independent of sex and while they do vary across pupils, on the whole, do lead to measurable increases within these two domains.

Learner perspectives: Renewable Energy Focus Group

Introduction

Part of the evaluation entailed gathering the thoughts and opinions of the learners as they engaged in the curriculum interventions planned by the champions. At the end of the fourth year of interventions, a focus group was conducted on a small group of pupils in the summer of 2024.

Method

A focus group was delivered with students (n=8) in year 8 and supported by one staff member, led by two researchers (HP & HM) in a delivery school involved in the program. Data was analysed using narrative synthesis. The questions asked at the focus group are available in appendix 2.

Results

This analysis presents the results of a focus group discussion with students who participated in the wind farm education intervention. The qualitative findings are organised into seven overarching themes, supported by verbatim quotes from the participants.

Understanding Renewable Energy Benefits

The focus group revealed that participants gained a clearer understanding of the benefits of renewable energy, emphasising its sustainability and environmental advantages compared to fossil fuels.

"Renewable energy is like sustainable and it doesn't harm the environment, but like non-renewable energy can... it's not there forever and has a big impact on our environment." (Student 2)

Engagement Through Interactive Learning

The programme employed diverse teaching methods, including interactive sessions,

assessments, and visual aids. These activities were instrumental in fostering active learning and reflection among the participants.

"At the start of the project, we went into the computer room and filled out a form saying what we knew about Sofia Wind Farm. At the end, we did it again to show what we'd learned." (Student 2)

Expanded Awareness of Career Opportunities

Students were introduced to a range of career paths within the renewable energy sector. For many, this was their first exposure to the diversity of roles associated with wind farms, including engineering, research, and maintenance.

"We learned like there's different jobs on the wind farms, like building them and helping repair them." (Student 6)

Appreciation of Renewable Energy's Impact

Participants expressed enthusiasm for learning about the large-scale impact of renewable energy. They were particularly intrigued by the scale of wind farm operations and their contributions to sustainability.

"I liked learning how much our homes cost to power and that Sofia Wind Farm can provide energy for 1.3 million homes—it's massive!" (Student 8)

Connection to Local Sustainability Efforts

The proximity of the wind farm to the local community fostered a tangible connection to the project. Participants expressed pride in the environmental progress visible in their surroundings.

"It makes you feel good 'cause we know there's something better in place than harming the environment." (Student 2)

Mixed Reception to Assessments

While most activities were well-received, some participants voiced frustration with assessment tasks designed to measure their learning progress.

"Probably the test, I didn't like doing that... the online one where we worked out how much we knew before and after." (Student 6)

Future Integration of Renewable Energy Education Across Subjects

The programme demonstrated potential for interdisciplinary connections. Plans to incorporate the wind farm project into history lessons and career discussions highlight its broader educational value.

"Year 9, you're gonna be revisiting this when we look at history in the local area, and careers—we'll do more career talks with representatives from Sofia Wind Farm."

Conclusions

The focus group findings underscore the effectiveness of the programme in enhancing students' understanding of renewable energy, fostering interest in related careers, and connecting the topic to their local community. However, the feedback on assessments highlights the need to balance engagement with evaluation. Future iterations of the programme should build on the positive outcomes and integrate the topic across subjects to maximise its educational impact.

Interviews with "Champions"

The final phase of the evaluation involved a series of interviews with some of the teacher champions that had planned and implemented the interventions over the programme period. X champions took part during the summer of 2024. A copy of the interview questions is available in appendix 1.

Analysis

Data from the interviews was analysed using narrative synthesis.

Overall, the participating staff were very positive about the programme and the way it operated with several key strengths highlighted.

Firstly, staff were positive about the local contextual relevance of the scheme. Pupils learned about a locally developing renewables industry and older pupils were able to reflect on potential employment opportunities when thinking about future career development and direction. Secondly, the scheme provided several opportunities to meet and share best practice with champions at other institutions developing similar interventions.

There were a few challenges highlighted during the course of the interviews. The most important one centred around creating a way of blending the programme into the curriculum. This could often be quite difficult when there were other competing demands on class curriculum time. As a subsidiary issue to this, there was also the issue of getting wider "buy in" across the whole organisation. As previously discussed, some of this came down to time factors, particularly when there are other demands on classroom time.

All interviewees were very warm about the programme and keen to emphasise the positives. A strong emergent theme was a positive sense that pupils were learning about a locally developing industry and, in at least one case, something that they could see from their school, and that learning about it gave them a sense that it was something that "*happens around here*". There's a sense that learning about the industry and science behind it is an early positive message about the place that the young people live, it's future and the possibly opportunities.

> *"the biggest benefit was them seeing what is available locally….".*

Unsurprisingly, all the school and college staff appreciated the financial contribution, and some believed the programme would not have been possible without it.

> *"we wouldn't have been able to have done what we did without it…. It allowed us to buy equipment that we wouldn't have done otherwise, but actually what it also did was it allowed us to show the benefit of doing the projects the way we did, which actually then meant we were able to secure some extra funding."*

“we had one of the students that completed that project actually went to Teesside University to study electronic engineering. And utilise that as part of their interview and application. We like to think it played a part in them getting their place on their course”

There were different approaches to integrating the programme into the wider curriculum. For pupils approaching GCSE years, the school curriculum is more prescriptive, and the programme was more likely to be “stand alone” (it became more challenging to integrate into regularly scheduled curriculum time). Beyond the secondary school years, one participating FE college attempted to integrate the programme into the curriculum with the design of a working model of a wind turbine (which is something that was supported by the positive comments highlighted in the post programme survey).

In this context of different levels, demands on classroom time, school and college staff liked the flexibility they had to decide how best to integrate the programme into the curriculum. At the same time, there was a feeling that the pre-existing materials available for the programme where very good but were largely tailored to secondary school aged pupils. While this was beneficial to most participating champions, it meant more work on curriculum development for FE staff.

As mentioned previously, participating champions appeared to value the opportunity to meet with champions from other educational institutions, to share experiences of the programme and ideas around best practice.

“What I really liked was the sharing of ideas. I appreciate it takes time out of People's Day, but when we would get together as a group of. Educators and talk about what we were working on, things that were going on, things that weren't, that was really useful. And I thought that was really good. That kind of collaboration.”

One risk around the programme is that the learning and “buy in” is embedded with the champions who are not always able to get time with classes where there are other demands on the time and the programme does not necessarily align with the pre-existing curriculum.

“trying to get the time with the classes was really difficult, so trying to then fit it in because what I designed wasn't based around pre-existing curriculum, it was based from the

curriculum but was an extra activity… and getting that support internally… was quite difficult"

The final question in the interview was related to the relationship with the Tees Valley Combined Authority. The programme was not closely associated in champions' minds with Tees Valley Combined Authority and when asked about this some respondents were actually unsure what the question meant and were unable to really respond to it.

Final Conclusions, Evaluation and Recommendations for Champions for Wind Project

This project ran over four academic years and included eight schools over the evaluation period and focussed on determining if innovative, curriculum integrated projects could be used to increase knowledge and interest in the renewables energy sector. Some additional qualitative analysis was conducted in order to help get feedback from teachers and pupils.

The analysis suggested that even after controlling for the number of tests conducted on the data, significant gains overall were made on knowledge and interest regarding working in the renewables sector. These gains were nontrivial in terms of overall size. Students overall were positive about the programme, particularly around engaging in practical learning opportunities and visiting sites associated with the renewables sector to enhance their learning. Staff champions were also largely positive about the delivery of the interventions and overall, the interventions appear to have had a positive impact on the staff and students alike.

Project Recommendations

A number of recommendations can be made based on this work for future interventions of this nature.

1) Using practical sessions to demonstrate features of the renewables sectors makes for more engaging and enjoyable pedagogy.
2) The inclusion of site visits into the programme may help foster the learning and interest in sector overall.

3) Ensuring there is buy in at institutional level will help solidify the impact of the interventions by ensuring they are guaranteed time in the curriculum.
4) Wider sharing of resources and networking of champions will likely strengthen future programmes of this nature and may increase the bank of resources for use more widely across different educational levels (as the current bank of resources focus mainly on secondary level education).

Evaluating the Evaluation

While the overall project aims have been broadly met, with results supporting the efficacy of the project, there are a number of limitations that should be noted surrounding the implementation of the project.

The key impacting factor during this time was the Covid-19 pandemic that forced educational institutions into lockdown during 2020/2021. This globally disruptive event meant that direct engagement with the first cohort was extremely limited due to long periods of campus absence. Subsequent years meant it was also difficult to build interventions into the curriculum due to an overall squeeze on contact time due to continued absences shutdowns followed by catch up measures implemented by schools to make up for lost time. This had an impact on the time available to run the intervention and doubtlessly impacted on the intervention on the ground as well as the ability of champions to get students participating in both the pre and post test evaluations. Champions in their interviews noted the difficulty in getting ‘buy in’ within institutions and the fallout from the pandemic likely played a role in reducing the priority of the intervention.

The pre and post test design was also more logistically difficult to implement than in the original (which took place in 2013 and 2014). Due to changes related to the implementation of the General Data Protection Regulations in 2018, the procedure required the active consent of parents/guardians and not just the assent and consent of the participating schools and children. This adds an extra layer of administrative complexity for the schools/champions to manage and often meant that the uptake of children whose data could be used in the analysis was likely smaller than the number taking part in the actual interventions themselves. This is, and the pandemic, is likely a key factor in explaining the low uptake in pre/post test matching.

Conclusion

This intervention suggests that structured and specific interventions of this kind can increase the knowledge and interest of children in local renewables industries and (with institutional support) can be integrated effectively into mainstream curriculum activities.

Appendix 1: Staff Interview Questions

1. Can you give a brief outline of what you created and delivered as part of this programme?
2. How did the programme impact on the curriculum and teaching?
3. How do you feel the structure of the project and the brief worked? The project gave little direction to maximise freedom for yourselves. Did this suit you or would you have preferred something more defined/prescriptive?
4. Which aspect(s) of the project was the most satisfying?
5. Which aspect(s) of the project was the most challenging?
6. Which aspect(s) of the project was the least satisfying?
7. Did the bursary have any impact on willingness to participate in the project?
8. Do you think this programme had a beneficial impact on pupils?
9. Do you think this programme would have a beneficial impact on the completion of an academic programme or qualification?
10. How do you see yourself working with and within the Tees Valley Combined Authority? In the delivery of this programme, did you feel part of something larger?

Appendix 2: Pupil Focus Groups Questions

1. Can you tell us what activities you were involved with as part of the programme?

2. What do you feel you have learned throughout the programme?

3. Do you feel you understand more about the career options available in the renewable energies sector?

4. Has the programme had any impact on your career choices? If so, what?

5. Which aspect of the project has been the most challenging?

6. Which aspect of the project has been the least satisfying?

7. What, if anything, do you think you have gained from being involved in this project?

8. What advice would you give to other teachers/schools who may be interested in being involved in this project in the future to ensure they get the most out of it?

Appendix 3: Pupil Focus Group Information Sheets and Assent Forms

FOCUS GROUP INFORMATION

I would like to invite you to take part in a focus group alongside other pupils evaluating the impact of the Champions for Wind programme in schools. Before you decide if you would like to participate, I would like you to understand why the research is being done and what it would involve for you. **Please read through the following information.** This should take about 5 minutes.

Do I have to take part?

It is up to you to decide to join the study based on the information provided here. If you agree to take part, you will need to give your assent on the next page. You do not have to take part if you do not want to and there are no consequences for not wanting to do so.

What would taking part involve?

Participating in the study will involve you taking part in focus group with a member of the research Teesside University Research team and up to seven other pupils. This will take no longer than one hour and will not include any follow-ups. The group activity will also be recorded and transcribed (the recordings will be destroyed once the transcription has been completed).

What will happen if I do not want to carry on with the study?

You are free to stop participating at any point during the activity. However, it will not be possible to remove your contribution up until the point you withdraw from the recording amongst the contributions of others. We will however not refer directly to any of your contributions or use quotations from you. You may withdraw up until 19/07/2024. There are no consequences to withdrawing. Should you wish to do so, please contact the researcher on the details below.

What are the possible benefits of taking part?

Whilst there will be no direct benefit to you, it is hoped that the results of this study will provide information about how the Champions for Wind project had an impact on providing information to students regarding the renewable industries developing in the Tees Valley.

What are the potential disadvantages and risks of taking part in this study?

There are no know risks to participating within the study.

What if there is a problem?

Any complaint about the way you have been dealt with during the study or any possible harm you might suffer will be addressed. If you have a concern about any aspect of this study, you should ask to speak to Dr Lee Copping (l.copping@tees.ac.uk) who will do his best to answer your questions.

How will my information be kept confidential?

This project will follow ethical and legal practice and all information about you will be handled in confidence. All information which is collected about you during the research will be kept confidential, and the resulting data set will not contain any information that could be used to identify you. Quotations from your discussion may be used in reporting but you will not be identifiable from any inclusion of such material (although you may recognise them as your own words, others will not). However, should you say anything during the session that indicates to the researcher that you may cause harm to yourself or others, relevant details may be passed on to your school's safeguarding lead.

What will happen to the results of this study?

The results of this study will be used to provide a report to the funding body regarding the impact of the Champions for Wind programme.

Who has reviewed the study?

Teesside University Department of Psychology Ethics Committee have reviewed the study. If you have any concerns about the way this study has been conducted, you may contact the chair of the ethics committee, Professor Jacqueline Wheatcroft (j.wheatcroft@tees.ac.uk).

Contact for Further Information
Dr Lee Copping (L.Copping@tees.ac.uk)

Thank you for reading this information sheet.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

ASSENT

Thank you for agreeing to take part in this research. In agreeing to participate you have the following rights and protections as laid down in the British Psychological Society's ethical guidelines.

- Your participation is entirely voluntary.
- Under no circumstances will your real names or identifying information be included in the reporting of this research.
- You may withdraw your data from this research until 19/07/2024.
- Nobody, except myself and the research team will have access to this anonymised material in its entirety.

In agreeing to the terms of this assent form, participants should be aware that any anonymised material is solely for use in the current research project.

Please initial

I confirm that I have participated in the Champions for Wind programme. ☐

I understand that my participation is voluntary and that I am free to withdraw at any time until 19/07/2024 without giving any reason.
To withdraw your data please contact l.copping@tees.ac.uk ☐

I agree to take part in the above focus group and understand that this will be recorded and transcribed. ☐

I agree to take part in the focus group. ☐

Name _____

School _____

Date _____

Appendix 4 – Champions PIS, Consent and Debrief Documentation

Project Information Sheet: Teaching Staff

Title: 'Champions for Wind' Education Evaluation

Chief Investigators: Dr. Lee Copping
Researchers: Dr Helen Moore, Ms Hannah Poulter, Dr N Gray

My name is Lee Copping and I am a Senior Lecturer in the School of Social Sciences, Humanities and Law, Teesside University. I am undertaking an evaluation project and I would like to invite you to take part. Before you decide if you want to please read the following information and discuss it with others if you wish. Please contact my colleague Dr. Helen Moore you have any questions, by phone: 01642 738475 or by email: H.Moore@tees.ac.uk

What is the purpose of the study?
This evaluation is focused on the 'Sofia Champions for Wind' Education program (funded by Sofia Offshore Wind Farm which is owned by RWE Renewables) which aims to increase knowledge and interest in careers in the offshore wind industry. The evaluation will aim to analyse whether the program had an impact on this within school children.

Why am I being invited to take part?
You have been invited because you work within a school delivering the 'Sofia Champions for Wind' project either as a teacher champion, or as part of the careers or employability services.

Do I have to take part?
No, it is up to you if you want to, or not.

What would I be asked to do if I chose to take part?
If you agree to take part in this study, you will be asked to complete a short questionnaire at the beginning and the end of the programme. Additionally, you may be asked to participate in an interview regarding your experience of the programme and the impact you think it may have had on the participating children. This interview will be recorded and transcribed. On completion of the transcription, the recording will be destroyed. Your name will not be used, and you will not be identified in the report or any information relating to the findings from the study.

What are the possible disadvantages, or risks, of taking part?
There are no known risks to taking part in this research.

What are the possible benefits to taking part?
There will be no direct benefit to you as a participant in this research if you choose to take part.

What would happen to the information collected about me?
The project team will keep your signed Consent Form on a secure university computer which is password protected. As this is an important record this will be kept indefinitely.
All other information collected will be anonymised and kept confidential. The only other people who will be able to see the information you provide us with will be the research team working on this study.

The electronic data will be held on password-protected servers at Teesside University. Anonymised data may be used for future study (i.e. secondary analysis) but only in research projects that have received ethical approval from an appropriate committee.

We may use direct quotes that you provide during interviews for the purpose of reporting the findings from the research. Whilst you may recognise your own words, no one else will as all data will be anonymised (i.e. you will be assigned a study number or pseudonym).
Confidentiality may be breached if any information is shared that makes us think you might be a risk to yourself or others during interviews, but we would usually discuss this with you first. The chief investigator and Chair of the Research Ethics Subcommittee will be informed.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

The non-identifiable research data will be stored indefinitely on a secure password protected server at Teesside University. This is in case other scientists wish to raise questions about the results that need checking against the dataset. In the event that the study is published in a scientific journal, the non-person identifiable research dataset may be made publicly available (for example, as a supplement to the journal article, or stored on an on-line scientific data repository).

What would happen if I started, but changed my mind?
You can withdraw from this study up until two weeks after completing the questionnaire/interview without having to give a reason. There are no consequences surrounding withdrawal from the study. However, given the nature of focus group discussions, it is not possible to withdraw anything you have said in the group before your withdrawal.

What happens if there are any problems?
If you are unhappy, or there is a problem, please talk to me. If you remain unhappy, or there is an issue which you do not wish to talk to me about please contact ***Dr Katherine Swainston,*** Chair *of* School of Social Sciences, Humanities and Law, Research Ethics Subcommittee ***(****k.swainston@tees.ac.uk*).

Who has approved this study?
This study has been approved by the School of Social Sciences, Humanities and Law, Research Ethics Subcommittee.

Thank you for reading this information sheet and for considering whether or not to take part in this study. If you would like to take part, then please contact Dr Lee Copping (L.Copping@tees.ac.uk)

Consent Form

‘Sofia Champions for Wind’ Education Evaluation

Chief Investigator: ***Dr Lee Copping***

Researchers: ***Dr Helen Moore, Dr Nick Gray, Ms Hannah Poulter***

Please initial the boxes to indicate your agreement with the corresponding statements:

1	I confirm that I have read and understood the Participant Information Sheet for this study, and I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2	I understand that data collected during the study may be looked at by individuals from Teesside University where it is relevant to my taking part in this research. I give permission for these individuals to have access to that data.	
3	I understand that my participation is voluntary and that I am free to withdraw at any point over the next two weeks without giving any reason and without consequence.	
4	I understand that my participation in this research is confidential, and all information collected as part of this research will be stored in accordance with the Data Protection Act and the General Data Protection Regulations 2018.	
5	I understand that if I say something which raises concern for my safety or the safety of others, or reveals illegal or unprofessional practice, the researchers may break confidentiality and inform the relevant authorities.	
6	I verify that I meet the inclusion criteria (I am delivering the 'Champions for Wind' program).	
7	I consent to the recording of online interviews that I participate in.	
8	I agree to take part in this study.	

Participant name

Name ..... Signature..... Date .....

Teacher Debrief

'Sofia Champions for Wind' Education Evaluation

Chief Investigator: ***Dr Lee Copping***

Researchers: ***Dr Helen Moore, Dr Nick Gray, Ms Hannah Poulter***

Aim of research: The aim of this research was to evaluate the impact of teaching interventions on the knowledge and interest of children in careers and opportunities in the offshore wind industry.

I would like to emphasise that all information provided by yourself will be treated with strict confidentiality and under no circumstances will your name or any identifying characteristics be included in any further studies or publications. If you have any further questions about this study, I would be more than happy to assist and can be contacted via e-mail on l.copping@tees.ac.uk.

You can withdraw your data without giving a reason up to 2 weeks from today. If you would like to withdraw, please contact me on the above address and provide your participant ID.

Thank you for your participation in the ‘Sofia Champions for Wind’ Evaluation.

Appendix 5 - Parental PIS and Consent Letters

Parental Information and Consent Letter

Dear Parent/Guardian

My name is Lee Copping, and I am a Senior Lecturer in the School of Social Sciences, Humanities and Law, Teesside University. I am undertaking an evaluation project on behalf of a project your child's school is taking part in and I would like to invite your child to participate. The following letter contains information about the project. Please read the information carefully and if you are happy for your child to participate, please complete the attached form and return it to your child's school.

What is the purpose of the study?
This evaluation is focused on the 'Sofia Champions for Wind' Education program (funded by Sofia Offshore Wind Farm which is owned by RWE Renewables) which aims to increase knowledge and interest in careers in the offshore wind industry. The evaluation will aim to analyse whether the program had an impact on your child by asking them questions before and after the receive the 'Champions for Wind' sessions by their teacher.

Why has my child been invited to take part?
Your child has been invited because they are in a class which will have the 'Sofia Champions for Wind' program delivered by their teacher as part of their routine curriculum delivery.

Does my child have to take part?
No, it's up to you if you want them to or not.

What would my child be asked to do if they chose to take part?
If you agree for your child to take part in this study, they will be asked to do the following:

Two online questionnaires: We would like to complete a questionnaire with the children before and after they receive the 'Sofia Champions for Wind' sessions. We would like to find out about their knowledge and interest in the offshore wind industry before and after they have the training sessions. The questionnaires will take place in their classroom using a computer.

Online focus groups: We would like to work with about 6-8 children on an online focus group once the project is complete. Your child may be one of those approached. We would like to find out about their experiences of being part of the 'Champions for Wind' project, what they liked best and least etc. If you decide you would like them to take part in a focus group, they have the right to leave at any point once it has started without giving any reason. Focus groups will be audio recorded and transcribed. Audio recordings will be destroyed once transcription is complete.

Their names will not be used, and neither they nor their school will not be identified in the report or via any information relating to the findings from the study.

What are the possible disadvantages, or risks, of taking part?
There are no known risks to taking part in this research for your child. Please also note that your child will be asked to participate in the evaluation. Even if you agree to let your child participate, they have the right to refuse at any time and cannot be forced to take part.

What would happen to the information collected about me and my child?
Your child's school will keep a copy of this consent form acknowledging your decision regarding your child's participation.

All information collected from your child throughout the evaluation will be anonymised and kept confidential. The only other people who will be able to see the information you provide us with will be the research team working on this study. Data will be anonymised electronic data, held on password-protected servers at Teesside University and held indefinitely. Anonymised data may be used for a future study (i.e. secondary analysis) but only in research projects that have received ethical approval from an appropriate committee.

We may use direct quotes that your child provides during focus groups (should they participate) for the purpose of reporting the findings from the research. Whilst your child may recognise their own words, no one else will as all data will be anonymised.

Confidentiality may be breached if any information relating to any information is shared that makes us think your child might be a risk to themselves or others during interviews, but we would usually discuss this with you first. The chief investigator and Chair of the Research Ethics Subcommittee will be informed.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

What would happen if I started, but changed my mind?
You can withdraw your child from this study up until two weeks after it is complete without having to give a reason. No-one outside of the research team will be informed of your child's withdrawal and it will not affect their access to any school activity. However, given the nature of focus group discussions, it is not possible to withdraw anything they have said in the group before their withdrawal (although please keep in mind that all focus group discussions are anonymised).

What happens if there are any problems?
If you are unhappy, or there is a problem, please talk to me. If you remain unhappy, or there is an issue which you do not wish to talk to me about please contact ***Dr Jacqueline Wheatcroft,*** Chair of

the School of Social Sciences, Humanities and Law, Research Ethics Subcommittee**,** ***J.Wheatcroft@tees.ac.uk***

Who has approved this study?
This study has been approved by the School of Social Sciences, Humanities and Law, Research Ethics Subcommittee. Your child's school has already agreed to participate in the 'Champions for Wind' programme.

Thank you for reading this information sheet and for considering whether to allow your child to take part in this study. **Please complete and return the reply slip overleaf to your child's school if you are willing to allow your child to participate in the evaluation.**

If you would like further information about the project in advance of making your decision, please contact my colleague Dr. Helen Moore, by phone: 01642 738475 or by email: H.Moore@tees.ac.uk

---

'Sofia Champions for Wind' Education Evaluation

Chief Investigator: ***Dr Lee Copping***

Researchers: ***Dr Helen Moore Dr Nick Gray Mrs Hannah Poulter***

Please initial the boxes to indicate your agreement on behalf of your child with the corresponding statements:

1	I confirm that I have read and understood the information in the accompanying letter for this study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	
2	I understand that data collected during the study may be looked at by individuals from Teesside University where it is relevant to my child's participation in this research. I give permission for these individuals to have access to that data.	
3	I understand that my child's participation is voluntary and that they are free to withdraw without giving any reason up to two weeks after completing the evaluation, without care or legal rights being affected.	
4	I understand that my child's participation in this research is confidential, and all information collected as part of this research will be stored in accordance with the Data Protection Act and the General Data Protection Regulations 2018.	

5	I understand that if my child says something which raises concern for their safety or the safety of others, or reveals illegal or unprofessional practice, the researchers may break confidentiality and inform the relevant authorities.	
6	I understand that my child may be asked to participate in a follow up focus group and that this focus group will be audio recorded (the recordings being destroyed on completion of a transcript).	

I **_____ _____(Parent/Guardian – delete as appropriate)**

give my informed consent to allow my child

_____ to participate in the "Champions for Wind"

Evaluation conducted in conjunction with my child's school, RWE Renewables (Sofia Offshore Wind Farm) and Teesside University.

Signed: _____ Date: ____/____/_____

Appendix 6: Pre-Evaluation Survey Documentation

Champions for Wind Evaluation (Pre)

Sofia Champions for Wind Evaluation

Hello. My name is Lee Copping and I am a Senior Lecturer in the School of Social Sciences, Humanities and Law, Teesside University. I am undertaking an evaluation of the 'Sofia Champions for Wind' program that you have been working on and I would like to invite you to take part. Before you decide if you want to please read the following information and discuss it with others if you wish.

What is the purpose of the study?

This evaluation will aim to see if the programme had an impact on increasing your knowledge about the offshore wind industry and careers within it.

Why am I being invited to take part?

You have been invited because you are about to or have been a part of the 'Sofia Champions for Wind' project in our school.

Do I have to take part?

No, it is up to you if you want to, or not.

What would I be asked to do if I chose to take part?

If you agree to take part, you will be asked to complete a short questionnaire at the beginning and the end of the project. Additionally, you may be asked to participate in a short interview with myself or a colleague to talk about your experience of the programme. This interview will be recorded and converted into a text document. On completion of the text document, the recording will be destroyed. Your name and school or anything about you will never be used, and you will not be identified in the report or any information relating to the findings from the study.

What are the possible disadvantages, or risks, of taking part?

There are no known risks to taking part in this research.

What are the possible benefits to taking part?

There will be no direct benefit to you as a participant in this research if you choose to take part.

What would happen to the information collected about me?

All information collected will be anonymised and kept confidential. The only other people who will be able to see the information you provide us with will be the team working on this study.

We may directly use some of the things you say during interviews for the purpose of reporting the findings from the research. Whilst you may recognise your own words, no one else will as all data will be anonymised (i.e. you will be assigned a study number known only to you and the research team rather than your own name).

If you are invited to an interview, please be aware that if you say anything that makes us think you might be a risk to yourself or others, we may have to pass this on to your school's safeguarding team.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

What would happen if I started, but changed my mind?

You can withdraw from this study up until two weeks after completing the questionnaire/interview without having to give a reason. There are no consequences surrounding withdrawal from the study. If you wish to withdraw your data, please talk to the member of staff running the 'Sofia Champions for Wind' project at your school who will contact us to ask us to remove the data.

What happens if there are any problems?

If you are unhappy, or there is a problem, please talk to either your teacher or myself (I can be contacted at l.copping@tees.ac.uk). If you remain unhappy, or there is an issue which you do not wish to talk to me about, please contact ***Dr Katherine Swainston,*** Chair *of* School of Social Sciences, Humanities and Law, Research Ethics Subcommittee ***(k.swainston@tees.ac.uk***).

Who has approved this study?

This study has been approved by the School of Social Sciences, Humanities and Law, Research Ethics Subcommittee.

Thank you for reading this information sheet and for considering whether or not to take part in this study.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

Now that you have had chance to read the information about the evaluation, please answer the following questions before you proceed.

I have read and understood the Information on the previous page for this study, and I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. *Required*

- Yes
- No

I understand that data collected during the study may be looked at by individuals from Teesside University where it is relevant to my taking part in this research. I give permission for these individuals to have access to that data. *Required*

- Yes
- No

I understand that my participation is voluntary and that I can withdraw over the next two weeks without giving any reason by talking to my teacher. *Required*

- Yes
- No

I understand that my participation in this research is confidential, and all information collected as part of this research will be stored in accordance with the Data Protection Act and the General Data Protection Regulations 2018. *Required*

- Yes
- No

I understand that if I am invited to a follow up interview and I say something which raises concern for my safety or the safety of others, this information will be passed on to my teachers. *Required*

- Yes
- No

I consent to the recording of online interviews that I participate in (if I am invited to participate). *Required*

- Yes
- No

I confirm that my parents/guardian have given me permission to participate in this program (if you are unsure, please ask your teacher who will know the answer). *Required*

- Yes
- No

I confirm that I am willing to participate in this evaluation. *Optional*

- Yes
- No

ID Code

Before you begin, you need an anonymous code to allow you to withdraw your data and so that your data can be matched to these scores when you complete a follow up after the program has finished.

To make a code for yourself, please do the following:

1. Take the second letter of your first name and the second letter of your surname.
2. Take the day of the month in which you were born.
3. Take the colour of your eyes.
4. Combine the elements together.

For example, Robert Smith was born on the 17th and has blue eyes. His code is therefore : OM17BLUE

Create your code below. *Required*

What is your biological sex? *Required*

- Male
- Female
- Prefer not to say

What is your age? *Required*

Please enter a whole number (integer).

Please make sure the number is between 11 and 18.

What school do you attend? *Required*

Please enter a response that only contains letters.

Evaluation

Please answer the questions below and be honest when answering.

On a scale of 1 (nothing) to 5 (a lot), rate how much you know about each of these topics:

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
I know what renewable energy is.	○	○	○	○	○
I know how offshore wind farms work.	○	○	○	○	○

If you work in the offshore wind industry, you help to design, build and operate wind farms at sea. There are lots of different careers in this area.

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
The different careers in the offshore wind industry.	○	○	○	○	○
The Sofia Offshore Wind farm.	○	○	○	○	○
The careers available through the Sofia Offshore Wind farm.	○	○	○	○	○

Please indicate how much you know (1 = nothing, 5 = a lot) about what a company needs to do to:

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
Developing and gaining permission from the authorities to build an offshore wind farm.	○	○	○	○	○
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	○	○	○	○	○
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	○	○	○	○	○

Please indicate how much you know (1 = nothing, 5 = a lot) of the career opportunities available during each of these stages:

	Please indicate how much you know (1 = nothing, 5 = a lot) of the career opportunities available during each of these stages:				
	1	2	3	4	5
Developing and gaining permission from the authorities' to build an offshore wind farm.	○	○	○	○	○
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables.	○	○	○	○	○
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	○	○	○	○	○

On a scale of 1 (nothing) to 5 (a lot), rate how much you know about the qualifications

and experience needed to work in the offshore wind industry.

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to work in the offshore wind industry.

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

On a scale of 1 (not at all) to 5 (a lot), rate how interested you would be to learn more about the following topics?

	On a scale of 1 (not at all) to 5 (a lot), rate how interested you would be to:				
	1	2	3	4	5
Learn more about offshore wind farms	○	○	○	○	○
Learn more about the offshore wind industry	○	○	○	○	○
Learn more about careers in the offshore wind industry	○	○	○	○	○
Learn more about the Sofia Offshore Wind farm	○	○	○	○	○
Learn more about careers at the Sofia Offshore Wind farm	○	○	○	○	○

Additional Questions

Please write a list of all the careers you think might be needed to work in the offshore wind industry.

Write five personal qualities that you think might be important to work in the offshore wind industry.

Thank You

Thank you for participating in the 'Sofia Champions for Wind' Evaluation.

Debrief

Thank you for participating in the 'Sofia Champions for Wind' programme and for providing answers to the evaluation questions.

Please remember that all of your responses are confidential and are only accessible to the research team (your teachers will not see your individual responses).

If you wish to withdraw your responses, you have two weeks from now to contact your teacher. You will need to supply your participant code to them, and they will contact the research team to remove the data.

You will complete a similar survey to this in a few weeks time once the project is complete. You may also be selected to take part in an interview to talk about your experiences of the project (although please remember that your participation in the interview is optional).

If you have any questions about the project, please speak to your teacher who will do their best to answer.

We hope you enjoy the 'Sofia Champions for Wind' programme.

Appendix 7: Post Evaluation Survey Documentation

Champions for Wind Evaluation (Post)

Sofia Champions for Wind Evaluation

Hello. My name is Lee Copping and I am a Senior Lecturer in the School of Social Sciences, Humanities and Law, Teesside University. I am undertaking an evaluation of the 'Sofia Champions for Wind' program that you have been working on and I would like to invite you to take part. Before you decide if you want to please read the following information and discuss it with others if you wish.

What is the purpose of the study?

This evaluation will aim to see if the programme had an impact on increasing your knowledge about the offshore wind industry and careers within it.

Why am I being invited to take part?

You have been invited because you are about to or have been a part of the 'Sofia Champions for Wind' project.

Do I have to take part?

No, it is up to you if you want to, or not.

What would I be asked to do if I chose to take part?

If you agree to take part, you will be asked to complete a short questionnaire at the beginning and the end of the project. Additionally, you may be asked to participate in a short interview with myself or a colleague to talk about your experience of the programme. This interview will be recorded and converted into a text document. On completion of the text document, the recording will be destroyed. Your name and school or anything about you will never be used, and you will not be identified in the report or any information relating to the findings from the study.

What are the possible disadvantages, or risks, of taking part?

There are no known risks to taking part in this research.

What are the possible benefits to taking part?

There will be no direct benefit to you as a participant in this research if you choose to take part.

What would happen to the information collected about me?

All information collected will be anonymised and kept confidential. The only other people who will be able to see the information you provide us with will be the team working on this study.

We may directly use some of the things you say during interviews for the purpose of reporting the findings from the research. Whilst you may recognise your own words, no one else will as all data will be anonymised (i.e. you will be assigned a study number known only to you and the research team rather than your own name).

If you are invited to an interview, please be aware that if you say anything that makes us think you might be a risk to yourself or others, we may have to pass this on to your school's safeguarding team.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

What would happen if I started, but changed my mind?

You can withdraw from this study up until two weeks after completing the questionnaire/interview without having to give a reason. There are no consequences surrounding withdrawal from the study. If you wish to withdraw your data, please talk to the member of staff running the 'Sofia Champions for Wind' project at your school who will contact us to ask us to remove the data.

What happens if there are any problems?

If you are unhappy, or there is a problem, please talk to either your teacher or myself (I can be contacted at l.copping@tees.ac.uk). If you remain unhappy, or there is an issue which you do not wish to talk to me about, please contact ***Dr Katherine Swainston,*** Chair *of* School of Social Sciences, Humanities and Law, Research Ethics Subcommittee ***(k.swainston@tees.ac.uk***).

Who has approved this study?

This study has been approved by the School of Social Sciences, Humanities and Law, Research Ethics Subcommittee.

Thank you for reading this information sheet and for considering whether or not to take part in this study.

Personal data including special category data obtained for the purposes of this research project is processed lawfully in the necessary performance of scientific or historical research or for statistical purposes carried out in the public interest. Processing of personal data including special category data is proportionate to the aims pursued, respects the essence of data protection and provides suitable and specific measures to safeguard the rights and interests of the data subject in full compliance with the General Data Protection Regulation and the Data Protection Act 2018.

Now that you have had chance to read the information about the evaluation, please answer the following questions before you proceed.

I have read and understood the Information on the previous page for this study, and I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily. *Required*

- Yes
- No

I understand that data collected during the study may be looked at by individuals from Teesside University where it is relevant to my taking part in this research. I give permission for these individuals to have access to that data. *Required*

- Yes
- No

I understand that my participation is voluntary and that I can withdraw over the next two weeks without giving any reason by talking to my teacher. *Required*

- Yes
- No

I understand that my participation in this research is confidential, and all information collected as part of this research will be stored in accordance with the Data Protection Act and the General Data Protection Regulations 2018. *Required*

- Yes
- No

I understand that if I am invited to a follow up interview and I say something which raises concern for my safety or the safety of others, this information will be passed on to my teachers. *Required*

- Yes
- No

I consent to the recording of online interviews that I participate in (if I am invited to participate). *Required*

- Yes
- No

I confirm that my parents/guardian have given me permission to participate in this program (if you are unsure, please ask your teacher who will know the answer). *Required*

- Yes
- No

I confirm that I am willing to participate in this evaluation. *Optional*

- Yes
- No

ID Code

Before you begin, you need an anonymous code to allow you to withdraw your data and so that your data can be matched to these scores when you complete a follow up after the program has finished.

To make a code for yourself, please do the following:

1. Take the second letter of your first name and the second letter of your surname.
2. Take the day of the month in which you were born.
3. Take the colour of your eyes.
4. Combine the elements together.

For example, Robert Smith was born on the 17th and has blue eyes. His code is therefore : OM17BLUE

Create your code below. *Required*

What is your biological sex? *Required*

- Male
- Female
- Prefer not to say

What is your age? *Required*

Please enter a whole number (integer).

Please make sure the number is between 11 and 18.

What school do you attend? *Required*

Please enter a response that only contains letters.

Evaluation

Please answer the questions below and be honest when answering.

On a scale of 1 (nothing) to 5 (a lot), rate how much you know about each of these topics:

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
I know what renewable energy is.	○	○	○	○	○
I know how offshore wind farms work.	○	○	○	○	○

If you work in the offshore wind industry, you help to design, build and operate wind farms at sea. There are lots of different careers in this area.

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
The different careers in the offshore wind industry.	○	○	○	○	○
The Sofia Offshore Wind farm.	○	○	○	○	○
The careers available at the Sofia Offshore Wind farm.	○	○	○	○	○

Please indicate how much you know (1 = nothing, 5 = a lot) about what a company needs to do to:

	On a scale of 1 (nothing) to 5 (a lot), rate how much you know about:				
	1	2	3	4	5
Developing and gaining permission from the authorities to build an offshore wind farm.	○	○	○	○	○
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	○	○	○	○	○
Ensure the long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	○	○	○	○	○

Please indicate how much you know (1 = nothing, 5 = a lot) of the career opportunities available during each of these stages:

	Please indicate how much you know (1 = nothing, 5 = a lot) of the career opportunities available during each of these stages:				
	1	2	3	4	5
Developing and gaining permission from the authorities' to build an offshore wind farm.	○	○	○	○	○
Constructing an offshore wind farm (including fabricating and installing the wind turbines, foundations, converter stations and cables).	○	○	○	○	○
The long-term management, operation and maintenance of an offshore wind farm to keep it working efficiently.	○	○	○	○	○

On a scale of 1 (nothing) to 5 (a lot), rate how much you know about the qualifications

and experience needed to work in the offshore wind industry.

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

On a scale of 1 (not at all) to 5 (a lot), rate how much you think you would like to work in the offshore wind industry.

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5

On a scale of 1 (not at all) to 5 (a lot), rate how interested you would be to learn more about the following topics?

	On a scale of 1 (not at all) to 5 (a lot), rate how interested you would be to:				
	1	2	3	4	5
Learn more about offshore wind farms	○	○	○	○	○
Learn more about the offshore wind industry	○	○	○	○	○
Learn more about careers in the offshore wind industry	○	○	○	○	○
Learn more about the Sofia Offshore Wind farm	○	○	○	○	○
Learn more about careers at the Sofia Offshore Wind farm	○	○	○	○	○

Additional Questions

Please write a list of all the careers you think might be needed to work in the offshore wind industry.

Write five personal qualities that you think might be important to work in the offshore wind industry.

What part of the offshore wind project have you enjoyed the most?

What part of the offshore wind project have you enjoyed the least?

Thank You

Thank you for participating in the 'Sofia Champions for Wind' Evaluation.

Debrief

Thank you for participating in the 'Sofia Champions for Wind' programme and for providing answers to the evaluation questions.

Please remember that all of your responses are confidential and are only accessible to the research team (your teachers will not see your individual responses).

If you wish to withdraw your responses, you have two weeks from now to contact your teacher. You will need to supply your participant code to them, and they will contact the research team to remove the data.

You may also be selected to take part in an interview to talk about your experiences of the project (although please remember that your participation in the interview is optional).

If you have any questions about the project, please speak to your teacher who will do their best to answer.

We thank you for participating in the 'Sofia Champions for Wind' programme and hope you have enjoyed the experience.