

# Attracting Young People to Jobs in Sustainable Energy in the UK

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# My Perspective and Today's Focus

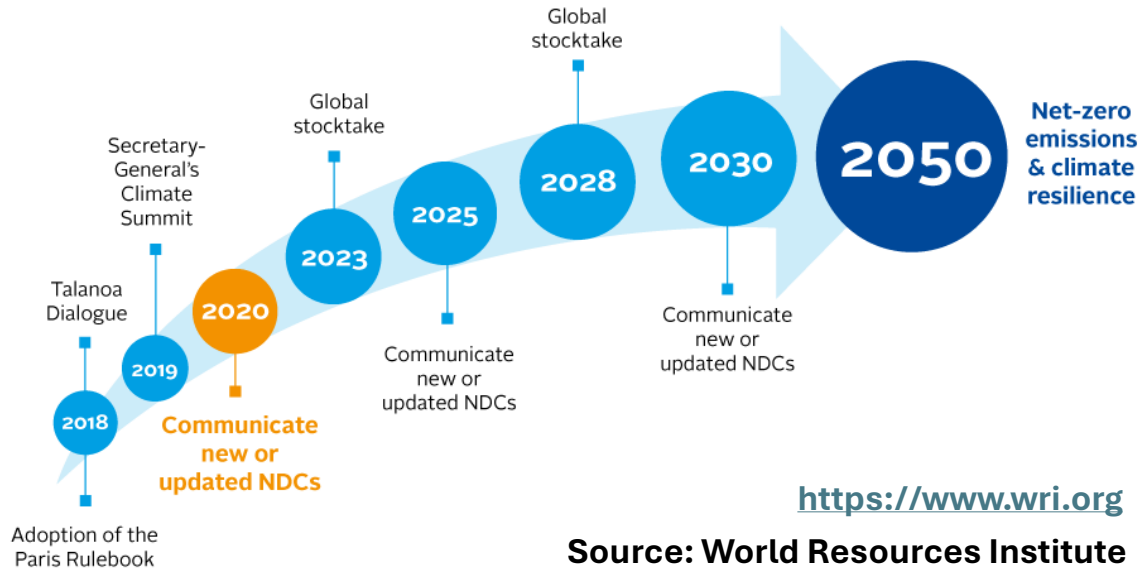


- 30+ years in energy sector, working initially as a journalist, then as an analyst, economist, consultant and training facilitator. Focussing on workforce issues for last several years on BIEE Council but academic research still in early stages. Recently refocussed as careers adviser and completed CDI Level 6 course in 2023.

- UK leadership role in Net Zero and the global challenge
- The need to put energy at the heart of decarbonization plans
- The challenge of getting young people interested in sustainable energy
- What (if anything) can we learn from the rest of the world?
- The difficulty of quantitative research in this area, and case studies
- Conclusions and Next Steps

# The Paris Agreement and Next Steps

## AMBITION MECHANISM IN THE PARIS AGREEMENT



- Paris Agreement signed in 2015 by most countries, including large oil and gas producers
- UK has played leadership role in COP process and was first country to commit to Net Zero (20 countries have followed suit)
- But political indecision limits pace of job creation needed to meet Net Zero Targets in the UK and regional implementation of plans is uneven
- Climate change and emissions are global in their impact. UK responsible for ~1% of global energy use

Emissions Source	% of total	Notes
Energy	31%	Electricity, heating
Transport	15%	Petrol, diesel cars + trucks
Industry	12%	Cement, steel, chemicals
Agriculture	11%	Livestock, rice, fertilizers
Land Use	6%	Deforestation



# Key Technologies in UK for Low Carbon Future



SOLAR AND WIND



HYDROGEN



BATTERIES AND EVS



WAVE AND TIDAL



NUCLEAR POWER



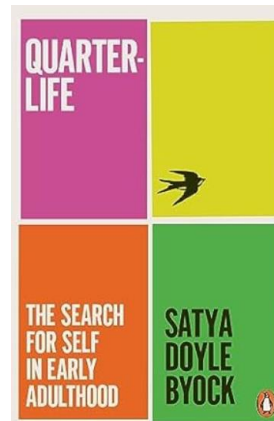
HEAT TECHNOLOGIES



ENERGY EFFICIENCY

# What is the Problem?

- Attitudes to energy sector, particularly among younger people, overwhelmingly less than positive
- Lack of trust, lack of trusted role models, legacy of polarization and conflict, lack of diversity
- But interest in “green matters” and climate commitment is strong: biodiversity, nature, environment
- Under 25 age group: meaning seekers, stability seekers, “creatives”
- Energy sector falling between three stools:
  - ⊗ Meaning seekers
  - ⊗ Stability seekers
  - ⊗ Creatives



So my key research question is, how can the CEIAG sector in the UK do more to engage younger people's interest in working in the sustainable energy sector?

# So What Can We Learn from Other Countries? Methodology

- Desktop research and interviews
- Searched on AI online systems using standardized question
- “How are green careers and jobs in sustainability promoted through career guidance and education in (country name)?”
- Used Gemini and Chat GPT – **note: health warning!**
- Identified common metrics associated with successful careers advice and guidance for sustainability and green careers
- This was done for all the main energy consuming or producing countries around the world (based on IEA Statistical Review of World Energy)
- Then grouped these manually into following 18 commonly-occurring categories

# Categories used in Methodology

## Societal support

- Long-term approach to sustainable jobs growth
- Government ministry providing specific support for sustainability jobs
- Dedicated government portal for sustainability jobs
- Support from wider intergovernmental networks

## Economy / Business

- Specific initiatives and funding for sustainable skills development
- Public-Private partnerships for sustainable projects

## Education

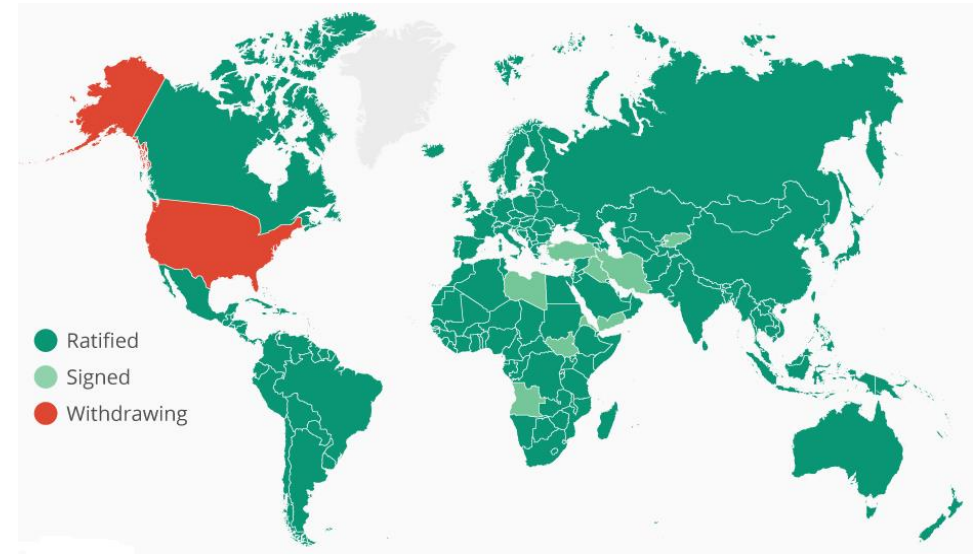
- Incorporation of sustainability in national curriculum
- Universities and FE colleges with sustainability programs, degrees
- Vocational training in sustainability and sustainable energy
- Apprenticeships in sustainability and sustainable energy
- Sustainability skills certification programs such as LEED\*
- Availability of suitable sustainable energy courses

## Careers Sector

- Events to build interest (workshops, career fairs, networking)
- Online platforms focussed on Sustainability jobs
- Online regional platforms for specific sustainability sectors
- Career exploration tools to assess skills suitability for green jobs
- Training of careers advisers to offer advice on sustainable jobs
- Mentoring, coaching programs for early career professionals

# Measures of Success in Moving towards Net Zero

- Goal is to map these metrics for success to actual results in each country, and to draw evidence-based lessons from this
- This is challenging as no agreed league table of success in moves towards Net Zero
- We also lack information about availability of sustainable energy jobs across countries
- Several data sources available to measure progress on Net Zero but methodologies and structure of data provided is not consistent
- I selected Canada, Denmark, Austria, Morocco, UAE and Vietnam as positive countries for comparison – wide geographical coverage
- **But currently lacking rigorous data to assess the success of sustainability implementation**



## DATA SOURCES

NewClimate Institute's [The Climate Action Tracker](#)

Climate Watch's [Net-Zero Tracker](#)

Energy & Climate Intelligence Unit [Net Zero Scorecard](#)

Grantham Research Institute [Climate Policy Radar](#)



# Tentative results suggest UK is not doing too badly

Support metric	Sector	Canada	Denmark	Austria	Morocco	UAE	Vietnam	UK
Long-term approach to sustainable jobs growth	Government	X	✓	✓	✓	✓	X	X
Government ministry providing specific support for sustainability jobs	Government	✓	✓	✓	✓	X	☒	✓
Dedicated government portal for sustainability jobs	Government	☑	☑	☑	X	☑	X	X
Support from wider intergovernmental networks	Government	X	✓	✓	X	X	X	X
Specific initiatives and funding for sustainable skills development	Government	✓	✓	✓	✓	✓	X	✓
Public-Private partnerships for sustainable projects	Economy	✓	✓	✓	✓	✓	✓	✓
Incorporation of sustainability in national curriculum	Education	✓	☑	✓	✓	✓	✓	✓
Universities and FE colleges with sustainability programs, degrees	Education	✓	✓	✓	✓	✓	✓	✓
Vocational training in sustainability and sustainable energy	Education	✓	✓	✓	✓	✓	✓	✓
Apprenticeships in sustainability and sustainable energy	Education	✓	✓	✓	X	X	X	✓
Sustainability skills certification programs such as LEED	Education	✓	✓	✓	✓	✓	✓	✓
Availability of suitable sustainable energy courses	Education	✓	✓	✓	X	✓	X	✓
Online platforms focussed on Sustainability jobs	CEIAG	✓	✓	✓	✓	✓	X	✓
Online regional platforms for specific sustainability sectors	CEIAG	✓	✓	✓	X	X	X	✓
Career exploration tools to assess skills suitability for green jobs	CEIAG	✓	✓	✓	✓	X	✓	✓
Events to build interest (workshops, career fairs, networking)	CEIAG	✓	✓	✓	✓	✓	✓	✓
Training of careers advisers to offer advice on sustainable jobs	CEIAG	✓	✓	✓	?	✓	X	X
Mentoring, coaching programs for early career professionals	CEIAG	✓	✓	✓	X	X	X	✓

# Results and Next steps

- If results so far are correct, the UK meets most of the criteria identified as necessary to promote careers in green sector / sustainable energy
- But this does not feel intuitively right!
- Results of 2021 Green Jobs Taskforce suggests significant skills shortages across energy and utility sector
- Interviews done so far reinforce this impression. It is difficult to recruit young people with the right skills, and young people who care about sustainability cannot find the jobs they want
- So what else can be done? Next few slides have **anecdotal** comparisons with the countries that I selected for comparison
- Used SWOT analysis as this allows a rounded and consistent comparison

# Strengths

- **Strong vocational training – on the job learning and practical skills**
- Government websites flagging up green jobs
- Sustainability is deeply integrated in national curriculum
- Strong FE / HE sector focussed on sustainability
- Qualified and trained career guidance professionals for green jobs

# Opportunities

- Specific training for in-demand skills for green economy
- Industry outreach and cooperation with green business
- Public/private partnerships and innovation focus
- **Upskilling and reskilling programs available**
- Participation in Euroguidance network

# Weaknesses

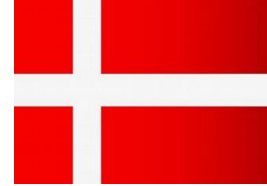
- Lack of diversity across full range of new technologies
- Low population and wealth limit it as role model for other countries

# Threats

- Arguably dependent on continued affluence
- Embedded in EU system which is increasingly vulnerable to change
- Arguably too much dependence on wind as main energy source

# DENMARK

Population: 5.85 million  
EU / OECD



## KEY TAKEAWAYS

- Strong focus on wind power and EE with ambitious targets
- Strong focus on practical and vocational skills - vocational training is world renowned
- Sustainability is built into the environment and cultural projects give focus to young people's interest in climate



<https://inhabitat.com/this-danish-school-is-completely-covered-with-over-12000-sea-green-solar-panels>

# Strengths

- Incorporates sustainability into national curriculum
- **Dedicated agency for energy efficiency (AMEE)**
- Ministry of Education and Vocational Training (MENFP)
- Specialized training schools offering vocational training (public/private)

# Opportunities

- Strong institutional structures have been put in place
- As newly industrializing, much still to be done but sustainability and energy seen as prestigious
- **Direct incentives for private sector investment and individual involvement**

# Weaknesses

- Language support required as most people speak Arabic and French
- FE and university sector paying more attention to sustainability but course coverage is still limited

# Threats

- Dependent on external support
- Lack of political continuity could jeopardize direction

# MOROCCO

Population: 37.8 million  
African Union



## KEY TAKEAWAYS

- Morocco's focus is on solar energy and circular economy, especially recycling
- Poor country so financing is a major challenge
- World Bank is supporting major waste recycling projects, with private sector involvement

" What Morocco is doing is exemplary. They are looking at waste as a resource rather than trash. The Oum Azza site is a promising model of what other landfills can and should look like with the roll out of the government program. Combining recycling, value chains and jobs is a good recipe to make the dump story a success story. "



<https://www.worldbank.org/en/news/feature/2016/02/16/morocco-lets-nothing-go-to-waste>

# Strengths

- Strong CEIAG network
- Public Employment Service (AMS)
- Strong University and FE programs
- Strong vocational training and apprenticeship structure

# Opportunities

- Success in jobs creation (around 1 in 10 new jobs are “green” jobs, according to VOEB)
- Young people are motivated to join energy firms
- **Participation in Euroguidance network**

# Weaknesses

- Integration of sustainability themes in national curriculum is partial
- Low population and wealth limit it as role model for other countries

# Threats

- Potential lack of political will if populist parties gain ground
- Arguably dependent on continued affluence
- Embedded in EU system which is increasingly vulnerable to change

# AUSTRIA

Population: 9 million  
EU / OECD



## KEY TAKEAWAYS

- Austria has encouraged sustainability at all levels of the economy, from wine making to recycling
- Focus is on skills development for circular economy, sustainable resource management and energy efficiency
- Sustainable development is a constitutional goal
- Strong focus on innovation and competitiveness



<https://www.austriatourism.com/>

# Strengths

- **Long-term vision supported by MoEducation and highest levels of government**
- Incorporated in national curriculum and schools in Green Schools Alliance
- Specialized degrees: Masdar Institute etc.
- Emirates Institute of Skills provides vocational training

# Opportunities

- Public-private partnerships
- **Funding efforts: Dubai Green Fund, Shams Dubai**
- Emirates Green Majlis and Etihad Careers has dedicated forum for sustainability jobs
- Green Certifications include LEED Leadership in Energy and Environmental Design

# Weaknesses

- Oil and gas producer that will keep exporting
- High per capita income and huge expatriate population
- Domestic skills growth a priority but still at early stages

# Threats

- Fragility of implementation
- Hosted COP28 but sensitive to criticism from outside
- Monarchical structure makes it vulnerable to succession and continuity issues

# UAE

Population: 10.5 million  
GCC, League of Arab States



## KEY TAKEAWAYS

- UAE is moving quickly to Net Zero and has huge wealth to fund efforts (solar / nuclear / EVs)
- Green push is framed in local traditions and heritage
- Oil wealth allows citizens to switch to EVs and charging points ready
- UAE will probably be Net Zero in own economy before UK, but will still be exporting oil and gas



Source: Spectrum Guide to UAE

# Strengths

- Government of Canada Green Jobs Portal (2023)
- **Financial support for training in green jobs**
- NPOs: Ecojustice, Conference Board of Canada
- Strong FE and HE support: University courses, CEIAG and career fairs at universities

# Opportunities

- Engagement of First Nations as sustainability leaders
- **Embedding of sustainability in cultural awareness programs**
- Expanding apprenticeships: solar PV installer, energy auditing, wind turbine technician ++
- Strong Certifications: LEED, green building standards

# Weaknesses

- Polarization between fossil fuel and renewables sector and lack of political continuity
- Regional allegiances to fossil fuels make countrywide implementation of goals difficult

# Threats

- Lack of political continuity has led to stop-start implementation
- Potential political fallout from Trump presidency in United States
- Disaffection of minority groups could undermine progress

# CANADA

Population: 38.5 million  
OECD



## KEY TAKEAWAYS

- Canada ranked above average for CO2 reduction despite big fossil fuel sector
- But strong polarization between fossil fuel and renewables sector and lack of political continuity
- Multicultural tradition has led to strong diversity in sustainability sector
- Strong institutional structures and financial support programs



## Strengths

- Raising awareness through CEIAG programs
- Incorporating sustainability in STEM courses
- Green Vocational training
- Ministry of Education and Training

## Opportunities

- **Explicit analysis of skills gaps and providing resources to fill these**
- Some movement towards cultural programs to support interest of young people in sector

## Weaknesses

- University programs
- Teacher training is a gap
- Funding and resources are an issue
- Industry collaboration lacking

## Threats

- Sustainable jobs concentrated in manufacturing sector (48%)
- Some progress on energy (34%) but still a coal economy and coal is still cheapest source of energy
- Bureaucracy and red tape can stop projects in their track

# VIETNAM

Population: 99.5 million  
ASEAN



## KEY TAKEAWAYS

- Interviews suggest that reality is that CEIAG provision is thin on the ground
- But skills gaps are being addressed honestly, not swept under the carpet
- Bureaucracy and red tape are problematic



Source: Thang Long Water Puppet Theatre



# Conclusions and Further Research

- UK careers sector has put in place solid structures to support interest in sustainability jobs
- But these seem underfunded and do not specifically target the key sector of energy
- Enhancing status of CEIAG sector and providing specific training in sustainable energy should be a priority
- Building reskilling and upskilling programs and arts/STEM conversion models is something I want to research
- International comparisons suggest the following areas for development at a national level (includes careers sector but goes wider)
  - **Having a long-term vision with institutional support that is not subject to political wind change**
  - **Develop upskilling and reskilling programs to allow broader participation in sustainable energy**
  - **Provide strongest possible vocational training – on the job learning and practical skills**
  - **Creation of a dedicated agency for energy efficiency and renewable energy**
  - **Improve funding structures and provide financial support for training in green jobs, CEIAG**
  - **Provide incentives for private sector investment and individual involvement in sustainable energy**
  - **Embedding of sustainability in cultural awareness programs**
  - **Participation in wider international networks such as Euroguidance**
  - **Explicit analysis of skills gaps and resources and funding to fill these**

# Upskilling / Reskilling

- Existing UK energy workforce is around 700,000 people
- Highly skilled workforce in traditional hydrocarbons
- Familiar with megaprojects, scale of energy industry and will be actively involved in decommissioning
- These people can potentially play a key role in providing role models for those entering the sector
- CEIAG sector could be a conduit for making workers aware of opportunities
- Labour manifesto promises 650,000 new jobs in sustainability
- Need to go beyond the traditional polarised attitudes to Green Agenda
- Diversity of workforce should be a key goal for the future



Much work still to be done! Please get in touch if you want to collaborate on any aspect of this research

Thanks for your attention!

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