



The voice of energy industry



Young Energy
Professionals Forum

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Tomorrow's ideas, **today:** Resolving the Energy Trilemma

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Insights from the
**Young Energy Professionals
(YEP) Forum**



Young Energy Professionals (YEP) Forum

The YEP Forum is a network to promote the latest generation of energy industry professionals, providing opportunities to collaborate, develop and recognise successes.

We now have over **2000** individual members representing over **350** different organisations.

The Forum organises a wide range of events for our members throughout the year. This includes panels of industry leaders discussing topical issues, networking events and site visits. We also host the annual YEP Awards Ceremony, now in its 8th year, which recognises the successes and achievements of young professionals in the energy industry.

In 2022 we have continued to expand as a Forum. The return of in-person events has allowed us to continue to offer an exciting and ambitious programme of events to educate and inspire the energy leaders of tomorrow.

The YEP Thought Leadership Report allows the Forum to provide an original, thought-provoking intervention into debates on national and global energy policy.

This year's report marks our contribution to the debate on energy policy through focusing on the realignment of the 'Energy Trilemma' following the unprecedented rise in international gas and energy prices.

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"The YEP Thought Leadership Report allows the Forum to provide an original, thought-provoking intervention into debates on national and global energy policy."
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Clean energy is now often the cheapest and most geopolitically secure option for our energy supply. This report explores the views of young professionals on this changing dynamic and on the nation's progress towards its climate goals.

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Key findings

Affordability

- **90%** of Young Energy Professionals believe that the UK Government is not doing enough to deliver affordability in the short- and long-term.
- YEPs believe that **investing in energy efficiency** is the most important measure to improve affordability.
- In the short-term, YEPs support **protecting consumers and those in fuel poverty** to achieve affordability. In the long-term, **investment in renewables** and **ensuring energy security** have a higher priority.

Sustainability

- YEPs believe that **demand management** is the top priority for the UK Government to ensure long-term energy sustainability. This includes incentivising both energy efficiency measures and low carbon heat networks.
- The UK Government must assist the private sector in **accelerating the rollout of clean energy generation** (nuclear and renewables).

Security of supply

- **80%** of YEPs do not believe the UK Government will deliver energy security in the near-term.
- YEPs support a greater focus on **demand management** as a matter of priority to ensure energy security is achieved in the short-term.
- YEPs also strongly support mitigating future energy supply shocks through **developing new long- and short and long term energy storage systems**, as well as improving the existing UK grid infrastructure.

Looking ahead

- The **most important factor** for YEPs in deciding whether to stay in a current role or apply for a new one is the ability to contribute to reaching Net Zero.
- However, only **30%** of YEPs feel that they are able to contribute towards the development of their organisation's Net Zero policies.

Forum Chair and Vice Chair Remarks



: **Sholan Pillay**

- : YEP Forum Vice-Chair and
- : Portfolio Shaft Line Engineer,
- : RWE Generation

As the YEP Forum we are proud to present our second thought leadership report 'Tomorrow's ideas, today: Resolving the Energy Trilemma'.

The past year has undoubtedly been one of the most turbulent in the energy industry's history. The market uncertainty, continuous price rises, and cross-economy impacts have shed even more light on the necessity of creating a robust and futureproof energy market. While the transition to Net Zero is already underway, it is undeniable that more needs to be done, and the results of this year's YEP survey showcase the idea that most young professionals feel the need to accelerate the drive for change if the UK is to reach its Net Zero targets.

As a result of the crisis, the energy industry has increasingly focused on building a forward-thinking industry that considers the needs of all its customers on the path to Net Zero.

“This thought leadership paper allows members of the YEP Forum, the future leaders, to give their views and be part of the conversation.”

We believe young people have a huge part to play in driving the transition, today and in the decades to come. This thought leadership paper allows members of the YEP Forum, the future leaders, to give their views and be part of the conversation. With this in mind, the YEP Forum decided to take a fresh look at a long-standing issue within the industry – the Energy Trilemma - through the lens of the current climate.

Working with CGI consultants and the CGI text analytics tool, WordNerds, we used the data gathered from the survey to build this report, highlighting key points and recommendations from the responses.

When looking back at the past year and reflecting on the impact of the energy crisis, the need to maintain the long-term vision and decarbonise the UK's energy system becomes more apparent than ever before.

This year's report, 'Tomorrow's ideas, today: Resolving the Energy Trilemma' explores how the recent events have reinforced the need to focus on long-term affordability, sustainability and security. Now is the time to build on the momentum and create a fairer, greener, and more stable energy market in the years ahead.



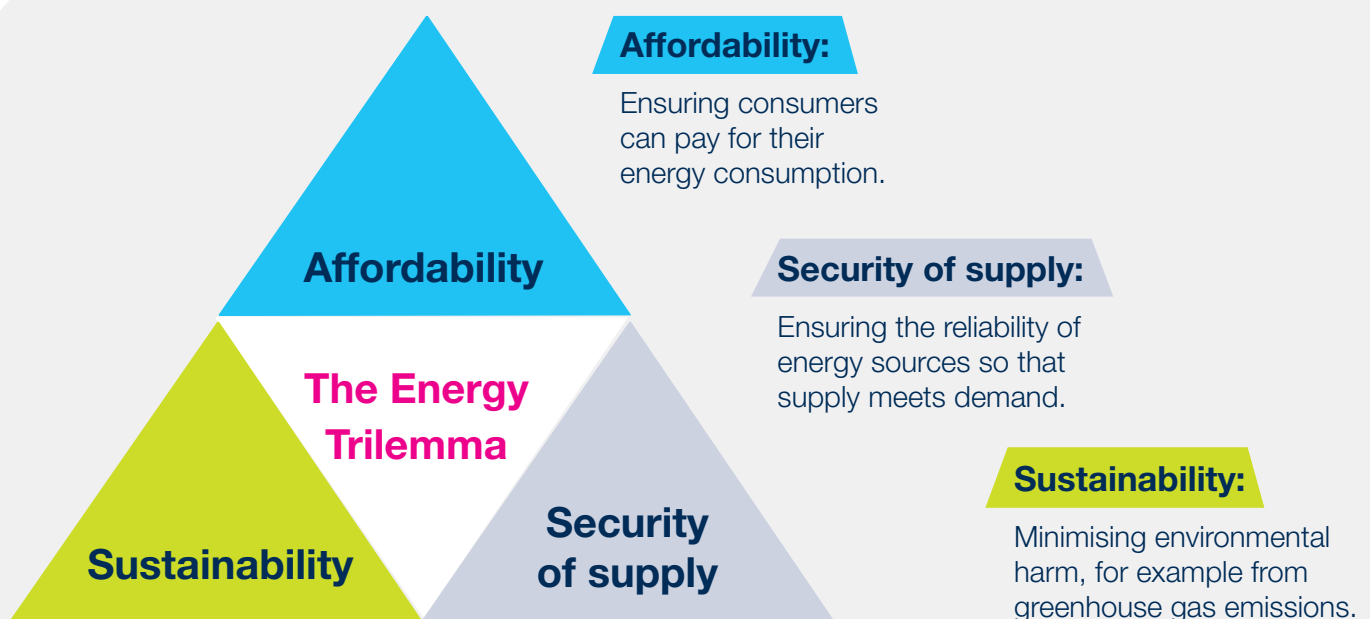
: **Caroline Gundu**

- : YEP Forum Chair and
- : Senior Business Consultant, CGI

Young Energy Professionals and the Energy Trilemma

Background and aims

The Energy Trilemma is the fundamental issue for energy policy. How we balance the key issues of sustainability, security of supply, and affordability defines our response to the climate crisis and the global shift towards Net Zero.



This report highlights the views of Young Energy Professionals (YEPs): members of our industry with fewer than 10 years of experience.

This generation will be responsible for leading the world's shift to Net Zero by 2050, and producing this report enables our voices to be heard.

We set forward our recommendations for each pillar of the Energy Trilemma for both the near-term and long-term, with the intention of leading the conversation. In doing this, we aim to **capture the voice of a generation that sees Net Zero as not just government policy, but the defining issue of our time.**

This report marks the YEP Forum's second foray into capturing the views of our members. By producing these annual thought leadership reports, we highlight the work, views, and importance of young professionals in the energy sector.

Methodology

The survey

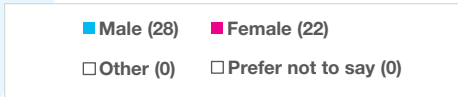
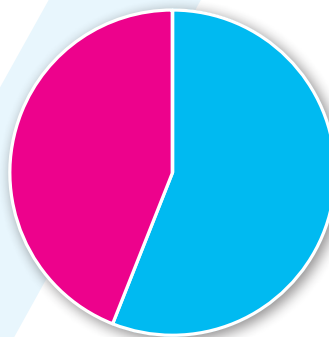
The YEP Energy Trilemma survey was open between 18 July – 13 September 2022. Eligible respondents were anyone with up to 10 years of experience in the energy sector. This survey received 50 responses and forms the basis of this report.

Breaking down the respondents:

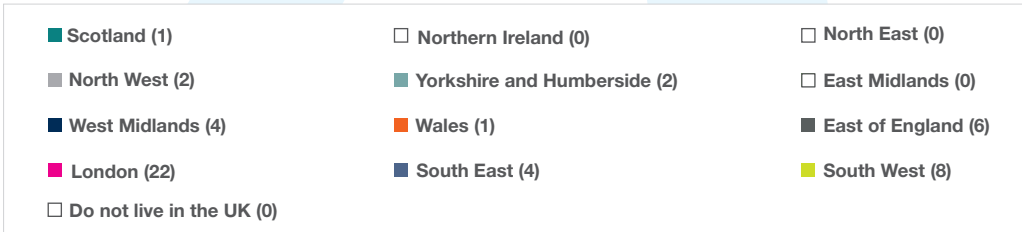
Experience Level



Gender



Region

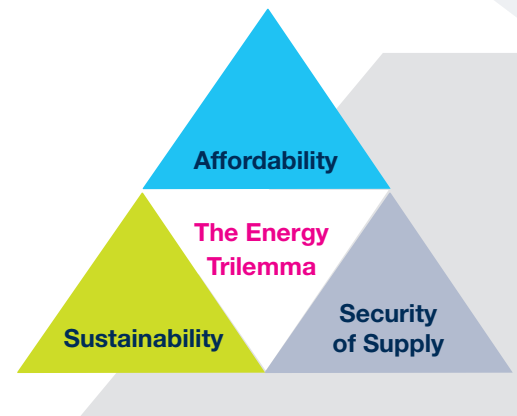


Respondents were also asked to provide their job title (e.g. analyst, engineer) and area of work (e.g. nuclear, renewables).

Methodology continued

The survey consisted of ranking and open text questions. These were arranged along the pillars of the **Energy Trilemma: Affordability, Sustainability and Security of Supply**¹.

An additional section, called **Looking Ahead**, highlighted our broader views on being young professionals in the energy industry today. Questions were grouped by timescale, with respondents asked about their views on both near-term (i.e. between now and the mid-2020s) and long-term (i.e. between now and the mid-2030s) deliverable actions on the Trilemma.



Similar to previous reports, the writing of the survey is the result of a collaborative effort between the Energy UK YEP team and a working group from the YEP Forum Steering Committee. This was then distributed to eligible respondents by Energy UK, the YEP Forum Steering Committee and supporting organisations, including CGI and Opinium.

The report

Quantitative findings from the survey have been analysed by the Energy UK YEP Team and the YEP Steering Committee Working Group on this report. As well as highlighting opinions from YEPs on each question, the report delves into interesting relationships between responses and the region, experience level and/or job title and sector.

Qualitative findings from open-ended questions have been analysed and grouped together by CGI through use of their text analytics and insight software, **WordNerds**. The Energy UK YEP Team have also individually selected particularly interesting suggestions from respondents.

Through this report, **we provide a platform for creativity, innovation, and bold solutions** to current problems.

With thanks to the YEP Forum Secretariat and Steering Committee Working Group:

Robert Birch, Darcy Collings, Yumann Siddiq, Caroline Gundu, Sholan Pillay, Toni Heijbroek, Phil McNally, Connie Thorn, Stephen Roberts, Lauren Snoxell, Sanjanaa Achar, Paloma Esteve Campos, Mark Williams, Issy Mangan, Aradhna Tandon and Vasundra Chopra.

CGI Finally, thank you to the **CGI Digital Advisory Team** for providing text analytics services (TAS) to support the completion of this report.

¹ As defined by Dr. Jonathan Clarke (2021) 'What is the Energy Trilemma and how could it help form policy that will insulate the UK from future energy disruption?'. Available at: https://warwick.ac.uk/newsandevents/knowledgecentre/society/politics/energy_trilemma/

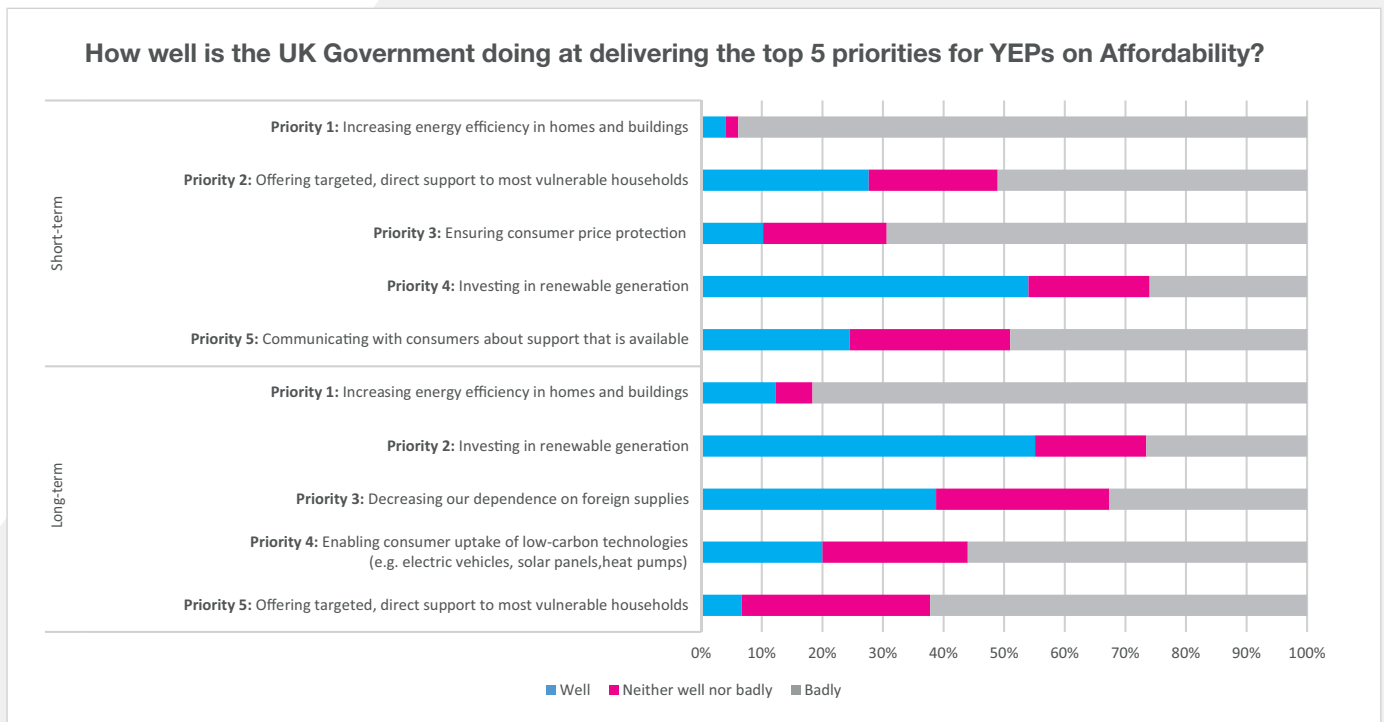
Affordability

Ensuring consumers can pay for their energy consumption.

▶ We asked YEPs how well they thought the UK Government was doing in addressing energy affordability in both the near-term and long-term.

- **88%** of respondents believe the Government is not doing enough to address affordability in the near-term.
- **92%** of respondents believe the Government is not doing enough to address affordability in the long-term.

▶ We asked YEPs how well the UK Government is doing on delivering affordability in the following areas:

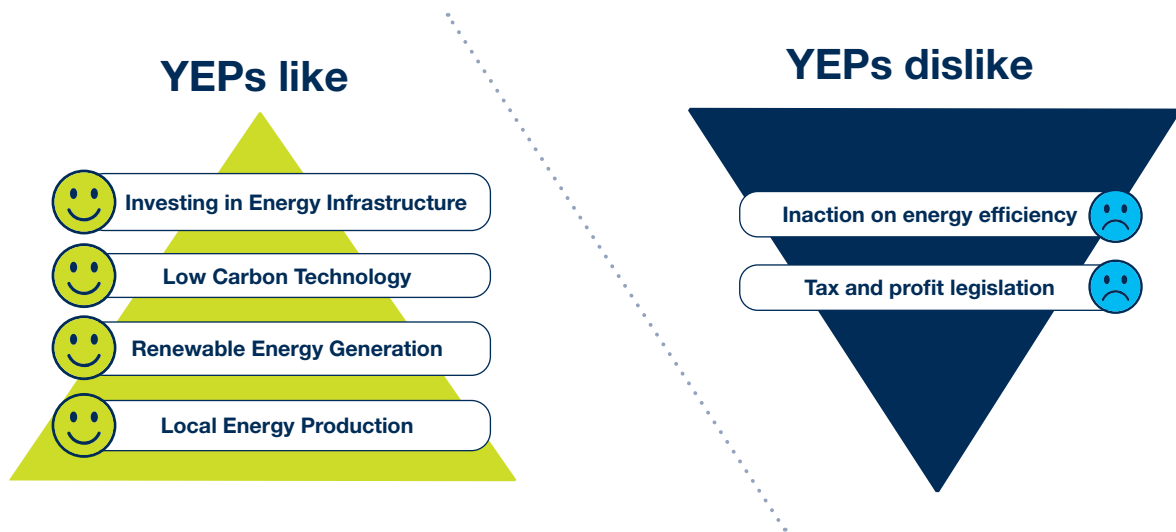


Note: The survey was closed on 13 September 2022; the Energy Price Guarantee was only announced on 8 September 2022. This helps to explain the low level of confidence in targeted support for vulnerable consumers.

- **54%** of respondents believe that the UK Government's rollout of renewable energy infrastructure is going well.
- **92%** of YEPs believe the UK Government is not doing enough to drive energy efficiency rollout in the near term. **80%** also believe the Government is not doing enough in the long-term.

Affordability continued

- ▶ We asked YEPs to highlight actions the Government can take in the long-run to boost UK energy affordability.



- ▶ We asked YEPs to give us examples of where, either locally, nationally or internationally, policies have been implemented that demonstrate good practice on delivering affordability.

YEPs highlighted specific countries the UK could look to for inspiration to deliver affordable energy:

- **France** has invested heavily in clean technology, with more than 92% of the nation's energy needs provided by nuclear and renewables². These are, increasingly, cheaper than fossil fuel sources.

YEPs identified the following examples for improving affordability:

- The “**Contracts for Difference scheme** has rapidly brought down the costs of renewables in the UK.”
- YEPs highlighted the **Energy Superhub Oxford**, The **Exeter Passivhaus schemes**, and Fife Council's partnership with the **Glenrothes Heat Network linked to Markinch Biomass Power Station** as examples of best practice for improving affordability at a local level.

YEP Recommendation

Young energy professionals have little trust in the UK Government's existing plans to deliver energy affordability.

In particular, there is an ongoing failure to substantially address energy efficiency – our top priority for reaching a lower consumer bill in both the short- and long-term. At the same time, YEPs recognise, and approve of, the ongoing commitment to renewables and efforts made to increase the domestic supply of energy.

We recommend rapid government intervention to address this policy deficit and bring energy efficiency to the forefront of delivering affordability.

² International Atomic Energy Agency (2022) 'Country Nuclear Power Profiles: France'.
<https://cnpp.iaea.org/countryprofiles/France/France.htm>

Sustainability

Seeking to minimise environmental harm in energy production, use, and storage, for example by reducing emissions of greenhouse gases and other pollutants.

▶ **We asked YEPs how well they thought the UK Government was doing in addressing energy sustainability in both the near-term and long-term.**

- **90%** of YEPs think the UK Government is not doing enough to deliver sustainability in the near-term.
- This falls to **82%** of YEPs when considering the Government's longer-term strategy to deliver sustainability.

▶ **We asked YEPs, if they could choose actions for the UK Government to deliver energy sustainability, what would they do?**

Near term

▶ Invest in **network and grid infrastructure** to help facilitate the anticipated future increase in electricity demand.

▶ Speed up the implementation of a **national nuclear programme**.

▶ Invest more in **tidal and wave renewables**, with the aim to export this expertise globally, along with utilising the technology in the UK.

▶ Remove planning restrictions on **onshore wind in the UK**.

▶ Further **develop support schemes** for consumers enabling low-carbon domestic solutions, such as for energy efficiency and low-carbon heating appliances.

Long term

▶ **Develop a long-term plan for home decarbonisation** to create sustained demand for home insulation and low-carbon heating.

▶ **Reform energy markets** to better reflect the characteristics of low-carbon technologies and accelerate investment.

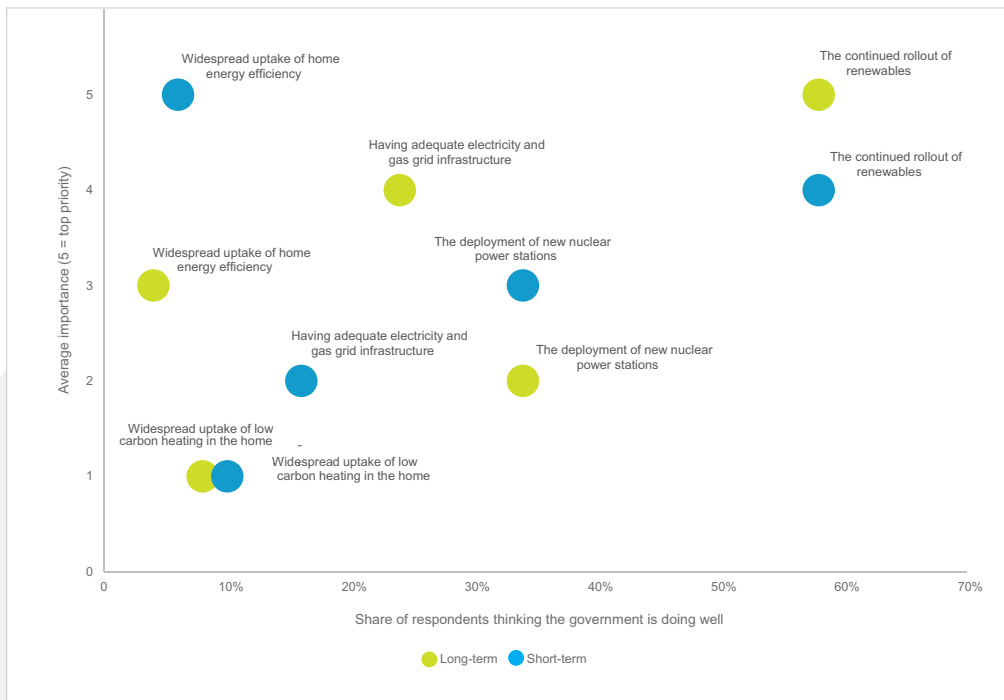
▶ **Large scale investment** in nuclear, wind generation, green hydrogen, direct air capture and carbon storage.

▶ **Expand grid infrastructure to support the electrification of transport** and support other low-carbon transport solutions where possible.

▶ Ensure the long-term sustainability of **carbon capture usage and storage**.

Sustainability continued

- We asked YEPs how well the UK Government is doing on delivering sustainability in the following areas:



- We asked YEPs to give us examples of where, either locally, nationally or internationally, policies have been implemented that demonstrate good practice on delivering sustainability.

Canadian Nuclear

“Canada has been doing well at developing nuclear power generation and creating public awareness. Canadian companies are also empowered to build international and diverse teams as the Canadian government has eased the immigration process. Firms can access the most able of the international labour market, allowing them to develop revolutionary solutions for energy transition in mid-long term.”

Contracts for Difference (CfDs)

“CfDs are a great example of governments providing clear policy support for renewable and sustainable technologies, which has triggered the widescale deployment of offshore wind around the UK. Similar policy support for other technologies and future solutions (such as Carbon Capture and Storage) is also required and needed in the near term to enable rollout in the long term.”

Dutch Heat Networks

“The Netherlands has invested in heating networks in towns and cities. These utilise redundant mine networks which are pumped with hot and cold water. The water temperature is increased via renewable technology such as solar, which helps retain this heat via the mine's natural geothermal gradient. The water is then pumped around the network, providing hot water and heating in the cold months and cool water and cooling in the warmer months.”

YEP Recommendation

Young energy professionals urge the UK Government to accelerate investment in renewables to ensure near- and longer-term energy sustainability. We find clear support for mature technologies such as onshore and offshore wind, as well as less mature technologies such as wave and tidal power. YEPs believe there are many paths the Government can take to promote sustainable power generation.

YEPs also believe that communication with the public is key to building a sustainable future in both the near- and long-term. Consumer-led solutions, such as the management of home energy consumption or the adoption of green behaviours and tendencies, are paramount to achieving energy sustainability, and cannot be achieved at scale without widespread public buy-in.

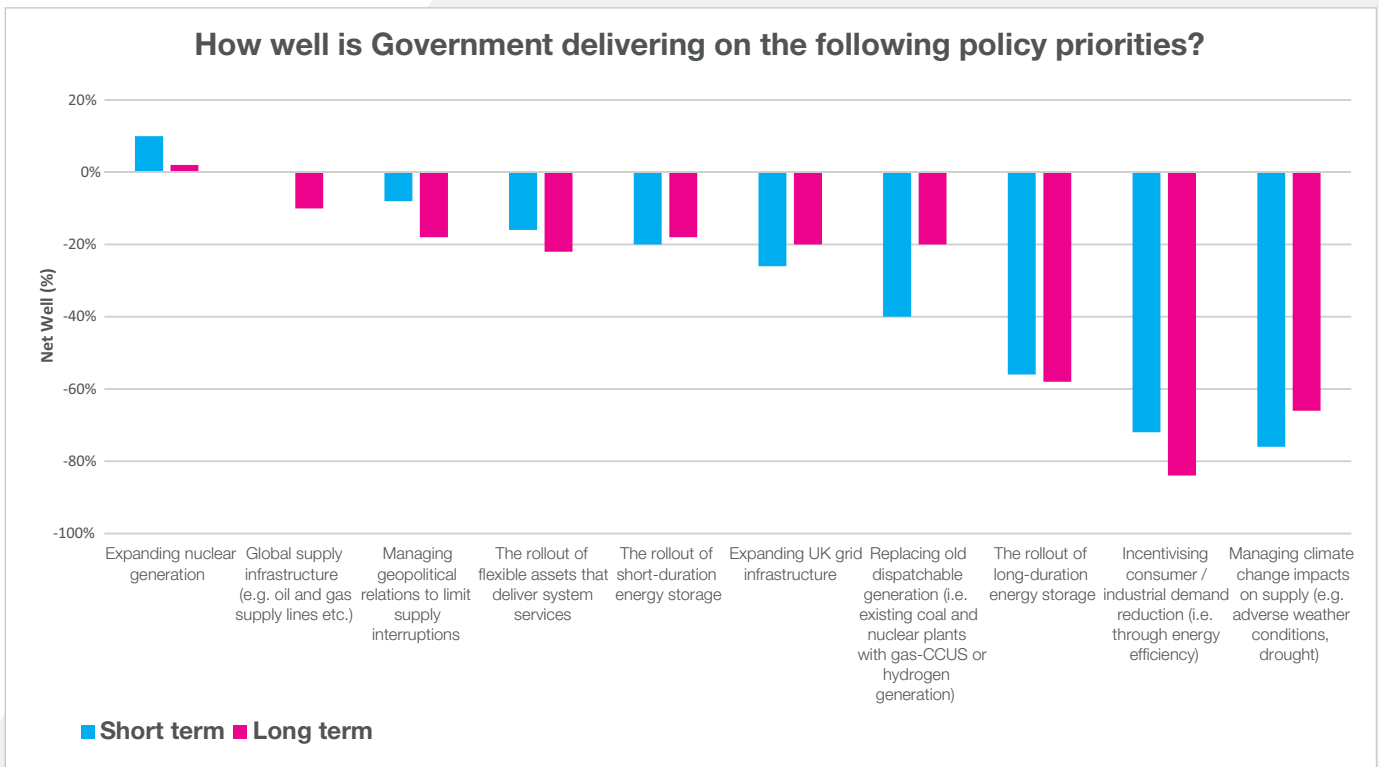
Security of Supply

Seeking to ensure a reliable supply of energy, regardless of changes in price and adverse geopolitical events.

▶ **We asked YEPs how well they thought the UK Government was doing in delivering Security of Supply in both the near-term and long-term.**

- **80%** of respondents think that the UK Government is not doing enough to ensure security of supply in the near-term.
- **88%** of respondents believe the UK Government is not doing enough to ensure energy security in the longer-term.

▶ **We asked YEPs how well the UK Government is doing on delivering Security of Supply in the following areas:**



▶ **We asked YEPs why they supported a greater focus on primary domestic energy production in the short-run.**

<p>Decrease the reliance on non-renewable sources of energy from other countries to support future sustainability.</p>	<p>Focusing on domestic energy production to help create local job opportunities to support economic growth.</p>	<p>Reduce the UK's reliance on imported energy, avoiding volatile currency fluctuations and becoming more geopolitically resilient.</p>	<p>Influencing UK economy growth through increased net exportation of energy to external connected networks.</p>
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Security of Supply continued

- We asked YEPs that if they could choose three actions for the Government to take to deliver Security of Supply, what would they pick?

Checklist for Government

Near term

- Priority 1**
Introduce demand management systems for consumer and industrial use, for example making energy efficiency measures an attractive investment.
- Priority 2**
Expand domestic nuclear generation by supporting investment in large-scale nuclear projects, where cost effective, and creating a market for small-modular nuclear reactors.
- Priority 3**
Enable anticipatory investment for grid infrastructure so the system will be ready to accommodate forecasted future demand increases.

Long term

- Priority 1**
Focus on using international diplomacy to ensure security of global energy infrastructure and supply chains.
- Priority 2**
Develop investment mechanisms to support the deployment of long-duration energy storage.
- Priority 3**
Incentivise demand management policies, for example by building out infrastructure for electric vehicles and introducing Time-of-Use tariffs.

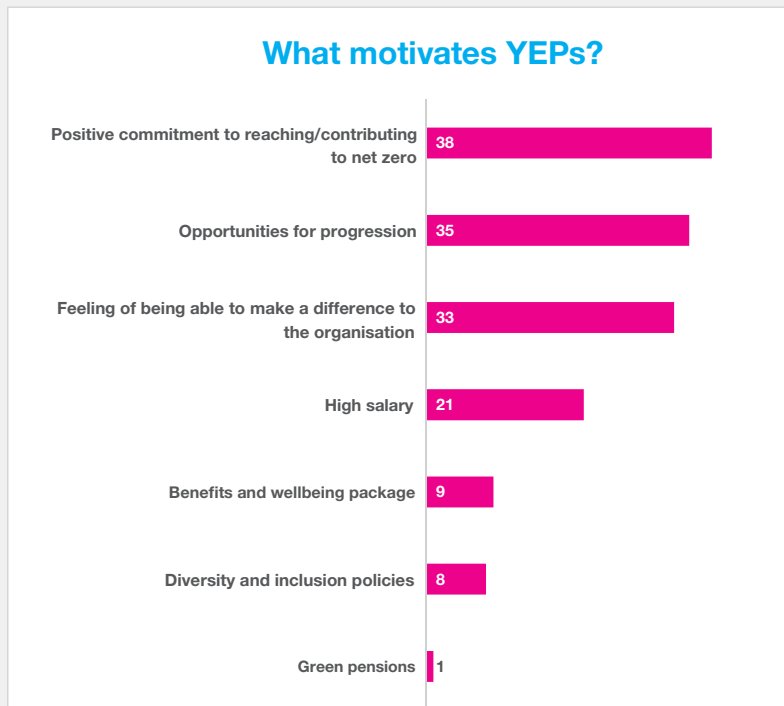
YEP Recommendations

Domestic clean energy production must be ramped up in response to ongoing concerns over energy security. New nuclear infrastructure, encompassing both large-scale projects and smaller reactors, must be deployed. Nevertheless, the Government cannot lose sight of the need for demand-side reform in both the short- and long-run. Not only is this a major priority, 76% of YEPs do not think these reforms are being delivered to the level required.

YEPs also want the Government to improve energy storage measures as a matter of urgency, helping to ensure supply shocks do not return in the future. This should be coupled with improving the UK's existing grid infrastructure to mitigate future pressures on the system as, for example, electric vehicles continue to be rolled out.

Looking ahead

- ▶ We asked YEPs what are the most important factors when deciding whether to stay in their role or apply for a job in another organisation.



- ▶ We asked YEPs whether they believe they are able to contribute to their organisation's Net Zero ambitions.

- Only **52%** of YEPs feel that they are able to contribute towards their organisation's path to Net Zero: **30%** of young people feel to some extent powerless in their organisations.

- ▶ What does best practice look like when getting YEPs involved in planning for Net Zero?

- **Sustainability working groups** exist across many organisations which help to provide clarity around Net Zero policies and ambitions.
- **More conversations are required** around the serious consequences from the impact of the potential energy shortages.
- There is an existing focus on renewables but **not enough focus on reducing emissions** and incorporating green technology.
- **Regular meetings** should take place within organisations including staff of varying levels, to allow for wider thoughts and contributions.
- Great **cultures of empowerment and involvement** exist across different organisations.

Conclusion: Resolving the Energy Trilemma

The events of 2022 have demonstrated to critics the enduring usefulness of the Energy Trilemma model. After years of relatively low and stable energy prices, increased demand for energy as economies recovered from the Pandemic led to rising prices through Winter 2021-22.

The supply-side shock of the Russian invasion of Ukraine only exacerbated this trend as Europe's supply of oil and natural gas collapsed. In the UK, rising prices have led to a cost-of-living crisis and even sparked political debate over extending the deadline for achieving Net Zero.

The Trilemma is key to understanding energy policy: our economic system relies upon everyone being able to have readily-available energy at a reasonable price, with Net Zero targets taken into account. Without sustainable energy, we would cause lasting damage to our planet; however, without ensuring energy is affordable, millions of people may struggle to heat their homes.

Clean energy is now the cheapest form of energy to produce. As a result, YEPs see a solution on the horizon for the Trilemma. Innovation and investment in renewables and nuclear must be further incentivised to ensure a reliable, sustainable and affordable energy mix for British consumers.

Nevertheless, this report shows that YEPs are highly critical of the **lack of focus by the UK Government on demand management**, in particular energy efficiency and electric vehicle infrastructure. We highlight this as a priority across the Trilemma, with a particular focus on the rollout of energy efficiency measures.

We also urge organisations to involve YEPs in making decisions about Net Zero targets. Although work has begun, this report finds that there is plenty more that the sector can do to leverage the skills of YEPs to move towards a more affordable, reliable and green future.

Resolving the Energy Trilemma remains the key to achieving the UK's Net Zero ambitions.

YEP Recommendations





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