

# New build energy infrastructure Key challenges

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To move away from the use of fossil fuels in everyday activities, such as transport and domestic heating, countries must be willing to embrace electrical energy alternatives. This ambitious target will require huge investment and change across all sectors, however it is the energy sector that is set to undergo the most radical change as countries scramble to reshape they generate and distribute power.

## The current landscape

Although countries are at different stages in their adoption of cleaner energy, all the trends we're seeing across the world are pointing to one thing - a low carbon future.

We're also seeing an increase in the use of electricity, especially in areas such as transportation and domestic heating where electric options are growing rapidly. In areas where electricity isn't a suitable alternative to fossil fuels, we're seeing fuels like hydrogen being more widely adopted, and energy from clean sources such as offshore and onshore wind farms, as well as solar generation.

Perhaps more notable is the apparent shift towards to nuclear power. Though nuclear power produces water waste, the long life time of power plants, and low carbon nature of nuclear energy means that the carbon life cycle is lower than many energy generation methods.





# The need to increase power generation capacity

Although hydrogen is a good alternative to fossil fuels, the way in which it is produced requires energy, and therefore puts added pressure on power generation capacity.

Wind power requires fixing turbines to the seabed in the case of offshore farms, but if the geology of an area isn't suitable, there's the added challenge of floating the turbines. In addition to this, there are other considerations such as cabling, and in the case of onshore wind farms, different wind loads, existing infrastructure, and agriculture.

In the case of solar farms, the positioning of panels and the land around where they're being installed must be considered in order to achieve maximum efficiency. If livestock were to be introduced to the surrounding land, for example, then there's the potential for infrastructure damage which needs to be planned for and addressed.

Indeed, there are several challenges that have the potential to stand in the way of new build energy infrastructure, but with proper planning and proactive risk management, power generation capacity can be increased globally.



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# **3 risks and challenges of new build energy production**

### **1. Availability of** technology and experts

The primary challenge in the new build energy production space is the availability of technology, the people who understand it, and the experts and technicians who can design and install it as per project requirements. If the number of new projects coming online is going to increase at the rate that is being projected to meet global low carbon targets, then there is likely to be both a shortage of skilled personnel and a shortage of production capacity to meet the demands of those new projects.

### 2. Compromised supply chains

An increasing reliance on new technologies due to the demand for renewable energy could lead to supply chains being compromised. Depending on the pressures faced by firms, it may be the case that counterfeit parts and other suspect items could work their way into it, meaning that they must then be identified before they impede the effectiveness of projects or the operation of equipment.







### **3. A lack of energy** storage infrastructure

Fossil fuel plants provide a consistent and predictable amount of energy; renewables do the opposite due to fluctuations that are difficult to forecast. To offset this lack of predictability and the natural fluctuations in wind, sunlight, and other natural sources, more energy storage infrastructure needs to be made available. Without it, efforts to increase renewable energy production may be largely wasted.





# The role of inspection services

As we move towards a low carbon future we must embrace the newer technologies that are coming to market to help us achieve our carbon reduction goals. Remote visual tools, data analytics, and artificial intelligence are now playing an important role to help firms extract value from their data and identify potential areas of concern.

**Whenever possible, service providers should use** emerging technologies such as remote tools and AI to adopt a remote-led approach and cut down the need to travel and carry out physical inspections, and therefore contribute to a reduction in overall carbon.





# Why LRQA

LRQA's experts work with you to integrate changes that support your transition to cleaner energy, operations and asset life cycles. We cover many areas including renewable energy production and distribution, wind power and hydrogen, and have the knowledge and expertise to help you meet your sustainability ambitions. We'll help you comply with tightening regulations, improve your carbon footprint, and drive efficiency.

We operate in 90 countries, cover almost every sector, and are recognised by over 30 accreditation bodies worldwide. Our highly trained surveyors are leading experts in their sectors and technologies, and they're authorised to undertake reviews in accordance with global and regional industry standards, deploying knowledge of certification, inspection, assurance and training.



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We're proud of our heritage, but it's who we are today that really matters, because that's what shapes how we partner with our clients tomorrow. By combining strong values, decades of experience in risk management and mitigation, and a keen focus on the future, we're here to support our clients as they build safer, more secure, more sustainable businesses.

From independent auditing, certification and training; to technical advisory services; to real-time assurance technology; to data-driven supply chain transformation, our innovative end-to-end solutions help our clients negotiate a rapidly changing risk landscape – making sure they're shaping their own future, rather than letting it shape them.

### Get in touch

Visit www.lrqa.com/uk for more information, email enquiries.uk@lrqa.com or call +44 121 817 4300



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