

'BioLPG is already available on the market today in finite quantities, which will steadily increase to achieve the 2040 vision'



Pat Ardis,
MD of
CamGas,
shares
the most pressing issues

Alternative green solution for off-grid heating and at what cost?

'Whilst supportive of the Government's push for green energy alternatives, given the major shift in energy source we potentially face, it would be imprudent not to fully consider the challenges that lie ahead and the need to be pragmatic when considering solutions to achieve our green ambitions.'

'The Government's 'Heat and Buildings Strategy' champions heat pumps as the silver bullet for the decarbonisation of every home within the UK by 2050. Undoubtedly, for new builds in urban areas with a modern electrical grid supply, heat pumps are certainly part of the solution.'

'However, rural overhead electrical supply feeding older, less insulated properties and off-grid parks will pose a much greater challenge. Upgrading park pitches to accommodate the electrification of caravans and lodges would require 120-130 amps per pitch. Potential EV charging points and hot tubs would add an additional 32 amps requirement per pitch, giving a total electrical requirement per pitch of 120-160 amps.'

'Existing park power supply generally allows 16-30 amps per pitch, which unfortunately falls a long way short of the requirement for full electrification. A full upgrade to a park's electrical system would be required to bridge this gap, with all its associated costs. The electrical upgrade cost per pitch to accommodate 120-160 amps carries a twin cost - external grid supply and the internal upgrade at each individual pitch - both of which could fall on park owners.'

'Whilst our experience lies in LPG supply, not electricity, we sought feedback from several park owners which was interesting and varied, particularly when considering future EV charging at parks.'

'One shared concern was if the electrical supply to accommodate all caravans and some additional EV charging units is internally upgraded, could the national grid cope and respond with increased supply?'

'The general conclusion from park owners was they were not convinced their energy providers could guarantee that additional power would be available in order to warrant the substantial investment for the upgrade.'

Likely investment costs

Internal costs

'Some might start by asking how long is a piece of string or cable, as electrical cable runs govern the overall cost of the internal works. This will vary depending on the individual park set-up.'

'Considering an average cost is currently £900/£1000 for a standard 30 amp supply to a single pitch, it is estimated that to provide a 120-160 amp supply to a pitch will cost approximately £2,000-£3,000. These costs exclude transformers at £18,000 each, civils and landscaping etc., which do not come cheap and there is also the customer disquiet with development work to consider.'

External grid provider costs

'It's no surprise that this question is more difficult to answer. One recent example we have come across was where a park owner who recently provided car charging facilities paid £112,000 for a 600 kVA supply which has the capacity of furnishing 18 charging points. This equates to £6,222 per charging point. The owner would have liked to provide more charging ports, but 600 kVA was the maximum power available from the national grid.'

'In a second example, a park requiring power to a new 50-pitch extension to an existing park was quoted £1 million for a transformer, with the upgraded electric supply having to be brought in from just one mile away.'

'Many of the upgrade costs to parks' electrical supplies still remain guestimates. While doubts remain as to the national grid's ability to service the additional demand the park industry would add, there is little doubt that parks will carry the significant costs in making the required electrical upgrades.' ➤

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Green alternatives

'Many members reading this article may be nodding in agreement with the potential viability and real-world challenges in upgrading electrical supplies. At the same time, I am sure most would agree we cannot downplay the need to be fully committed to reducing both our personal and business carbon footprint. Although clearly the current one-size-fits-all electrification pathway to rural communities creates more questions than answers.'

'The good news is that there is an extremely viable energy solution for all off-grid energy consumers, including parks, that offers a substantial reduction in carbon emissions that is already in place.'

'BioLPG or BioGas as already mentioned is a drop-in fuel which fully utilises all current assets such as bulk tanks, cylinders, appliances, internal/external pipework and all aspects of the current LPG supply chain.'

'For those currently using LPG for their park heating, there is a next to zero infrastructure cost in converting to BioLPG due to it being molecularly identical to the LPG currently in use.'

'LPG in its current form is the lowest carbon footprint of all fossil fuels - when compared to coal and oil CO₂ emissions, LPG offers a 33% and 12% reduction respectively. The transition to BioLPG and BioGas improves on this, offering a considerable reduction in CO₂ emissions.'

'The difference is in the production process. Depending on type of feedstock used, BioLPG can cut emissions of greenhouse gases by up to 80% compared to regular product, usually made during refining crude oil or obtained from natural gas deposits. This saving, along with its drop-in capability, will allow BioLPG and BioGas to play a major role in the future energy mix for all off-grid UK energy consumers.'

'In 2019 Liquid Gas UK launched its vision, laying the marker for the industry to fully transition to 100% BioLPG by 2040. The vision set out how BioLPG can act as a key transitional fuel in the short term as it is an affordable and non-intrusive carbon friendly fuel.'

'BioLPG is already available on the market today in finite quantities, which will steadily increase to achieve the 2040 vision. Liquid Gas UK also commissioned an analysis for potential pathways for BioLPG over the next 20 years. The report demonstrates how a full switch to BioLPG from fossil LPG is consistently feasible¹.'

'Several big BioGas projects are currently underway, with one being based in the UK. These major investments fully endorse Liquid Gas UK's commitment of achieving 100% BioLPG. It's a remarkably exciting time for the liquid gas industry as everyone looks forward to playing a major part in helping rural communities and stakeholders transition towards a zero net carbon future at zero cost.'

'The cost of upgrading the grid to accommodate one and a half million homes was £7 billion - including parks' off-grid requirements, the cost is in excess of £10 billion, equivalent to £4,700 per home. It should be noted that these major costs to upgrade the grid do not include the rural industry and commercial premises that presently are huge consumers of LPG, oil and coal. Once these additional markets are added into the mix, costs would far exceed £10 billion!'

'The big question is asking off-grid consumers, domestic homes, parks and businesses to fund the electrification route to zero carbon on the understanding the grid will fulfil their energy supply requirements.'

'I fully endorse the Government's net zero pathway. However, I strongly disagree with a one-dimensional electrification route, as I do not believe the transition to full electrification is a light switch that can be simply turned on.'

'The Government keeps referring to an energy mix whilst pushing a fully electrified heat pump route. This ignores the many pitfalls that the electrification only pathway will create, particularly for off-grid communities.'

'Would I be reasonably confident that the grid will be willing to finance the associated cost of upgrading the rural supply to accommodate all electric appliances? No. It's therefore most important that everyone who shares these concerns works together to convince the Government that there is a readymade BioLPG transitional pathway, allowing a route towards zero carbon at zero cost.' ■