Air conditioning and climate change: The elephant in the room?

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The International Energy Agency (IEA) predicts that around two thirds of the world's households could have an air conditioning unit by 2050. As we see climate change continue to affect the planet and we experience increasingly extreme weather and hotter summers, the need for air conditioning to provide some relief is becoming greater.

However, through increased use, the impact air conditioning has on global emissions and climate change also becomes much greater. A catch 22, which many countries are experiencing, with Dr Fatih Birol, Executive Director of the IEA, saying it is one of the most critical blind spots in today's energy debate.

So why aren't the effects of air conditioning being discussed more? And what are the plans to mitigate their impact on global emissions?

Are we too reliant on AC?

Current air conditioning units that are available on the market are relatively cheap to purchase, easy to use and do the job they are required for. However, it is important to bear in mind that for the most part, air conditioning units have not changed much since their invention in 1931. With air conditioners' power consumption exceeding that of most appliances, it puts a huge strain on our power grid, particularly in the summer months. As these appliances work to make inside cooler, they also make outside warmer through increased emissions heating up the planet. The IEA projects that by 2050 worldwide air conditioning will produce 2 billion tonnes of CO2 a year.

During last year's COP26 conference, discussions around the impacts of air conditioning were left off the agenda despite the impact it has on Greenhouse Gas emissions. However, 14 countries signed a pledge initiating a Product Efficiency Call to Action to double the efficiency of air conditioners, fridges, lights, and industrial motors. With these products consuming more than 40% of global electricity, ensuring their efficiency can play a key role in mitigating the impacts they have on the environment.

As the worldwide demand for cooling continues to grow, air conditioning will play a significant role in helping countries mitigate the impact of rising temperatures. This is increasing the demand for more carbon friendly AC units, and in 2018 a $3m initiative backed by Sir Richard Branson sought to find a residential cooling technology that had at least five times less climate impact than standard AC units and could cost no more than twice the baseline cost of one. The winner was announced just last year, and we are now faced with convincing the world that the old technology needs replacing.

However, until this technology becomes mainstream, we still need to find ways to reduce our growing need to pop the air con on. One of the most impactful ways to do this is through investing in building and retrofitting buildings to be more energy efficient; so they keep cool in the summer and warm in the winter with little energy use. In addition, innovations in smart meter technology allowing you to see how much energy you are using and give you an insight into the impact your use could help in managing building temperature and avoid unnecessary waste, without costing the planet.

As the issue of air conditioning systems and their impact on global warming continues, governments and policymakers worldwide should be looking into how we can change the way we use these cooling systems and what the impact will be on the climate if we continue to ignore the current issue.

Impact on our health

If carbon efficient technology is struggling to take off commercially, we must turn to government and policy makers to put regulations in place that will change the way we use air conditioning. Although, it is unrealistic to ask nations to reduce the use of cooling systems, particularly as temperatures rise to unprecedented levels, the risk to population health and the impact on the economy would be overwhelming. In a world where we are still living through the impacts of Covid-19, we understand all too well the affects poor health can have globally and economically. Choosing to reduce the use of air conditioning would cause issues for health institutions worldwide as people struggle with the heat.

The long-term impact of the Covid-19 pandemic is also worth considering. As life starts to return to normal for many countries, and organisations return to the office, many have chosen to move to a hybrid working system. With offices opening every day at full operations but for a reduced number of staff, this may have a negative impact on the environment. Particularly, as Europe moves into its warmer season, it must be considered what the impact of running a full air conditioning system for a reduced number of people has on global emissions.

What can organisations do?

With not enough discussion on this at policy level organisations need to consider what they can do on an individual basis to mitigate these effects.

Keeping up with the maintenance of these systems to ensure they are running efficiently for the type of building you have, will play a key role in reducing unnecessary energy waste. Ensuring systems are compliant with TM44 (https://www.teamenergy.com/consultancy/energy-certificates/tm44-air-conditioning-inspection/) Inspections, which requires cooling systems with a capacity of 12kW or more to have a valid report and certificate in place, can significantly reduce waste through the accompanying efficiency recommendation report.

Additionally, if you are looking to optimise your utility and energy use, an energy audit and survey carried out on your buildings will highlight areas where your company is unnecessarily using energy. Often air conditioning systems can be a large source of waste due to poor controls and lack of building optimisation. Making sure that your systems are optimised for your business requirements will help to reduce the use of energy and carbon emissions.

Final thoughts

The impacts of air conditioning use on global warming are not discussed enough, nor at the moment, are there simple and affordable solutions to this problem. Now over six months on from COP26 and policy

makers and world leaders are yet to address this growing problem. With global health, the economy and the impacts of severe weather all major concerns when it comes to the effects of climate change, we need to take steps now if we want to halt these problems.

So, how do we take the steps needed to reduce the effects of air conditioning on climate change? How do we put this blind spot in our energy debate at the centre of our discussions? Most importantly, what are we waiting for?

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Notes to Editors

For further information, please contact:
Charlotte Bland – Marketing Executive
TEAM Energy
Phone: +44 (0)1908 690018 Ext 212
Email: cbland@teamenergy.com
EDW House, Radian Court, Knowlhill, Milton Keynes, MK5 8PJ

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