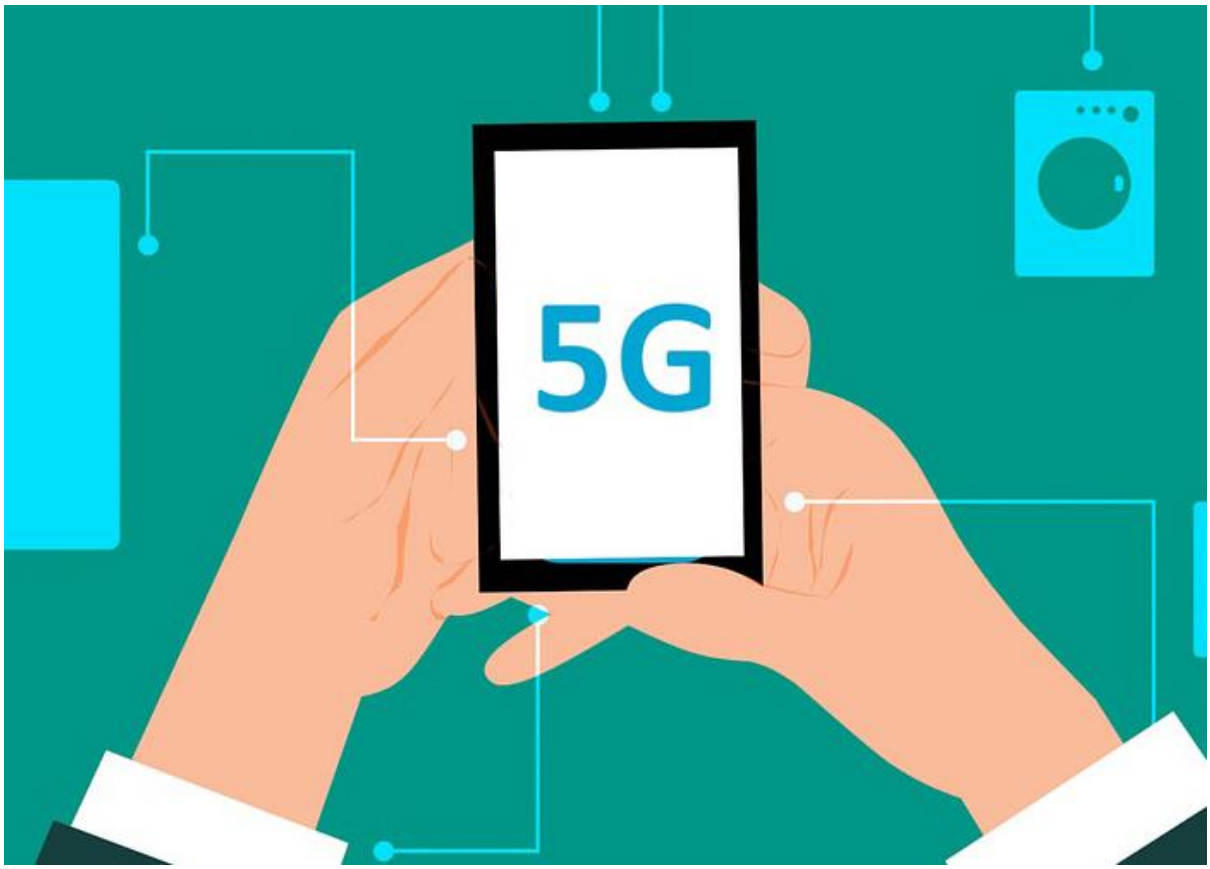
# Report and Recommendations
## from Glastonbury Town Council's 5G Advisory Committee

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**Introduction by Chair, Cllr. Jon Cousins.**

Glastonbury has been described as "*a town that punches above its weight*", influencing other councils and levels of government both locally and nationally.

This is something that Glastonbury Town Council is mindful of when passing significant resolutions – be it anti-fracking, declaring 'climate emergency', banning Glyphosate, or acquiring 'Earth Protector' status – and it is certainly true of our resolution to adopt the Precautionary Principle with regard to concerns about the safety of fifth generation cellular network technology (5G) and its roll-out.

Indeed, within a week of our resolution, Parliament held a Westminster Debate on the subject; Hansard records the opening statement by Tonia Antoniazzi MP: "*This Westminster Hall debate is timely. It comes on the back of an historic decision by Glastonbury Town Council to oppose the roll-out of 5G because of a severe lack of evidence about its effect on the health of those living and working around 5G sites.*" [Hansard 25th June 2019, Volume 662].

In an attempt to explore the merit of our position, Glastonbury Town Council convened a '5G Advisory Committee' comprising of both councillors and non-council members, to report back to the council – with recommendations – during the Spring of 2020.

The Town Council is greatly indebted to the members of this advisory committee, who have met regularly; collected and studied a large volume of literature – and received presentations from a number of academics and professionals, including the Director of Mobile UK, the organisation overseeing the roll-out of 5G in the UK.

As chair of Glastonbury Town Council's 5G Advisory Committee, I can say that this has been one of the most interesting times I have experienced as a councillor. I've also been impressed by the number of councils and local authorities who have contacted me to request copies of the committee's report and recommendations… The deliberations of Glastonbury's committee no doubt a microcosm of the wider debate yet to unfold on a national scale!

On a personal note, I would like to thank Glastonbury's Town Clerk, Gerard Tucker, for his untiring patience, commitment, and dedication to the committee and the process; without which, our task would have been infinitely more difficult.

Cllr. Jon Cousins
Deputy Mayor of Glastonbury April 2020.

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## Section 1: The Report

The 5G Advisory Committee was convened in accordance with:
a) Glastonbury Town Council's Standing Order 46; and
b) Glastonbury Town Council's resolution of the following motion on Tuesday, 11th June 2019:

Proposer: Cllr. Mike Smyth; seconder: Cllr. Jon Cousins.

*This council has a social responsibility to protect the public and environment from exposure to harm, albeit unpredictable in the current state of scientific knowledge, and therefore opposes the roll-out of 5G in the Parish of Glastonbury – based on the precautionary principle – until further information is revealed from a newly convened 5G Advisory Committee (working group).*

**Background information for the resolution:**

- For many months, members of the public have spoken to this council of their concerns about the safety of fifth generation cellular network technology (5G) informing Glastonbury councillors that this technology is hazardous to human health and the environment due to the higher radiofrequency, which can interfere with small cells, like those in the body and in plants.

- In April this year [2019], 5G internet roll-out was postponed in Brussels when Celine Fremault, Environment And Energy Minister, identified that 5G was not compatible with Belgian radiation safety standards of 9 V/m, or 95 mW/m2.5.

  Celine Fremault stated: "*I cannot welcome such technology if the radiation standards, which must protect the citizen, are not respected, 5G or not. The people of Brussels are not guinea pigs whose health I can sell at a profit. We cannot leave anything to doubt.*"

- Also, in April [2019], a planned upgrade to 5G in Geneva was stopped through the application of the precautionary principle, until independent findings on possible health damage become available.

- On 1st May [2019], more than 230 scientists and doctors from 40 countries appealed to the World Health Organisation calling for a moratorium on 5G wireless technology and that the 5G wireless signal should be moved from a Group 2B Carcinogen to a Group 1, the same as asbestos and arsenic.

  Their appeal states: "*We, the undersigned scientists, recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. 5G will substantially increase exposure to radiofrequency electromagnetic fields (RF-EMF) on top of the 2G, 3G, 4G, Wi-Fi, etc. for telecommunications already in place. RF-EMF has been proven to be harmful for humans and the environment.*"

**Establishing the 5G Advisory Committee:**

The purpose of the 5G Advisory Committee being to:

1. Write a report – to be presented to Glastonbury Town Council – about
   a) the committee's findings and conclusions on the safety or otherwise of 5G cellular network technology, and
   b) any proposed actions that the Town Council should undertake as a result of the report.
2. Reinforce, or not, Glastonbury Town Council's resolution to oppose the roll-out of 5G.

On Monday, 1st July 2019, the following eight Glastonbury Town Councillors committed to becoming members of the 5G Advisory Committee:

Cllr. Sue Barnet
Cllr. Jon Cousins
Cllr. Paul Lund
Cllr. Lindsay MacDougall
Cllr. Brian Outten
Cllr. Mike Smyth
Cllr. Ian Tucker
Cllr. Nick Cottle [*who subsequently resigned due to commitments as a Portfolio Holder in the Cabinet of Mendip District Council*]

By virtue of Standing Order 39 – the Mayor, Cllr. Denise Michell became an *ex-officio*, ninth voting member of the committee.

The 5G Advisory Committee's terms of reference were approved at the Town Council meeting of Tuesday, 9th July 2019.

The powers of the 5G Advisory Committee agreed by Council resolution were:

1. Lobbying:
   a. Establish who has the regulatory power to approve the rollout of 5G in the Mendip District, with particular focus on Glastonbury.
   b. Lobby the regulatory power to impose a moratorium on the rollout of 5G in the Mendip District by adopting the Precautionary Principle.

2. Research:
   a. Approach experts to give presentations and specialist advice to the committee on the safety or otherwise of 5G cellular network technology.
   b. Collect evidence demonstrating the safety or otherwise of 5G cellular network technology from robust sources.

On Sunday, 14th July 2019, Glastonbury Town Council published a call, inviting members of the public with an interest and/or expertise in the subject to apply to join the 5G Advisory Committee by sending a written expression-of-interest to the Glastonbury Town Clerk, Gerard Tucker by Monday, 29th July 2019.

All applicants were sent the agreed Terms of Reference together with Glastonbury Town Council's Code of Conduct that all town councillors and town council meetings are required to follow.

From the 20 expression-of-interest applications received, in the first week of August 2019, the nine town councillor members selected the nine members of the public to be invited to join the 5G Advisory Committee and asked to confirm their acceptance by Friday, 16th August 2019.

The non-councillor members of the 5G Advisory Committee:

Christopher Baker
Derek Cooper
Toby Hall
Susan Jones
Roy Procter
Carol Roberts
Sandra Spearing
David Swain
Mark Swann

The initial meeting of the 5G Advisory Committee was held on Monday, 2nd September 2019.

A total of 13 meetings were held over the next six months, the final meeting being held on Wednesday, 4th March 2020.

[A full record of the minutes of the committee meetings can be found in Appendix 5].

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**Library of evidence:**

A library of evidence – containing 57 documents – was collected and curated by members of the committee to demonstrate the safety or otherwise of 5G cellular network technology.

This library was stored electronically and made available for members of the 5G Advisory Committee to use as a learning and reference resource.

[A full list of documents can be found in Appendix 2]

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**Expert presentations were given to the 5G Advisory Committee by:**

**Prof. Martin Pall**, Professor Emeritus, School of Molecular Biosciences, Biotech, Washington State University [from USA via video conference] – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Dr. Andrew Tresidder,** MB BS MRCGP Cert Med Ed. A GP based in Chard, Dr. Tresidder is practitioner health south-west clinical lead, a GP educator, Somerset clinical commissioning group GP patient safety lead, and GP appraiser – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G, and raised concerns around the impact on people who present as electro-sensitive or have Electromagnetic Hypersensitivity [EHS].

**Hamish MacLeod**, Director of Mobile UK and **Gareth Elliott**, Head of Policy and Communications at Mobile UK: Representing the trade association for the UK's mobile network operators – EE, O2, Three, and Vodafone – who both gave evidence against Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Dr. Frank de Vocht**, Reader in Epidemiology and Public Health at the University of Bristol; area of research (Radiation) Epidemiology and Public Health Research – who gave evidence against Glastonbury Town Council's resolution to oppose the roll-out of 5G but raised some interesting points about the issue of electro-sensitivity or Electromagnetic Hypersensitivity [EHS].

**Prof. Tom Butler**, Professor in Business Information Systems at University College Cork and a former IRCHSS Government of Ireland Research Fellow. Prof. Butler is the Principal Investigator of Ireland's Governance Risk and Compliance Technology Centre. [from Ireland via video conference] – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Presentations were also given by the five of the Non-Councillor members of the 5G Advisory Committee:**

**Derek Cooper** – who gave evidence against Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Mark Swann BSC** – who gave evidence against Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Roy G. Procter C.Eng F.R.Ae.S** – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G and raised concerns around the impact on people who present as electro-sensitive or have Electromagnetic Hypersensitivity [EHS].

**Christopher Baker** – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G.

**Susan Jones** – who gave evidence in support of Glastonbury Town Council's resolution to oppose the roll-out of 5G; raising some legal issues and concerns.

[A list of supporting documents from these presentations, and some selected examples, can be found in Appendix 4]

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## Section 2: Conclusions

The Glastonbury 5G Advisory Committee has been unable to come to a unanimous conclusion with regard to the safety or otherwise of fifth generation cellular network technology.

**Issues:**

**The International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines on Limiting Exposure to Electromagnetic Fields**

There was much debate concerning the International Commission on Non-Ionizing Radiation Protection (ICNIRP) Guidelines on Limiting Exposure to Electromagnetic Fields, which fell into three areas:

1) Questions around the integrity, transparency, and bias of the Commission's membership – with the proposition that ICNIRP members were not suitably independent of other regulatory bodies, the mobile phone network providers, and communications industry, and therefore had a conflict of interest.

   Opinion on the validity of these questions and the evidence presented to the advisory committee was strongly contested by some of its members – and answers to the questions remain unresolved.

   According to their website, ICNIRP is an independent non-profit scientific organization; its members being scientists employed typically by universities or radiation protection agencies – who do not represent their country of origin, nor their institute and cannot be employed by commercial companies.
   [ https://www.icnirp.org/en/about-icnirp/commission/index.html ]

2) Debate concerning the robustness of the ICNIRP Guidelines with regard to the **thermal effects** of radiofrequency EMFs, which generate heat in the body and can cause burns.

   Although it's generally accepted by the councillor-members of 5G Advisory Committee that ICNIRP guidelines are attempting to keep heat to a safe level, some councillors question the exposure intensity and exposure duration of the tests used to determine what constitutes 'suitable protection' against the adverse thermal effects of non-ionizing radiation.

3) Deliberation over the **non-thermal effects** of radiofrequency EMFs. This was a source of much controversy during the committee's meetings – and was a key issue for the committee. The contention being whether or not EMFs could stimulate 'voltage-gated ion channels' found in the membrane of cells.

   In his presentation to the committee, Professor Pall described the "*EMF activation of voltage-gated calcium channels*" as a mechanism that allows an excess of calcium ions into cells creating 'free radicals' (aka reactive oxygen species) …a hypothesis which was subject to a strong, robust rebuttal by one of 5G Advisory Committee's members.

However, the subject came up again in a later presentation, when Professor Butler also proposed to the committee that there was a potential for the non-thermal effects of radiofrequency radiation to "*over stimulate an influx of calcium ions into cells, creating free radicals.*"

Professor Butler suggested that the resultant 'oxidative stress' caused by these free radicals could be an important factor in the progression of chronic conditions – such as "*cancer, Alzheimer's, and other neurodegenerative diseases.*"

When questioned about the validity of this non-thermal effect by the committee, Professor Butler suggested that one way to resolve the question would be to undertake an independent scientific study into the impact of high frequency, long duration exposure to radiofrequency EMFs on the levels of free radicals and antioxidants – biomarkers of neurodegeneration – in human subjects.

Interestingly, the potential for an unidentified "*non-thermal mechanism*" – which caused a "*doubling the lymphoma incidence in mice exposed to a low intensity 900 MHz radiofrequency field pulsed at 217 Hz*" – was reported in ICNIRP's 'Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHZ)' [Repacholi, et al. (1997), in Health Physics, p.506, Volume 74, Number 4 – April 1998].

The current ICNIRP Guidelines do reference "*a number of studies of potential adverse effects of radiofrequency EMFs on physiological functions that could adversely affect health*" including "*membrane ion channel currents and input resistance, Ca2+ [calcium ions] dynamics… biomarkers of neurodegeneration… and oxidative stress-related processes*" – but discounts them as "*their relevance to health has also not been demonstrated.*" However, the councillor-members of 5G Advisory Committee generally accept this is an area which needs to be investigated further.

**Electromagnetic Hypersensitivity (EHS):**

During the six months in which the 5G Advisory Committee met, the subject of electro-sensitivity or Electromagnetic Hypersensitivity (EHS) came up numerous times.

The World Health Organization acknowledges that the symptoms of EHS are "*certainly real and can vary widely in their severity [and] can be a disabling problem for the affected individual.*" However, they also state that "*EHS has no clear diagnostic criteria and there is no scientific basis to link EHS symptoms to EMF exposure.*"

This was another issue which proved controversial with some members of the committee – however, during his presentation to the committee, Dr. de Vocht asserted the merit in pursuing research into EHS, and – in general – the councillor members of the 5G Advisory Committee support his view. Public Health England, being the lead advisory body in this sphere, would be best placed to take responsibility for this research.

**Recommendations:**

That this Council:

1) Writes to identified MPs and asks them to establish a Select Committee or Committee Inquiry into the safety or otherwise of fifth generation cellular network technology – building upon the work already undertaken by the Glastonbury's 5G Advisory Committee investigation.

2) Writes to Public Health England and the UK Government asking them to convene an independent scientific study into the non-thermal effects of fifth generation cellular network technology – particularly the impact of high frequency, long duration exposure on the levels of reactive oxygen species and antioxidants biomarkers – in human subjects [see Appendix 3].

3) Writes to Public Health England and ask them to commission research into Electromagnetic Hypersensitivity (EHS).

4) Lobbies the International Commission on Non-Ionizing Radiation Protection (ICNIRP) to take into account the non-thermal effects of radiofrequency EMFs in their Guidelines on Limiting Exposure to Electromagnetic Fields.