**Exhibit A: Consistent Failure to Identify the Potential for Health Effects (Opinion-wide)**

The evaluative language quoted below indicates the disparity between what was asked of the authors (to identify Possible Effects of EMF) and what they eventually chose to use as a basis for their analysis process that no change in the ICNIRP standards is warranted at this time.

**SIXTEEN (16) instances of “no causal evidence” or “prevents a causal interpretation” or “is not causally linked” or “not informative for causal linkage”.

**THREE (3) instances of “does not provide convincing evidence”.

**THREE (3) instances of “not definitive”.

**SEVEN (7) instances of “do not unequivocally indicate”.

These criteria are inconsistent with a review that is titled “Possible Effects”. Further, the approach in judging the emerging evidence is inconsistent with the charter of the Scientific Committee* to give advice needed for “consumer safety, public health and the environment on new or emerging problems.” Some statements acknowledge important new evidence of effect; yet then shift the burden of proof to a higher level requiring that adverse health effect, a known mechanism, a causal level of evidence be conclusively demonstrated, or physical evidence of harm be demonstrated. There is nothing in the report that says the authors were directed to provide proof of effect (or consistent indications, or consistent demonstration of effect; or consistent support for, or certainty of effects) at levels below ICNIRP limits. With the same flawed approach in drawing conclusions from emerging science as demonstrated by the SCENIHR, hardly any environmental or occupational condition would be qualified as an emerging or newly identified health risk*.

*Three independent non-food Scientific Committees provide the Commission with the scientific advice it needs when preparing policy and proposals relating to consumer safety, public health and the environment. The Committees also draw the Commission’s attention to the new or emerging problems which may pose an actual or potential threat. They are: the Scientific Committee on Consumer Safety (SCCS), the Scientific Committee on Health and Environmental Risks (SCHER) and the Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR) and are made up of external experts.

All of the areas [highlighted in yellow](#) in the preliminary Opinion indicate problems (omissions, mischaracterizations of exposure data leading to erroneous conclusions about possible public health risks, misreading of original study results, dismissal of important findings, need for a known mechanism, and failure to use proper criteria for judging potential for health effects as opposed to causal effects).

There is a serious consequence which comes from dismissing effects linking EMF/RFR exposures reported in scientific studies to an ‘all or none’ finding by using embedded criteria that demand ‘causal’ or ‘conclusive’ or ‘definitive’ or ‘consistent demonstration of effect’. It is clear that such erasing possible impacts of great global health consequence will chill public health responses that would otherwise occur if the correct standards for judging the evidence were used in this Opinion. Public health activities hinge on not causality but sufficiency of evidence to warrant a proportionate preventative action in line with established precautionary principles. This draft Opinion provides no guidance in this area.
Since the charge to the Scientific Committee is to evaluate the possible health effects (not to prove beyond a shadow of a scientific doubt the causality of such exposures to health harm), the Opinion needs complete re-working. It may be also that the Committee needs new membership capable of a different, and more appropriate approach to the important assessment that SCENIHR is charged to prepare. Page and line numbers are included to key to the Opinion sections.

Page 5: Health effects from Extremely Low Frequency (ELF) fields
12 The new epidemiological studies are consistent with earlier findings of an increased risk of childhood leukemia with long-term average exposure to magnetic fields above 0.3 to 0.4 μT. However, as stated in the previous opinions, no mechanisms have been identified that could explain these findings. The lack of experimental support and shortcomings identified for the epidemiological studies prevent a causal interpretation.

Page 12-13: Health effects from RF fields
42 Epidemiological studies on RF exposure do not unequivocally indicate an increased risk of brain tumours. However, research conducted since the previous SCENIHR opinion adds weight to the conclusion that RF exposure is not causally linked to these symptoms.

Page 13: Health effects from ELF fields
49 The new epidemiological studies are consistent with earlier findings of an increased risk of childhood leukemia with daily average exposure above 0.3 to 0.4 μT. As stated in the previous SCENIHR opinions, no mechanisms have been identified in experimental studies that could explain these findings. Due to lack of support from experimental data and shortcomings in the epidemiological studies, evidence remains weak that the observed association reflects a causal effect.

For symptoms associated with longer-term exposures (measured in days to months), the evidence from observational studies against a causative association with RF exposure is broadly consistent but has gaps, most notably in terms of the objective monitoring of exposure.

Page 58
24-28 They reported higher incidence rates of brain cancers in countries with the most frequent mobile phone subscriptions. The study is not informative for causal inference, as popular use of mobile phones can also reflect standard of living, which is also associated with, for example, availability of diagnostic services.

Page 65-66: Discussion of brain tumours and other tumours of the head and neck area
5-7 For the segment of the heaviest users, the largest case-control study in particular observed about 40% increased risks for glioma and for acoustic neuroma. It cannot be concluded from the available studies whether this reflects a causal association.

Here, the conclusion that there might legitimately be causal evidence for increased risk for brain tumors with cell phone use but it no longer matters, because, indeed, technologies might change in the future. This is a preposterous statement. It has the impact of trivializing the issue, minimizing identified risks and leaping to an irrational conclusion that negates any need for the Scientific Committee to advise caution.

19-25 Therefore, the increased risks seen in heavy users in the case-control studies, mainly driven by technologies not in operation anymore or operating more efficiently today, could perhaps not be due to methodological shortcomings but indeed reflect a causal association. This finding might be irrelevant for any future cancer prevention activities since those relevant cumulative RF exposure levels
are not reached anymore, not even among those using mobile phones for longer duration or much more often than the users of the 1980s or 1990s.

Pages 114-115 Provocation Studies
The fact that these effects disappear once blinding is used and the participant is therefore unaware of the exposure suggests first, that no causal (causal) effect of RF exposure exists and second, that believing RF 48 to be present is sufficient to induce symptoms via a nocebo effect. While further work using this paradigm would be beneficial, at present these studies suggest there is no causal link between exposure and symptoms.

Page 123 3.7. Health effects from ELF fields
22 3.7.1. Neoplastic diseases
23 3.7.1.1. Epidemiological studies
24 What was already known on this subject?
25 The previous SCENIHR statement endorsed the IARC assessment of classifying ELF 26 magnetic fields as possibly carcinogenic to humans due to consistently observed 27 increased childhood leukaemia risk in epidemiological studies (SCENIHR, 2009); the 28 latter stems mainly from two pooled analyses based on studies completed before the 29 year 2000, showing a two-fold risk increase with ELF magnetic fields above 0.3-0.4 μT 30 (time-weighted average) but raising concerns about shortcomings of those studies 31 preventing a causal interpretation (Ahlbom et al., 2000; Greenland et al., 2000).

Page 125 Discussion on epidemiological studies
27 Pooled analyses of the more recent studies on ELF magnetic fields and childhood 28 leukaemia confirm those of earlier studies, however, the new generation of studies shows 29 little methodological advancement compared to the ones conducted before 2000. 30 Therefore it remains difficult to judge whether the apparently quite robust empirical 31 association is likely to be causal or a result of methodological shortcomings of the 32 studies.

Page 125 Conclusions on epidemiological studies
42 The previous assessment of the 2009 SCENIHR statement of a possible association 43 between long term exposure to ELF magnetic fields and an increased risk of childhood 44 leukaemia remains valid. From an epidemiological point of view, the association appears 45 to be robust, having been observed in multiple studies in different settings at different 46 points in time. Unfortunately, little progress has been made in explaining the finding, 47 both in terms of finding a plausible mechanism for a causal association or in identifying 48 alternative explanations.

Page 131 3.7.1.4. Conclusions on neoplastic diseases
18 The new epidemiological studies are consistent with earlier findings of an increased risk 19 of childhood leukemia with daily average exposure above 0.3 to 0.4 μT. As stated in the 20 previous opinions, no mechanisms have been identified in experimental studies that 21 could explain these findings. Lack of support from experimental studies and shortcomings 22 of the epidemiological studies prevent a causal interpretation.

Page 141 3.7.3.1 Conclusions on Symptoms
The 2009 opinion concluded that no consistent relationship had been demonstrated between ELF exposure and symptoms, neither in the general public nor in people with IEI-EMF.

Page 142 Conclusions on symptoms 3.7.3 Other Health Effects
49 The studies published since the 2009 opinion show discordant results. However, 50 observational studies suffered from weaknesses and do not provide convincing evidence 51 of an effect of ELF exposure on symptoms in the general population and most 52 experimental evidence also points to the absence of any causal effect.
The new epidemiological studies are consistent with earlier findings of an increased risk of childhood leukemia with daily average exposures above 0.3 to 0.4 \( \mu \)T. As stated in the previous opinions, no mechanisms have been identified in experimental studies that could explain these findings. Lack of support from experimental studies and shortcomings of the epidemiological studies prevent a causal interpretation.

Research to date has not been able to identify with any certainty any adverse health effect resulting from exposure to EMFs at any frequency or intensity typically found in the workplace or everyday environment. Epidemiological studies have reported associations between EMF exposure and certain diseases, most notably for an increased risk of childhood leukaemia with exposure to low frequency magnetic fields, but none of these associations can be considered causal.

Indeed, organ-specific dosimetry is considered necessary to help establish causality. Research to date has not been able to identify with any certainty any adverse health effect resulting from exposure to EMFs at any frequency or intensity typically found in the workplace or everyday environment. Epidemiological studies have reported associations between EMF exposure and certain diseases, most notably for an increased risk of childhood leukaemia with exposure to low frequency magnetic fields. However, given the variety of applied fields, duration of exposure, number of considered leads, and statistical methods it is difficult to derive firm conclusions. For event-related potentials and slow brain oscillations results are inconsistent. Likewise, studies on cognitive functions in humans lack consistency. The biological relevance of reported small physiological EEG changes remains unclear, and mechanistic explanation is still lacking.

A reasonable body of experimental evidence now suggests that exposure to RF does not trigger symptoms, at least in the short-term. While additional observational studies are required to assess whether longer-term exposure could be associated with symptoms, the evidence to date weighs against a causal effect.

Studies on neurological diseases and symptoms show no clear effect, but the evidence is limited. Human studies on child development and behavioural problems provide only weak evidence because of conflicting results and methodological limitations. Direct effects of exposure from mother’s mobile phone use during pregnancy are not plausible owing to extremely low fetal exposure to mobile phone EMF.

Epidemiological studies on RF exposure do not unequivocally indicate an increased risk of brain tumours, and do not indicate an increased risk for other cancers of the head and neck region, or other malignant diseases including childhood cancer. Earlier studies raised open questions regarding an increased risk of glioma and acoustic neuroma in heavy long-term users of mobile phones. Based on the most recent cohort and incidence time trend studies, the evidence for glioma became weaker while the possibility of an association with acoustic neuroma remains open.

A considerable number of well-performed in vivo studies using a wide variety of animal models have been mostly negative in outcome. These studies are considered to provide evidence for the absence of a carcinogenic effect. A large number of in vitro studies pertaining to genotoxic as well as non-genotoxic end points have been published since the last opinion. In most of the studies, no effects of
19 exposure at levels below exposure limits were recorded, although in some cases DNA
20 strand breaks and spindle disturbances were observed.

Page 178  ELF fields
The new epidemiological studies are consistent with earlier findings of an increased risk
41 of childhood leukemia with long-term daily average exposures above 0.3 to 0.4 μT. As
42 stated in the previous opinions, no mechanisms have been identified and no support is
43 existing from experimental studies that could explain these findings, which, together
44 with shortcomings of the epidemiological studies prevent a causal interpretation.