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**Health and Safety Executive****CD276 Consultation on the transposition of Directive  
2013/35/EU on the minimum health and safety requirements  
regarding the exposure of workers to the risks arising from  
physical agents - electromagnetic fields (EMF)****Reply Form****Completing this Questionnaire**

You can move between questions by pressing the 'Tab' / 'Shift-Tab' or 'Page Up' / 'Page Down' keys or by clicking on the grey boxes with a mouse. Please type your replies within the rectangular grey boxes, or click on the square grey boxes to select an answer (e.g. 'Yes' or 'No').

**Respondent's details:**

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**Organisation:**

This response is submitted on behalf of Energy Networks Association

**Fax:**

**Size of organisation:**

Please note Energy Networks Association represents multiple companies, the majority of whom have 1000+ employees

Not applicable

1 to 9 employees

10 to 49 employees

50 to 249 employees

250 to 1000 employees

1000+ employees

Self-employed

**Type of organisation:**

Choose one option:

Academic

Charity

Consultancy

Industry

Local government

Member of the public

National government

Non-departmental public body

Non-governmental organisation

Pressure group

Trade association

Trade union

If you chose 'Other' please specify:

**Is your response being made in your capacity as:**

Choose one option:

An employer	<input checked="" type="checkbox"/>	An employee	<input type="checkbox"/>
Health and safety professional	<input type="checkbox"/>	Trade union official	<input type="checkbox"/>
Training provider	<input type="checkbox"/>		

Other – please specify:

**Confidentiality**

Please indicate below whether your comments can be made available to the public or if you want them to be confidential. (NB if you do not indicate your choice they will be made available to the public. This takes precedence over any automatic notes on e-mails that indicate that the contents are confidential.)

Public	<input checked="" type="checkbox"/>
Confidential	<input type="checkbox"/>

**Q1. Do you agree or disagree with the transposition approach proposed?**

Agree	<input checked="" type="checkbox"/>
Disagree	<input type="checkbox"/>

**If you disagree, please state why?**

We broadly agree but have reservations about particular aspects which we detail below.

**Q2. Does the guidance at Annex (i) make it clear what your responsibilities as an employer are under 'The Control of Electromagnetic Fields at Work Regulations 2016'?**

Yes	<input checked="" type="checkbox"/>
No	<input type="checkbox"/>

**If no, how can this be improved?**

The guidance makes the responsibilities of an employer broadly clear, but there is scope for making it even clearer, which we detail below. Specifically, the significance of the exposure limits as a means of assessing risk should be made more explicit.

**Q3. Does the guidance at Annex (i) help you to find the information that you need to help you assess your workers' potential exposure to EMFs?**

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>

**If no, how can this be improved?**

This is not a criticism of Annex (i). Our industry is so specialised and has so many EMF exposure scenarios, mostly unique to us, that we would not expect general guidance to cover our needs, nor do we depend on the guidance for our information.

**Q4. Is it clear from the guidance at Annex (i) that measurement of EMF exposure levels will only be necessary in strictly limited circumstances?**

Yes	<input checked="" type="checkbox"/>
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No	<input type="checkbox"/>
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**If no, how can this be improved?**

**Q5. HSE may exempt work activities from the exposure limits stated in these Regulations. Does the guidance at Annex (i) clearly explain when an exemption applies and the conditions that have to be met?**

Yes	<input type="checkbox"/>
No	X

**If no, how can this be improved?**

The guidance does not spell out what would constitute an acceptable alternative demonstration of adequate protection of staff if an exemption is in place and the exposure limits are not being followed.

**Q6. Does your business involve a work activity in respect of which you may find it difficult to meet the exposure limits?**

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

**If yes, what activity would this be?**

This question does not yield itself to a simple yes/no answer. We have many activities where meeting the exposure limits is difficult in the sense that it involves restrictions, design changes, barriers, altered specifications etc; but not where it is difficult to the point of impossibility.

**Q7. Is there any additional information that you would like to see included in the guidance at Annex (i)?**

Yes	<input type="checkbox"/>
No	X

**If yes, what would this be?**

**Q8. Do you have any comments on the draft 'The Control of Electromagnetic Fields at Work Regulations 2016' at Annex (ii)?**

Yes	X
No	<input type="checkbox"/>

**If yes, please provide details.**

See below.

**Q9. Do you agree or disagree with the analysis in the impact assessment at Annex (iii)?**

Agree	<input type="checkbox"/>
Disagree	X

**Please state why?**

We consider the Impact Assessment underestimates the time required for an employer, even an employer who already fulfils their existing duties under Health and Safety legislation with regard to EMFs, to understand the new Regulations and Guidance and to ensure that their company's procedures are still adequate.

We suggest more realistic figures might be:

Activity	Current HSE estimate	Our suggestion	Comment
Scoping	5 mins	45 mins	The HSE estimate assumes a perfectly efficient process, where the right person receives the material, reads it once, assimilates it instantly, makes an instant decision as to whether they are in or out of scope. In practice, even an employer already discharging their duty will need more time to be confident that they have understood the new Regulations and applied them correctly.
Familiarisation	30 mins (EMFs a risk) 60 mins (EMFs not a risk)	30 mins (EMFs a risk; no existing written policy) 2 days (EMFs a risk; existing written policy)	We agree with the actual time taken for, literally, "familiarisation" with the new Regulations. However, we consider HSE should also include the cost of altering existing policies etc where these exist. Although the existing policy should provide the desired level of protection, it will not be cast in the terminology and numeric values of the Regulations and thus will need altering. This will usually require multiple governance steps and significant management time.

Assessment	30 mins (>5 employees)  15 mins (<5 employees)	2.5 hours	We are not as optimistic as HSE about the ready availability of exposure information relating specifically to ALs and ELVs. Such information may become more readily available, but at present, an employer who has previously managed risk without reference to these particular numerical values and now has to do so, will spend considerable time searching for information and applying it to their equipment.
Recurring costs	30 mins (>5 employees)  15 mins (<5 employees)  20 year replacement cycle		We note that, although the replacement time for an individual item of equipment may be 20 years (often longer in our industry), account also needs to be taken of the quantity of such equipment.
Training and information		2 days upwards	The new Regulations create a new structure, new terminology, and new numerical values. Even for employers who already fulfil their duty to inform workers about EMFs, there will be a cost for preparing new material and ensuring employees access it. In larger organisations, where consultation mechanisms such as HESACs or Staff Forums would be used, the time involved rapidly escalates.

**Q10. Do you have any other comments to make on the impact assessment at Annex (iii)?**

Yes	<input type="checkbox"/>
No	<input checked="" type="checkbox"/>



**If yes, please provide details.**

**Q11. Are there any further comments you would like to make on the issues raised in this consultative document?**

We provide detailed comments on the wording of the Regulations and Guidance below.

**Is there anything you particularly like or dislike about this consultation?  
Please provide comments.**

**Please send your response by 3 December 2015 to:**

**Radiation Policy Team  
Health and Safety Executive  
2.1 Redgrave Court  
Merton Road  
Bootle  
L20 7HS**

**E-mail: [emfconsultation@hse.gsi.gov.uk](mailto:emfconsultation@hse.gsi.gov.uk)**

**Thank you for taking the time to complete this questionnaire**

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## Detailed comments on the draft Regulations and Guidance

### The issue of “risk” and minimising it

The Regulations, and the Directive, introduce exposure limits and require compliance with those exposure limits.

The paradigm underpinning this is that exposures above the exposure limits may carry a risk; exposures below the exposure limits do not carry a risk (except to “staff at particular risk”). Thus, by ensuring that exposures are below the exposure limits, an employer eliminates risk for their employees (excepting staff at particular risk).

In the Directive, Article 5(1) creates a duty to “ensure that risks ... are eliminated or reduced to a minimum”. However, that is followed immediately by 5(2) which is clear that the action plan is needed only when the relevant exposure limits are exceeded. The logic of these two paragraphs in the Directive taken together is clear:

- If exposures are above the exposure limits, there is a potential risk, and an employer has to devise and implement an action plan to reduce exposures below the exposure limits.
- If exposures are below the exposure limits, there is no risk, no requirement to devise an action plan, and the duty in 5(1) to eliminate or minimise risks does not apply because there are no risks, except to staff at particular risk.

In the Regulations, Regulation 9 creates the corresponding duty to eliminate or reduce the risks identified in the risk assessment (helpfully qualified by “so far as is reasonably practicable”). But it is now separated from any links to the exposure limits, and reads more like a general duty to minimise risk, separate from or additional to the duty to comply with exposure limits in Regulation 4.

The intention is still clearly that when exposures are below the ELVs, risk for employees in general is eliminated, and the only risk remaining to be minimised is any risk to employees at particular risk. But this is not as explicit as it could be, and there is a danger that the Regulations and Guidance could be construed as requiring an assessment of risk beyond simply comparing the exposures to the ALs and ELVs, and even as creating a duty to minimise exposures.

To avoid what we all recognise would be an erroneous impression, we suggest the following drafting changes:

- Consider an alternative to the terminology “lower risk activity”. According to the definition in Regulation 5, this label applies to all activities that do not exceed “any AL or ELV”. So activities that are below any exposure limits are being described as “lower” risk, clearly implying that there is some risk, which then has to be minimised according to Regulation 9. It could be argued that the only risk being referred to by “lower risk activity” is that to people at particular risk, but that interpretation seems ambiguous, and an alternative label could avoid this ambiguity.
- Guidance, p5, “Workplaces where it is unlikely EMFs will be a risk”: this section uses the terminology “unlikely” but could be made stronger:
  - Suggested heading: “Workplaces where it can be assumed EMFs are not a risk except to staff at particular risk”
  - Suggested second paragraph: “Table A in Annex A contains a non-exhaustive list of equipment where EMFs can be assumed not to pose a risk.”

- Guidance p6, 1<sup>st</sup> and 3<sup>rd</sup> bullet points. The first bullet point states the requirement to keep exposures below the ELVs. The third bullet then states a requirement to assess and minimise risk, which therefore reads like an additional requirement, something that goes beyond the first bullet point. Suggested rewording of third bullet point:
  - “assess the risks of the employees’ exposure and eliminate or minimise those risks. For workers in general, you will already have achieved this by ensuring that their exposures are below the ELVs. But you must ensure you take workers at particular risk ... into account.”
- Guidance, p7, third para: “If exposure to EMFs is below the ALs, the risks of exposure are likely to be very low, though employers must still consider any other risk of indirect effects and the impact of exposure on employees at particular risk, more information on which is provided later in this guide.” This implies that there could still be a risk that exists below the limits, and therefore requires eliminating or minimising. Even if the risk is “very low”, the employer still has duty under Regulation 9 to minimise it so far as is reasonably practicable. Suggest replace with:
  - “If exposure to EMFs is below the ALs, there are no direct risks of exposure to staff in general, though employers must still consider any other risk of indirect effects and the impact of exposure on employees at particular risk, more information on which is provided later in this guide.”
- Guidance p7 last para: “Please note that ‘lower risk’ does not mean risk free – you will still need to undertake a suitable and sufficient risk assessment.” Again, this implies there are risks below the exposure limits. Suggested replacement:
  - “Please note that ‘lower risk’ does not mean completely risk free – there could still be risks to staff at particular risk and you will still need to undertake a suitable and sufficient risk assessment.”
- Guidance, Annex A, table headings, suggested replacements:
  - “Table A – Non-exhaustive list of examples of workplaces and equipment where it can be assumed EMFs do not pose a risk for most workers”

### Annex A tables in the Guidance

The entries in tables A and B for “electrical supply” have a number of problems:

- A distinction is drawn between “overhead bare conductor” and “overhead line”, the meaning of which is obscure
- The threshold of 100 kV or 150 kV is unnecessarily cautious
- “net current” is jargon that will not be meaningful to most readers.

Suggested replacements are as follows:

#### **Table A – equipment where EMFs are not a risk for staff in general**

Recommended version (taking the pragmatic view that in practice no spans exceed 10 kV/m):

- Overhead line at any voltage crossing the workplace (electric and magnetic)

Pedantic version (allowing for the theoretical possibility that some spans can exceed 10 kV/m):

- Overhead line at any voltage crossing the workplace (magnetic)
- Overhead line at any voltage crossing the workplace if the exposure is indoors, or if the exposure is outdoors but not directly underneath the line (electric).
- Overhead line at any voltage up to and including 275 kV If the exposure is outdoors and directly underneath the line (note that 400 kV lines will often not pose a risk either, but it is theoretically possible for some low-clearance line to exceed the Low Action Level) (electric).

Both versions:

- Any electrical circuit or installation (including cables, busbars, switchgear and transformers), where the cables carrying the electrical currents are bundled together so that they are always touching or nearly so and there are no unusual earthing arrangements that could create unbalanced currents.
- Any electrical circuit or installation (including cables, busbars, switchgear and transformers), where the cables or busbars carrying the electrical currents are separated, and the rating of the circuit or that part of it is <100 A (equivalent to 23 kW for a single-phase 230 V circuit, 69 kW for a three-phase 230 V circuit, or 1.9 MW for a three-phase 11 kV circuit).

**Table B – equipment may be a risk for all staff**

- Any electrical circuit or installation (including cables, busbars, switchgear and transformers), where the cables carrying the electrical currents are bundled together so that they are always touching or nearly so, but there are earthing arrangements that mean the cables collectively carry an unbalanced current of >100 A.
- Any electrical circuit or installation (including cables, busbars, switchgear and transformers), where the cables or busbars carrying the electrical currents are separated, and the rating of the circuit or that part of it is >100 A (equivalent to 23 kW for a single-phase 230 V circuit, 69 kW for a three-phase 230 V circuit, or 1.9 MW for a three-phase 11 kV circuit).

**Minor points**

The Regulations require separate Exposure Assessment (Regulation 6) and Risk Assessment (Regulation 8), plus the Action Plan (Regulation 7). It would be helpful if the Guidance made clear that these need not always be separate documents but could be integrated into a single document if that was expedient.

Regulation 7(3) says the action plan “must include consideration of” a number of factors. This could naturally be taken as meaning that each of those factors must be individually considered. The equivalent wording in the Directive, Article 5(2), uses “taking into account” which implies a weaker requirement to specifically consider each one. Suggestion: revert to “taking into account”.

Regulation 10 says that an employer must provide “relevant” information to employees. The Directive, Article 6, uses “necessary”. “Relevant” could be seen as an expansion of scope. Suggestion: revert to “necessary”.

In the tables, where a range of frequencies is given in the first column with the start and end of the range given in the same unit but that unit is not Hz, it would remove a potential ambiguity if the unit

were given explicitly for both numbers, given the general statement in part 2 that  $f$  is expressed in Hz unless otherwise indicated. E.g, Table AL3 second line “1 MHz <  $f$  < 10 MHz”.

In footnote 2 to Table ELV1, regulation 10 is described as containing “preventative measures”, whereas regulation 10 is actually concerned with information and training.

Table ELV3, footnote 1, says the ELVs are “spatial peak values in the head of the exposed employee”. That is not quite correct; they apply only to the central nervous system in the head, not to the whole head. In the Directive that is conveyed by a line of text immediately above the corresponding table, A3, but that line of text is not reproduced in the Regulations..

Suggested replacement for footnote to ELV3: “The ELVs are spatial peak values in the central nervous system in the head of the exposed employee”.

Schedule 2 part 2 provides a list of events and the corresponding conditions for the activity to be “lower risk”. Paragraph 4 covers the situation where the low action levels for magnetic fields are exceeded. Paragraph 5 then deals with exceeding the sensory effects ELVs. But that is already encompassed with paragraph 4, because, by definition, an ELV cannot be exceeded without first exceeding the corresponding AL. So paragraph 5 seems unnecessary (though there could still be a case for retaining it in the interests of clarity).

Guidance, p9, 4<sup>th</sup> para: “For any work activity which is not classed as a lower risk work activity, or where the exposure assessment demonstrates that the exposure of employees to electromagnetic fields does not exceed any ELV, you must devise and implement an action plan to ensure employees are not exposed to EMFs in excess of the ELVs.”

This paragraph makes sense only if the “not” is taken to apply to the clause after the comma as well as the clause before it. As this is ambiguous, it could be reworded to avoid the ambiguity.

Guidance, p10, top of page: Suggest change “significant risk of exposure” (second bullet and again in next para) to “significant risk arising from exposure” which is closer to what is actually meant here.