EUROPEAN SHOOTING SPORTS FORUM
E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

Frequently Asked Questions

RESTRICTING LEAD IN AMMUNITION

ABOUT ESSF

In gathering EU manufacturers of civilian firearms and ammunition, dealers, collectors, hunters and sport-shooters, the European Shooting Sports Forum (ESSF)[1] represents a substantial socio-economic sector (including many thousands of small and medium-sized enterprises) with the participation of over 10 million law-abiding and responsible citizens.

The European Chemicals Agency (ECHA) has proposed that the EU should restrict the use of lead ammunition in hunting and sport shooting. This will also affect EEA countries and Northern Ireland.

In summary, the proposal from ECHA is the following:

- Prohibition on sale and use of lead shot for hunting with a transition period of 5 years (or 18 months according to ECHA's committees). A very narrow derogation is proposed for the continued use of lead shot for sport shooting under strict conditions.

- Prohibition on use (not sale) of lead centre-fire bullets for hunting after 18 months (for large calibres) and 5 years for small calibres including rim-fire (with a review clause to establish where suitable non-lead is available). The use of lead bullets can continue for sports shooting after a 5-year transition period if shooting ranges are equipped with either lead collectors or specifically defined 'best practice' sand barriers.

The European Commission is expected to publish a legislative proposal under the REACH Regulation in 2024, which will be submitted for a discussion and vote (if supported) by the EU Member States in the REACH Committee. Before a restriction can be adopted, it will be scrutinised by the European Parliament and the Council.

---

[1] The ESSF is composed of the European Association of the Civil Commerce of Weapons (AECAC), the Association of European Sporting Ammunition Manufacturers (AFEMS), the European Shooting Sports Council (ESSC, comprising the European Shooting Confederation – ESC, and the Fédération Internationale de Tir aux Armes Sportives de Chasse - FITASC), the Association of European Manufacturers of Sporting Firearms (ESFAM), the Federation of Associations for Hunting and Conservation of the EU (FACE), the Foundation for European Societies of Arms Collectors (FESAC), and the Institut Européen des Armes de Chasse et de Sport (IEACS). Observers of the ESSF are the International Practical Shooting Confederation (IPSC) and the International Shooting Sport Federation (ISSF).

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

If the European Commission follows ECHA's opinion and the proposal is accepted by the main decision-makers, major impacts will follow. The following FAQs encourage decision-makers look at that matter practically and proportionally. Good administration entails that decision-making should take account of all relevant considerations, ignore irrelevant ones, and balance the evidence appropriately. It is ESSF's view that ECHA's opinion contains numerous weaknesses and disproportionate elements; the main ones are outlined below.

RESTRICTION PROCESS

1. Did the (SEAC) public consultation on "socio-economics" take place at the correct time?

ECHA's Risk Assessment Committee (RAC) adopted its opinion in June 2022 and the 60-day public consultation of ECHA's Committee for Socio-Economic Analysis (SEAC) ended on 29 August 2022. Because the European Ombudsman found that the ECHA's opinion development was tainted by maladministration (here), RAC was obliged to organise a new targeted public consultation ending on 6 October 2022 (here, here). Therefore, the opinion of RAC was not final at the time when the 60-day SEAC consultation ended.

- A question remains whether it was relevant to assess socio-economic impacts of the proposed restriction when its fundamental cause (i.e. "*an unacceptable risk to human health or the environment […] which needs to be addressed on a Community-wide basis*"), as defined in Article 68(1)of REACH, had not been definitively established and was still under consideration. In other words, whether the SEAC's 60 days public consultation was from a legal perspective premature?

2. Can "consumers" be captured in a REACH restriction?

ECHA proposes that the EU should prohibit the use of lead and lead compounds "*[…] in any other projectiles not defined as a gunshot for hunting […]*" without however proposing that placing on the market of such centre- and rimfire rifle ammunition should be prohibited.

ECHA believes that consumers can be subject to restrictions under REACH and states that there are "*several examples of existing restrictions that impact consumer uses*" like (a) the discharge and carrying of lead gunshot in and around wetlands; (b) lead carbonate and sulphates must not be used in paint; (c) carcinogenic, mutagenic, reprotoxic substances must not to be used in mixtures for supply to the general public; and (d) nonylphenol and nonylphenol ethoxylates must not be used as substances or in mixtures for e.g. domestic cleaning (here).

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

Indeed, although consumers may be *impacted* by restrictions prohibiting economic operators from using certain substances in the manufacture of consumer products and placing those products on the market, the real question is whether consumers may be *subject* to a restriction, like the wetland restriction on lead shot.

The suggested ban on the use of centre- and rim-fire rifle ammunition containing lead for hunting is open for the following criticism:

Article 1(3) states that REACH obligations are based on the founding principle that it is for manufacturers, importers, and downstream users to ensure that *they* do not manufacture, place on the market, or use substances adversely affecting human health or the environment. As made clear, in recital 16, that REACH "*lays down specific duties and obligations on manufacturers, importers and downstream users of substances on their own, in mixtures and in articles*". In other words, REACH places the burden on economic operators.

Inversely to economic operators, consumers have no obligations under REACH, and they have only one limited right under Article 33(2) of REACH to know whether the products they buy contain harmful chemicals. This obligation concerns retailers (here).

The wetlands restriction is unique as consumers, and not manufacturers, importers and distributors are the addressee of the restriction: Consumers shall neither use nor carry certain consumer products (i.e. lead gunshots) lawfully placed on the EU market in or within 100 metres of wetlands. In effect, consumers are subject to the most severe intervention without having proper administrative and juridical rights under REACH.

The ECHA's Enforcement Forum ('*Forum*') raised serious concerns on the proposed wetland restriction at the time. It noted, first, that paragraph 67(1), 69(1) and 69(4) of REACH are "*addressing manufacture, placing on the market or use by economic actors but not possession of a substance on its own, in a mixture or in an article by a member of the general public*". Second, it did not share the opinion that '*possession*' (subsequently replaced by the term '*carrying*') would be part of '*use*' considering "*the definition of "use" in Art.3(24) of REACH which is obviously related to use by economic actors including storage and keeping*". In sum, the Forum advocated that, instead of prohibiting the use, placing on the market of lead gunshots should be restricted, "*as enforcement of a restriction for placing on the market is a standard market surveillance activity*", or the EU should examine "*if the proposed restriction can be covered under other community legislation*".[2]

[2] See ECHA Forum For Exchange of Information On Enforcement, *Advice on Enforceability on Restriction proposal regarding LEAD GUNSHOT*, 2017.

The Court of Justice of the EU ('*CJEU*') has not yet clarified the role of consumers under REACH.

- In view of the above, the fundamental question remains whether Articles 1(3) and 68(1) of REACH allow the EU to prohibit consumers from using centre- and rimfire rifle ammunition, which has been lawfully placed on the market, for hunting?

3. Can discharged ammunition at shooting ranges be defined as "waste" and what are the implications of this?

Regarding shooting ranges, ECHA has proposed that the use of lead ammunition may continue if they are able to collect annually at least 90% of discharged lead pellets (shots) and/or when shooting ranges are equipped with bullet traps or defined best practice sand traps (centre- and rimfire ammunition).

Article 1(2) of REACH lays down provisions for the manufacture, placing on the market and use of substances, on their own, in mixtures or in articles. However, waste is specifically excluded from REACH. Article 2(2) of REACH defines '*waste'* by reference to Article 3(1) of Waste Framework Directive 2006/12/EC as "*any substance or object which the holder discards or intends or is required to discard*" (here). Recital 11 to REACH makes clear that this exclusion is intended to "*maintain the incentives for waste recycling and recovery*" under EU waste legislation.

The said means that the REACH requirements for substances, mixtures, and articles, like the registration, evaluation, authorisation, and restriction, do not apply to waste. The fundamental question thus is whether expelled shotgun and rifle projectiles meet the definition of '*waste*' because shooters discard (i.e. abandon) those pieces of lead and leave them to accumulate in shooting ranges after they have served their intended purpose. Apparently such discarded (i.e. abandoned) lead ammunition is metallic scrap. Analogical to iron, steel and aluminium scrap, lead waste ceases to be qualified as waste when it has undergone a recovery operation and complies with different environmental requirements (here). Article 6(4) of the Waste Framework Directive 2006/12/EC provides that insofar as the EU has not acted, the Member States maintain their competences to regulate lead metallic scrap.

- If the answer to the above-mentioned fundamental question is '*yes*', discharged lead shot pellets and rifle bullets do not fall under Title VIII of REACH, and cannot be subject to the restrictive risk management measures, such as the "*annual lead recovery of at least 90%*" requirement (for lead gunshots) and/or the obligation to equip shooting ranges with bullet traps or certain best practice sand traps (for lead bullets). In the absence of EU rules relating to end-of-waste status, it is for the Member States to regulate when lead scrap in shooting ranges ceases to be qualified as waste.

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

4. Can the proposed restriction complement the REACH wetlands restriction on lead shot?

The restriction proposal is intended to prohibit, inter alia, placing on the market of lead shot and their use for hunting. SEAC believes that it would be "*complementary to the existing restriction on the use of lead gunshot in wetlands (Entry 63 of Annex XVII to REACH)*".

If the proposed restriction will be enacted, common sense and logic entails that the wetland restriction would be obsolete, as its object (i.e. to protect waterfowl in their natural habitats), would be fully covered by prohibiting placing on the market of lead shot.

- If a new REACH restriction on all lead comes into force, the wetlands restriction becomes obsolete. When placing on the market of lead shots for hunting would be prohibited, those articles are neither available for hunters nor can they be used for hunting in all territories including wetlands.

HUMAN HEALTH

5. How plausible is ECHA's human health risk assessment?

ECHA's human health risk assessment, including the opinions of RAC and SEAC, suffer from fundamental uncertainties. RAC and SEAC recognise on numerous elements that, for example, "*the high uncertainties related to these estimates*"; "*significant uncertainties in the assessment of all human health effects which are largely due to limited information*" and that the "*results of these analyses should be, however, interpreted with caution*".

Notwithstanding the said uncertainties, ECHA, RAC and SEAC are taking advantage of persuasive rhetoric ("*in any given year about one million children are likely to be exposed to lead in game meat*") to convince the audience. For example, RAC estimates that "*50% of the exposed population (of total of 1.1 million children in hunter's families) is at risk to lose > 0.05 IQ points and 6% to lose >1 IQ point*" (here).

- The opinions of ECHA, RAC and SEAC on IQ loss cannot be empirically validated, as it is based on a hypothetical model with significant uncertainties.

6. Was ECHA's change in the game meat intake figures scientifically justified?

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

ECHA's original exposure calculations were based on the annual game meat intakes of 4.24 kg for infants (aged 0-12 months), of 14.67 kg for toddlers (aged 1-3 years), and of 80.89 kg for adults (aged > 18 years). However, those intake figures deviated manifoldly from publicly available dietary data and may have been representative to indigenous people in Greenland and Canada but not for the hunting community in EU27 (here, here, here, here, here).

- After criticism, ECHA revised - without proper scientific justification - the annual game meat intake values to 2.5 kg (infants), 10.8 kg (toddlers) and to 31.5 kg (adults).

7. Did ECHA approach the EU's maximum allowable threshold for lead in a plausible way?

Regulation 1881/2006 sets the maximum allowable level (ML) of 0.1 mg lead/kg for meat from domesticated animals, like bovine animals, sheep, pigs, and poultry (here). ECHA has used that ML as the threshold for a "*dangerous concentration*" of lead in game meat.

It is however questionable whether the threshold of 0.1 mg lead/kg is meaningful for game meat due to the obvious differences between water soluble lead in meat on domesticated animals and metallic lead in game meat hunted with lead metal bullets. Metallic lead is barely present in meat from domesticated animals.

- As regards the "*dangerous concentration*" of lead in game meat, the risk is related to the fraction of lead metal that is bioavailable and not to the total quantity of metal in game meat.

8. Was ECHA's handling of outliers in the lead concentration analysis scientifically justified?

Inversely to EFSA's scientific opinion on lead in food where "*occasional results at the very high end of the range, that were more than ten times higher than the next highest result, were considered as outliers and removed from the calculations […]*" (here), ECHA refused to exclude outliers from the dataset.

For example, the dataset contained wild boar meat with 3.65 g/kg and deer meat with 5.309 g/kg of lead residues. If, for example, the weights of those animals were 100 kg, those lead amounts represent 36 and 53 times the weight of a typical bullet (10g). Obviously, those high lead contents are the results of samples taken directly from wound channels and/or areas close to wound channels which parts are not even edible and discarded.

If the above-mentioned wild boar "outlier" had been excluded from the analysis, the calculated mean would have dropped from 2.827 mg/kg to 1.9 mg/kg and the 95% confidence interval, a common practice in dataset analysis, to 0.093 mg/kg. The same applies to deer samples where the mean was 2.006 mg/kg (n=5034), but when using the 95% confidence interval, the mean drops to 0.045 mg/kg (n=4983). The values would thus be below the threshold of 0.1 mg/kg used (mistakenly) by ECHA.

- ECHA's refusal to exclude significantly deviating observations (i.e. abnormal or anomaly data points) entails misleading results, as those samples had a significant impact on the outcome and were not typical examples of the underlying population: they were not representative.
- ECHA's exposure assessment is thus a very conservative overestimation and deviates significantly from the previously published human health risk assessments on the use of lead ammunition (here, here, here, here, here).

9. Was ECHA's sample size sufficient on children?

ECHA allocates significant importance to the data on infants (0-12 months of age) and toddlers (1-3 years old), which are sensitive to lead related IQ effects. In this respect and based on an equal age distribution in hunter families as in the general EU population, ECHA estimates that "*close to 1.1 million children aged 7 or younger are particularly vulnerable to lead exposure*" and that "*in any given year about one million children are likely to be exposed to lead in game meat*".
The dataset used in the human health risk assessment shows only 26 samples related to infants and toddlers comprising the sample of 135 children in total.

- There are serious doubts whether the sample of 135 children (0.01%) of the target population (one million children in hunter families in EU27) can be statistically meaningful; as such a sample size would not have sufficient statistical power to detect meaningful effects, like the alleged loss in IQ points for children. However, ECHA proceeded to extrapolate from this miniscule sample size.

10. Could children absorb 50% of ingested metallic lead?

As regards risk from the consumption of game meat hunted with lead ammunition, ECHA assumes that metallic lead is absorbed more in children (50%) than in adults (10%); such figures are based on the work of EFSA on lead in food (here).

However, estimating intestinal absorption of a substance (i.e. a process in which a substance are taken up from the contents of the intestine) is a major source of uncertainty in any risk assessment. Lead has many different chemical forms, like lead metal, sulphide, chloride, oxide, carbonate, chromate, octoate, and naphthenate, having significant differences in the absorption in humans.

In other words, there are significant differences between bio-accessible lead compounds and metallic lead in solid form, like in ammunition, and ECHA has not made any differentiation between those.

For example, the 0.1 mg lead/kg set in Regulation 1881/2006 for some foods, which ECHA has used as the threshold for human health risk assessment related to game meat, does not refer to metallic lead but to bio-accessible lead ions (or has somebody seen lead metal in cereals, beer, or wine). Also a twelve-fold difference has been seen in absorption between metallic lead and lead carbonate, and thus a clear reference should always be made to the chemical form of lead involved (here). In this respect, the US Agency for Toxic Substances and Registry notes that children can "*absorb 40-50% of an oral dose of* ***water-soluble Pb*** [lead] *compared to 3-10% for adults*" – emphasis added (here). Therefore, it is important to recognise the forms in which lead exists, as regulations would be more restrictive than factual scientific data mandates and the economic implications of ill-advised regulations are potentially enormous.

- The basic question is whether ECHA seriously believes in the case where a child accidentally ingests a 10 grams bullet containing lead, half of it has been absorbed the next day?

11. Did ECHA correctly consider the relative bioavailability of lead in game meat?

Obviously lead cannot be absorbed (i.e. digested into the bloodstream and transported to different parts of the body) unless it is present in game meat. ECHA's data contain 12 908 samples of game hunted with lead shots and bullets. Those samples range from (a) either no-lead or concentrations that could not be detected using the methods employed by laboratories (11 237 samples or 87% of the total); and (b) samples above the threshold of 0.1 mg lead/kg, as set in Regulation 1881/2006 (1671 samples or 13% of the total). The latter is the relative bioavailability of lead metal ready to be absorbed from all the game meat consumed (here).

ECHA has assumed that the absorption rate of lead metal is 50% for children and 10% for adults. As 13% of the samples were above 0.1 mg lead/kg, this equates to an absolute bioavailability, which is a fraction of ingested lead that becomes available for distribution, of 6.5% (0.13 × 0.50) for lead metal in game meat ingested by children and 1.3% (0.13 × 0.10) lead metal in game meat ingested by adults. Those deviate significantly from the absorption values of 10% (adults) and 50% (children) used by ECHA.

- The issue of absolute and relative bioavailability was raised during the opinion development, but ECHA neglected analysing the whole topic and RAC just notes the matter without further discussion and proper reply (here).

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

ENVIRONMENTAL RISKS

12. What is the scale of the problem resulting from discharged rifle bullets into the environment?

Calculated over 20 years, ECHA estimates that the proposed restriction would reduce lead emissions related to the use of large calibre (≥5.6 mm) lead centre-fire ammunition for hunting by 2200 tonnes. The EU land area covers over 4 million km² (here). Dividing the avoided lead emission by the EU land area gives the lead emission reduction of 5.5 grams/hectare over 20 years, and thus an annual reduction of 0.275 grams/hectare.

- It is questionable whether such an annual lead emission causes unacceptable environmental risk for the purposes of REACH.

13. What was ECHA's basis to estimate that 'at least 135 million birds are currently at risk of lead poisoning' and that 'more than one million birds are expected to die per year'?

ECHA estimated that direct lead poisoning kills at least 1% of terrestrial birds annually. However, a recent peer-reviewed study (here) demonstrates that the ECHA's estimation methodology is simplistic and 'highly uncertain'. Based on data pooling across European countries for terrestrial birds, the most comprehensive study yet shows that lead ammunition causes a direct poisoning of 0.2%.

- Direct cause of death (0.2%) is thus estimated to be 5 times lower that the ECHA's 1%.
- Estimations based on the said more systematic and less qualitative study would result in more-informed management decisions for protecting and sustaining European avian populations.

TECHNICAL FEASIBILITY

14. Is shortening the transitional period for restricting lead shot tenable?

ECHA proposed a five-year transition period for the ban of the use of lead shot in hunting (with shotguns), which is already problematically short. In their combined opinion, RAC and SEAC believe that the proposed period is too long and could be shortened (apparently to 18 months) because alternatives are widely available on the market and the supply of steel shot can be expected to grow in response to the previous REACH restriction of lead shot over wetlands.

The proposed shortened transition period is highly problematic. First, it is for RAC and SEAC to demonstrate that the production capacity of non-lead shot would be sufficient to accommodate an increased demand within the proposed 18 months, as neither machinery nor know-how of lead shot manufacturing processes can be transferred to manufacturing shot from substitute materials, like steel. Suppliers of new production machinery are few, and have a limited capacity. Transition to lead-free ammunition also affects supply chains of steel shot (from China) as well as wads and propellants (under general shortage), which must be modified. For example, leading UK manufacturers have indicated that switching from lead to alternatives even within a five-year window would be impossible (here).

- The main issue is not whether the manufacturers can produce substitutes to lead shot but when they are capable of manufacturing to a similar production level as now. It is also foreseeable that a shortened transitional period would entail shot shortages, as supply cannot catch up with the demand, which would affect the prices of non-lead shot.

Second, the proposed shortened transition period would be too short for hunters to (a) replace non-steel-tested shotguns (here); (b) modify shotguns and have them proofed (here); and (c) practice and trial alternative materials (here).

- It is not apparent from the documentation whether ECHA, RAC and SEAC have fully assessed all possible consequences of the proposed restriction in accordance with the principle of proportionality, and carefully considered all elements of a successful transition to non-lead ammunition.

15. Does the REACH lead shot over wetlands restriction influence the wider lead shot market?

SEAC expects that the supply of steel gunshot grows in response to the restriction of lead shot over wetlands.

After 15th of February 2023, Regulation 2021/57 has prohibited the use of lead gunshots in or within 100 metres of wetlands (here). However, only five EU Member States were without any regulation on the use of lead shots over wetlands and/or for waterbird hunting (Greece, Ireland, Poland, Romania, and Slovenia).

- The application of Regulation 2021/57 has only a limited effect in the market size, market characteristics, and market growth of non-lead gunshots, as 22 Member States have already restricted the use of lead for hunting waterbirds/over wetlands.

16. Will the proposed restriction impact military and defence sectors?

The proposed restriction could disproportionately affect the EU's defence economy and ammunition supply chains, as most ammunition manufacturers serve both civilian and

military markets. This may disrupt ammunition supplies for defence forces. Additionally, adapting civilian production lines for lead-free ammunition may hinder the military's ability to meet surge demand. A minimum 10-year moratorium on the restriction has been recommended (link).

17. Is the C.I.P regime relevant to the proposed restriction?

The main objective of the Permanent International Commission for the proof of small arms (the C.I.P.) is to ensure technical safety of all civilian firearms and ammunition (here). Mutual recognition is the core of the regime in that each C.I.P. Member State accepts firearms and ammunition, without further testing, that have been tested according to C.I.P. standards by an accredited Proof House of another C.I.P. Member State. To comply with testing regulations, firearms and ammunition from countries outside the 1969 C.I.P. Convention, including those from major exporters China and Turkey, need to be tested and marked prior to placing on the market in the C.I.P. Member States.

However, only 10 EU Member States are signatories of the 1969 C.I.P. Convention, 2 EU Member States have unilaterally adopted the regime, and thus 15 EU Member States are not bound by the maximum pressure and velocity for ammunition set by the C.I.P. standards. Consequently, ammunition in one EU Member State, which is a member of the 1969 C.I.P. Convention, may be found to exceed the allowed maximum pressure and/or velocity limits (for high performance shots 430 m/s), and placing on the market of that lot is rejected. The same lot (518 m/s) may pass in another Member State, which is not a Member of the C.I.P. Convention, and placed on the market.

- Member States may choose to apply 1969 C.I.P. Convention marking to place on the EU market as established in Directive 2021/555 . It is confusing that ECHA and SEAC have not clarified the relationship between the intended restriction, Directive 2021/555, and the 1969 C.I.P. Convention. If Member States allow placing on the market certain ammunition under REACH (518 m/s) whilst other Member States prohibit the marketing of those products because of the 1969 C.I.P. Convention (maximum velocity 430 m/s), internal frontiers come into being and the functioning of the internal market would be affected.

SOCIO-ECONOMICS

18. How does a restriction on lead ammunition impact hunting activities in Europe?

As a reply to ECHA's invitation to submit evidence and information on lead ammunition (here), a broad hunter survey was conducted. The survey was translated to 16 European languages, got answers from 18,284 participants based in 30 countries, and thus the results are representative for all 7 million European hunters.

If the restriction comes into force, the survey indicates that 1 in 4 hunters will stop hunting entirely and at least 30% will hunt less frequently. Moreover, at least 20% of hunters will stop shooting activities other than hunting like training and/or sport shooting and approximately half will engage in non-hunting shooting activities less often. Moreover, 34% of hunters indicated that their firearms are not compatible with non-lead ammunition. The costs of substituting or modifying firearms are not the only factors distressing hunters: approximately 70% of them were either 'very concerned' or 'concerned' about the price tag of reproofing and the fees associated with practice/target shooting. (here).

- SEAC by-and-large ignored those findings by stating that "*a short-term decrease of hunting activities in response to the proposed restriction is possible* []", but "*experience from past regulatory measures on lead ammunition does not provide evidence showing a long-term drop in hunting*".

19. What is the monetary impact of reduced hunting activity in Europe resulting from this restriction?

Based on national statistics of the number of hunters, ECHA estimated that there are around 6 000 000 hunters in the EU27 with an annual hunting budget of €3 000 per hunter. Therefore, hunting generates a revenue of around € 18 billion annually to the economy of EU27.

If the proposed restriction will be imposed, the large-scale hunter survey estimates that 25% of hunters will stop hunting entirely and at least 30% of hunters will hunt less frequently. When the number of hunters is around 6 000 000 in EU27, it can be estimated that around 1 500 000 (6 000 000 × 0.25) hunters will stop their hunting activity. If the average annual hunting budget is €3 000, the economic loss of ceased hunting activity would be around €4.5 billion (1 500 000 × €3 000) in EU27. Every single percentage point of ceased hunters would thus cause an economic loss of €180 million (60 000 × €3 000) in EU27.

If 30% will hunt less frequently, the number of hunters affected would be 1 350 000 [(6 000 000 – 1 500 000) × 0.3]. Using the Californian figure of 17 as an estimate of annual hunt days (here), it could be calculated that those EU27 hunters would hunt 5 days less (17 × 0.3) if the REACH restriction would be imposed. The daily cost of hunting is calculated at €176 (€3 000/17). Hence, the economic loss would be at least €1.19 billion (€176 × 5 × 1 350 000).

- The projected reduction in hunter expenditure would cause economic hardship for individuals, businesses, and communities dependent on/benefiting from recreational hunting. It is estimated that the restriction on lead in outdoor shooting would cause hunters to reduce their level of hunting activity, which would cause an estimated total annual economic loss of at least €5.69 billion which would have a significant ripple effect throughout economy of EU27. Every single percentage point of ceased hunters would cause an economic loss of €180 million in EU27.
- SEAC has not provided any reply to the above-mentioned calculations although having a legal obligation under Articles 71 and 69(6)b of REACH to consider all the relevant factors and circumstances related to an intended restriction.

20. Will the intended restriction affect historic firearms?

SEAC notes that "*the use of lead-based ammunition would be banned for vintage and/or muzzle loading weapons, unless used at a shooting range that fulfils the conditions set in the restriction*" and that "*hunting with such weapons would no longer be possible, because […] no leadfree ammunition is available for the use in antique muzzle loading guns*".

However, the availability of alternatives is the determinant condition for a restriction under REACH which is about the manufacturing, placing on the market and use of substances.

In case there are no alternatives for lead ammunition regarding certain applications, the intended REACH restriction would not prohibit the manufacturing, placing on the market and use of substances but '*those certain applications*', like the use of vintage and/or muzzle loading weapons for hunting.

SEAC admits that the use of lead ammunition in vintage and/or muzzle loading weapons is very small, "*both in the number of guns that are concerned, and the amount of lead released to the environment that originates from such guns*" and estimates that the latter is around 0.8 tonnes/year for hunting. SEAC thus considers that an annual reduction of 0.002 grams/hectare related to hunting with vintage and/or muzzle loading weapons causes an unacceptable environmental risk for the purposes of REACH.

- It remains debatable whether a restriction on the use of historic firearms would exceed the limits of what is appropriate and necessary to attain the objectives of REACH and whether the associated disadvantages to hunters would be proportionate.

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

SPORTS SHOOTING

21. To what extent did ECHA take into account the differences between the various shooting sport disciplines in Europe?

"Alternatives to lead bullets for sports shooting: According to the Dossier Submitter's assessment, alternatives to lead bullets (including airgun pellets) exhibit sub-optimal performance in terms of the accuracy required for sports shooting." (Final RAC and SEAC opinion, p. 88). Even though this statement is valid for all shooting sport disciplines, ECHA in its report referred almost exclusively to the conditions in the practice of the most widespread (Olympic) shooting sports disciplines. Other disciplines of internationally active shooting sports federations (e.g. International Practical Shooting Confederation, IPSC) were not adequately considered. Importantly, different conditions prevail in the conduction of these disciplines, which enable comprehensive lead management in shooting sports, but different risk management measures have to be applied. For example, aside from the costs and time required to adapt IPSC ranges to non-lead, there's a bigger problem because the targets for IPSC disciplines are made of steel. Therefore, it is necessary to use bullets and shot that do not cause ricochet risks to ensure the safety of individuals. At the same time, lead management is possible on these shooting ranges with widely applied Best Management Practices, not included in ECHA's proposed derogation requirements. The intended restriction would therefore hinder or even terminate those shooting sport activities in the EEA.

SEAC notes in its opinion that "the rules at international competitions still prescribe the use of lead ammunition, the political decision-maker may consider it as desirable or necessary to create training opportunities for the participation in such events allowing the use of lead ammunition by means of a special derogation as an interim solution". This should be applied to the different disciplines of all shooting sport federations by setting up appropriate Risk Management Measures as derogation requirements.

SPORTS SHOOTING WITH LEAD SHOT

22. What is the position of the two major international shooting sport federations, FITASC and ISSF (and the European Shooting Confederation - ESC), on ECHA's proposal to ban lead shot in clay target sport shooting?

The two major international shooting sport federations, that regulate sports shooting around the world have expressed deep concerns about the implications of this proposal. They call for significant changes to the way in which derogation conditions are proposed for shooting ranges to ensure a more practical approach for shooting ranges. This will ensure that sports shooters, which need to use lead for training and competitions are treated fairly. Read their position statement here.

23. What are the ballistic issues preventing the replacement of lead gunshot by steel gunshot for clay target sport shooting?

The ballistic performance of steel is incompatible with the practice of clay target sport shooting for FITASC, ISSF (and ESC) disciplines. It is not a feasible alternative to lead gun shot from a technical perspective.

The ballistics of steel shot are totally different from the ballistics of lead shot in terms of density (7.8 for steel vs 11.3 for lead), impact pressure, shotgun recoil, vibrations, noise, as well as the energy required to break targets and ejection velocity[3].
The conclusions of the BPK report of 26 September 2022[4], commissioned by ECHA/SEAC on the ballistic consequences of the transition from lead to steel, show, as FITASC have previously demonstrated, that it is not possible to replace 2.4 mm lead shot with 2.6 mm steel shot (as this has been previously claimed by ECHA/RAC, which based their founding on false data).

The BPK report recommended replacing 2.4 mm lead shot by steel shot with diameter between 3.25 and 3.5 mm, with no guaranty at all that it has sufficient energy to break a target at shooting distances beyond 30 m.

Importantly:
- For ISSF clay target disciplines, the ISSF Rule Book states that "Pellets must not exceed 2.6mm in diameter" (9.4.3.1.d),
- For FITASC clay target disciplines, the rules of FITASC disciplines state that: "The cartridge shot load must not exceed 28 grams of lead with a maximum tolerance of +2%. Shot must be of a regular diameter of 2.0 to 2.5 mm with a tolerance of more or less 0.1mm."

[3] https://www.fitasc.com/upload/images/echa_2022/20230330_sum_up_fitasc_esc_studies_provided_to_echa.pdf
Ballistics (references in red) – Acoustics (See file 1 - Chp 6.4)

[4] https://www.fitasc.com/upload/images/echa_2022/20220926_bpk_consultancy_ballistic_report.pdf

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

EU legislation cannot obligate countries outside of the EEA to make such a change. Further, with such diameter by 3.25 and 3.5 mm, the density of the pattern is insufficient to avoid holes and thus, is unable to break the target.

24. Will the noise associated with the use of steel shot create a problem for clay target sport shooters?

The substitution of lead shot by steel shot would, *de facto*, result in a noise increase of 9 decibels (dBA), even higher than the permitted noise emergence[2].
On the logarithmic scale, adding 3 decibels is equivalent to doubling the perceived sound level (and the associated sound power):

- if the sound level is 83 dB(A), 86 dB(A) is the double of 83 dB(A);
- if the sound level is 86 dB(A), 89 dB(A) is the double of 86 dB(A);
- if the sound level is 89 dB(A), 92 dB(A) is the double of 89dB(A).

Consequently, an emergence of 9dB gives a 180% increase in environmental sound pressure on the human ear. The most important countries for sport shooting are those with a high population density. Consequently, any increase in sound emissions by sports facilities, in particular due to the use of steel shot cartridges, exposes shooting ranges to a range of future compliance problems. This represents an immediate risk of relationship difficulties with their neighbourhoods and a very serious risk of closure by a court or via administrative decisions following complaints.

25. Will the higher pressure in steel shot cartridges pose problems for the health of clay target sport shooters?

A beginner shooter will typically fire 1,000 cartridges per year, while an international shooter will fire 60,000. Studies have shown that the pressure in shotgun cartridges increases as temperature does. So, in a steel shot cartridge where the pressure is higher than a lead shot cartridge, there is a high risk of recoil problems when shooting at high temperatures in summer. The average pressure in a 28gr lead gunshot cartridge is between 550 and 600 bars, at ambient temperature (20°C). When the cartridge's temperature increases to 30°C due to outside temperature, the pressure increases by 30%.
The average pressure in a 28gr steel gunshot cartridge is between 650 and 800 bars, at ambient temperature by 20°C. If the steel cartridge's temperature increases to 30°C, then its pressure increases by about 200 bars. Such increases in pressure *(i)* endanger the shooter's health, *(ii)* affects development of shooting sports to juniors, ladies or older shooters and *(iii)* making it very uncomfortable for competition shooters to train.

26. What are the ricochet issues with steel gunshot?

E.S.S.F. Secretariat: ANPAM - Viale dell'Astronomia, 30 - 00144 Roma (Italy)
Tel +39 06 5903510 - Fax +39 06 54282691 - Email: essf.secretariat@anpam.it

With steel pellets by 3.25 / 3.5 mm diameter, the ricochet risk becomes higher than lead on any material (wood, stone). This needs to be taken into account for many sports shooting ranges and for certain types of hunting, particularly on rocky landscapes.