LEAD INDUSTRY REGULATORY OVERVIEW AND UPDATE

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International Lead Association

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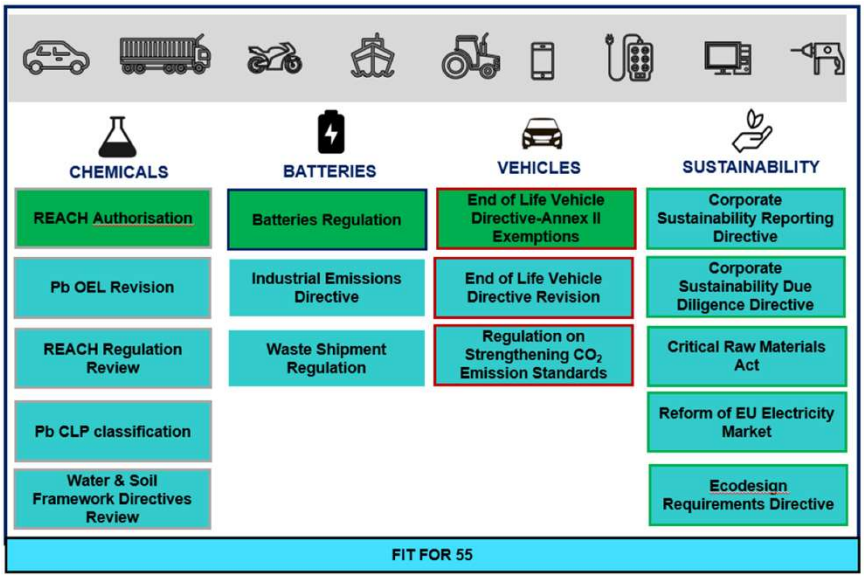
EU Regulatory Environment Impacting Lead



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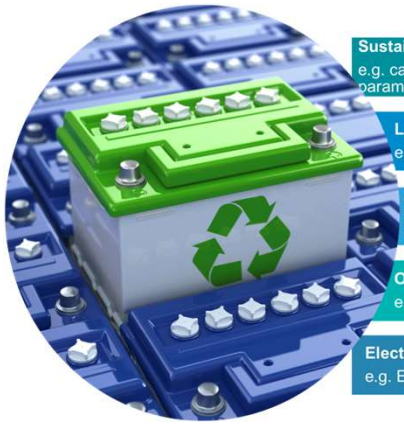
EU legislation timeline

LEGISLATION	2023	2024	2025	2026	2027	2028	2029	2030
Battery Regulation Article 6		ELECTIONS	ECHA report on substances of concern			Commission restriction proposal		
Regulation on circularity requirements for vehicle design and management of end of life vehicles			Lead battery exemption review					
REACH Authorisation	ECHA Recommendation		Commission amend Annex XIV			Latest application date		
CMRD new EU binding OEL and BLV	Revised limits published		Adopted by Member States					

EU Battery Regulation background

- New Regulation is replacing existing 2006 Battery Directive in 2023
- But more detailed rules (secondary legislation) to be adopted from 2024 to 2028 to be fully operational
- Designed to make the EU a center of excellence for sustainable batteries to differentiate with products manufactured in other regions
- For first time that EU battery legislation will cover entire life cycle with new focus on lithium-ion

Issues Covered by the Regulation



Sustainability and safety:
e.g. carbon footprint rules, min. recycled content, performance & durability criteria, safety parameters

Labelling and information:
e.g. information on sustainability and data on state of health and expected lifetime

End-of-life management:
e.g. collection targets & obligations, targets for recycling efficiencies & recovered materials, EPR

Obligations of economic operators:
e.g. linked to product requirements and due diligence schemes

Electronic information exchange
e.g. EU electronic exchange system, battery passport, QR code

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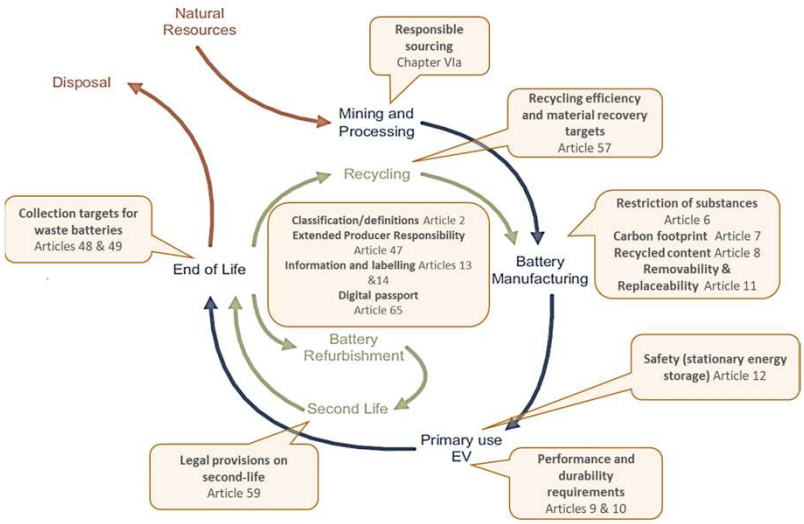
Full battery life cycle is covered



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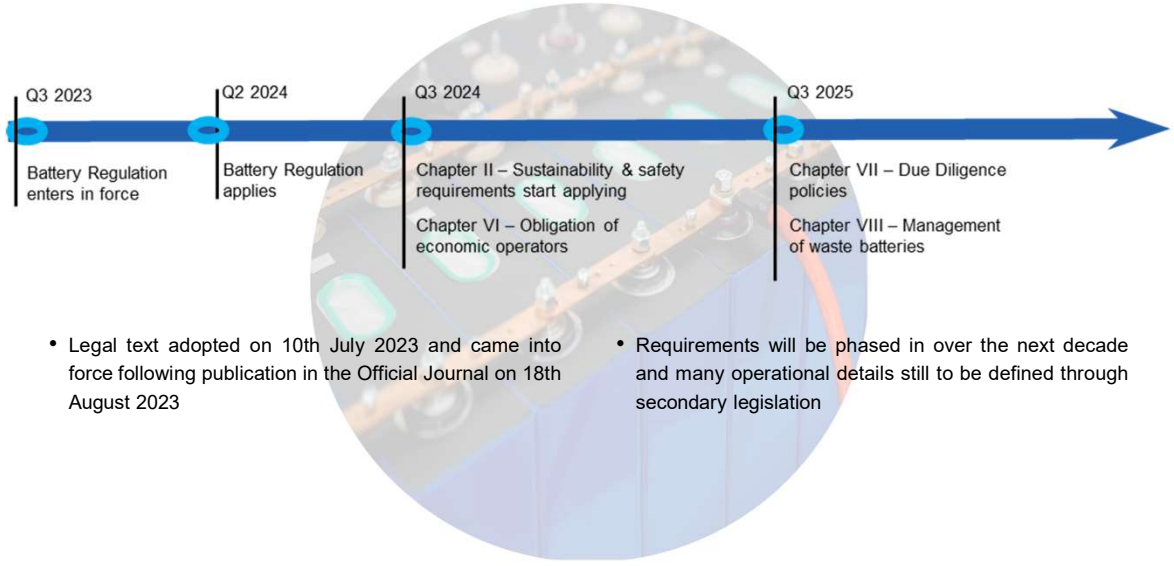
Elements phased in over time



- Legal text adopted on 10th July 2023 and came into force following publication in the Official Journal on 18th August 2023
- Requirements will be phased in over the next decade and many operational details still to be defined through secondary legislation

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Secondary Legislation - details yet to be defined…

- **Hazardous substance management**
  COM evaluation report (Art. 6) – restriction procedure (Art 86-88)
- **Carbon Footprint (Art. 7)**
  Methodology – Format – Classes – Market access
- **Recycled Content (Art. 8)**
  Methodology – Target re-assessment – Market access
- **Performance & Durability (Art. 10)**
  Methodology – Market access
- **BESS Safety (Art. 12)**
  Common specification
- **Labelling (Art. 13)**
  Harmonized specifications
- **Due Diligence Policies (Art. 47ff)**
  Application guideline – Substances – Risk categories
- **End-of-life Management (Art. 71ff)**
  Recycling efficiency – Material recovery – Equivalent conditions – Reuse & repurpose
- **Reporting (Art. 76)**
  Report to Commission
- **Battery Passport (Art. 77)**
  Format - Update content – Access level criteria

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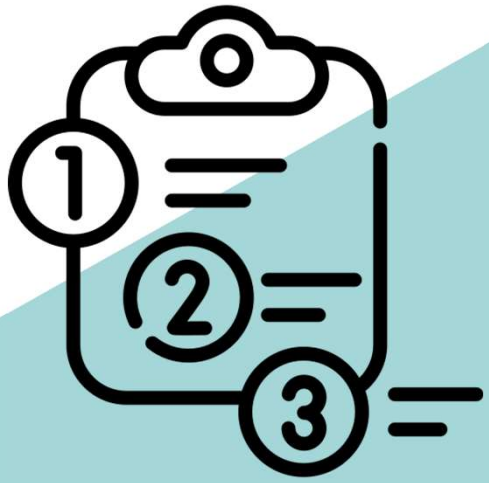
A closer look at some of the new requirements



Article 6: Restrictions on Substances

- *In the event of an unacceptable risk to human health or the environment, arising from the use of a substance in the manufacture of batteries or from the presence of a substance in the batteries when they are placed on the market, or arising during their subsequent life cycle stages, including during repurposing or the treatment of waste batteries, that is not adequately controlled and needs to be addressed on a Union-wide basis, the Commission shall adopt a delegated act in accordance with Article 89 to amend the restrictions in Annex I,*
- *By 31 December 2027, the Commission, assisted by the European Chemicals Agency set up under Regulation (EC) No 1907/2006 ('the Agency'), shall prepare a report on substances of concern, namely substances having an adverse effect on human health or the environment or hampering recycling for safe and high quality secondary raw materials, present in batteries or used in their manufacture.*
- *The Commission shall submit that report to the European Parliament and to the Council detailing its findings and shall consider the appropriate follow-up measures*

Potential for future ban on use of certain battery chemistries

Article 7: Carbon Footprint

- *Applies to Electric Vehicle, rechargeable industrial batteries with a capacity greater than 2 kWh and LMT batteries*
- *Stepwise approach as secondary legislation still needs to developed and published*
- *COM to publish calculation methodology, Industry has to **declare** CF information*
- *COM to publish CF Classes, Industry has to **label** CF Class*
- *COM defines **max. CF class** for market access, products above max. CF Class excluded from market*

Declaration

- *EV - 18 month after EIF or 12 month after DA, whichever is the latest*
- *IE > 2kWh - 30 month after EIF or 18 month after DA, whichever is the latest*
- *LMT - 60 month after EIF or 18 month after DA, whichever is the latest*

CF class label

- *EV - 36 month after EIF or 18 month after DA, whichever is the latest*
- *IE > 2kWh - 48 month after EIF or 18 month after DA, whichever is the latest*
- *LMT - 78 month after EIF or 18 month after DA, whichever is the latest*

Max. CF class for market access

- *EV - 54 month after EIF or 18 month after DA, whichever is the latest*
- *IE > 2kWh - 66 month after EIF or 18 month after DA, whichever is the latest*
- *LMT - 96 month after EIF or 18 month after DA, whichever is the latest*

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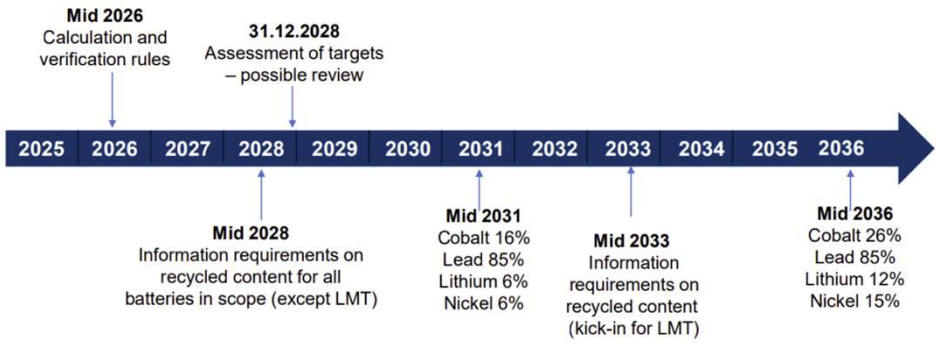
Article 8: Recycled Content



- Applicable to industrial, SLI (former automotive), EV batteries and LMT
- Staged approach: calculation methodology first, then declaration of recycled content, then minimum targets for recycled content (cobalt, lead, lithium, nickel)
- Possibility to review minimum targets in 2028-2029

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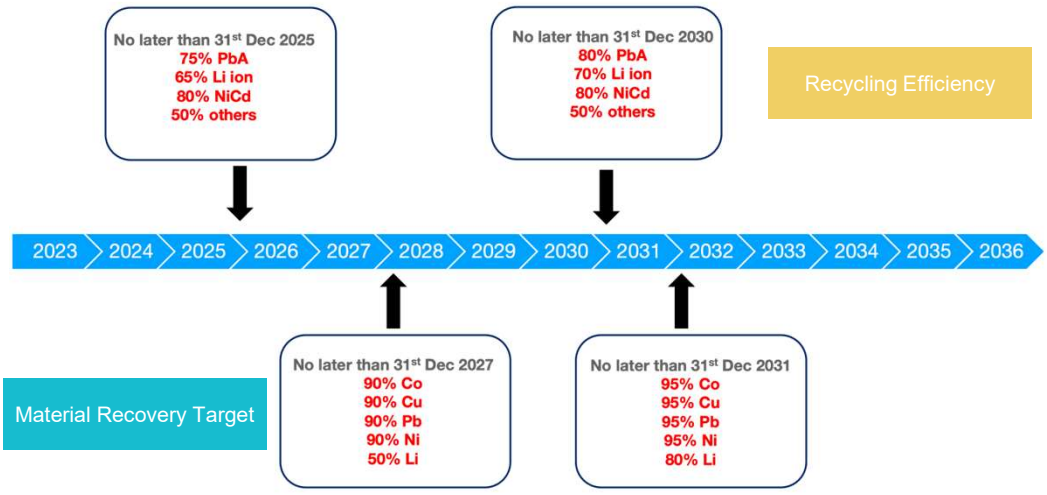
Article 71: Recycling Efficiency and Material Recovery Targets



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EU ELV Directive - hazardous substances restrictions

- EU ban on lead in vehicles (passenger + light commercial)
- Time-limited exemptions where no viable alternative lead-free battery technology exists for mass-market applications
- Previous exemption for all lead batteries under 75V DC
- Exemption review concluded 2023

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Final agreed text on exemptions for lead batteries

- Continuation of the full exemption for 12 V lead batteries
- Exemption for 24 V lead batteries in vehicles for certain specialist applications from 1 Jan 2024
- Ban on all other lead batteries
- Next review in 2025…

Lead and lead compounds in components		
5(a). Lead in batteries used in high-voltage systems (4) that are used only for propulsion in M1 and N1 vehicles	Vehicles type approved before 1 January 2019 and spare parts for these vehicles	X
5(b)(i). Lead in batteries: (1) used in 12 V applications (2) used in 24 V applications in special purpose vehicles as defined in Article 3 of Regulation (EU) 2018/858[1] of the European Parliament and of the Council	(3)	X
5(b)(ii). Lead in batteries used in applications not included in entry 5(a) or entry 5(b)(i)	Vehicles type approved before 1 January 2024 and spare parts for these vehicles	X

>75V banned in 2019

12V & 24V in special purpose vehicles*. Exemption to be reviewed by 2025

All other voltages banned after 2024

*Motor homes, ambulances, hearses, wheel chair access etc

EU Proposal for New Regulation on Circular Vehicle Design & ELV

- Commission proposal published on 13th July but is unlikely to pass the Regulatory scrutiny process before EU elections
- Replaces ELV and Directive on the type-approval of motor vehicles regarding their reusability, recyclability and recoverability
- Based on Article 114 of the Treaty on the Functioning of the European Union (TFEU)….single market
- Scope gradually expanded to include new categories such as motorcycles, trucks and buses

Main Objectives

- Reinforce producer responsibility by establishing national Extended Producer Responsibility schemes under uniform requirements
- More inspections, digital tracking of end-of-life vehicles across the EU, better separation of old cars from end-of-life cars
- Rules to enhance recovery of more and better-quality raw materials, including critical raw materials, plastics, steel and aluminium
- Increase use of recycled materials
- Enhance circularity in the design and production of vehicles
- Minimises use of hazardous substances

Article 5 - Restrictions on Hazardous Substances

- Carries over ELV Restrictions (and exemptions) for lead, mercury, cadmium and hexavalent chromium in vehicles with intention to eventually transfer over battery use of these substances [and other SoCs] to the new EU Battery Regulation…..
- Other substances of concern to be addressed via EU REACH
- ECHA given responsibility for preparing a report for Commission on the technical and economic feasibility of alternatives [12 months]
- New criteria for exemptions;
- The use of the substances is unavoidable
- Socio-economic benefits outweigh the risk to human health or the environment
- No suitable alternative substances or technologies
- ELV mandated 2025 exemption review for use of Pb in batteries in M1 & N1 vehicles may mean that initiated under the existing Directive as Regulation unlikely to be in force by that date [tbc]
- For any expansion in scope of ELV legislation to L-category vehicles, lorries, buses and trailers, a new dedicated restriction process, implemented via delegated acts, would be applied

REACH AUTHORISATION

REACH Authorisation – What is at stake for lead?

- Authorisation for lead metal would result in a sunset date (expected after 2027) after which the use of lead in manufacturing products (articles) in the EU must cease unless
  - An authorisation is granted
  - The use is exempted
- Authorisation for continued use may be granted to companies in case
  - No technical or economically viable alternatives
  - Risks are controlled (applies only to substances with effects thresholds)
- Authorisation process does NOT cover
  - Manufacture of substances for export
  - Importing of products containing these substances
- Authorisation immediately signals to users that lead is to be substituted in EU

REACH Authorisation – Steps

Step 1
Substances of very high concern (SVHC)

- Registry of SVHC intentions until outcome
- Preparing the SVHC dossier
- Public consultation
- Adding substances to the Candidate List

Step 2
Recommendation for inclusion in the Authorisation List

- Prioritisation
- Draft recommendation
- Consultation
- ECHA MSC opinion
- ECHA Recommendation for inclusion in the Authorisation List

Step 3
Inclusion in REACH Annex XIV

- Commission draft regulation
- Interservice consultation
- REACH Committee vote
- Scrutiny by European Parliament and Council
- Regulation amending Annex XIV published

Step 4
Application for Authorisation

- Application for Authorisation
- Public consultation
- RAC and SEAC opinions
- Commission decision (REACH Committee vote)
- Implementation
- Review report, if wishing to renew Authorisation

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Latest on Risk of REACH Authorisation

- **EU Commission has no plans to progress Pb metal to Annex XIV (Authorisation List) at this time**
- Alternative risk management measures including targeted REACH Restrictions perceived as more effective and less resource intensive than Authorisation… Significant activity already being taken to strengthen other legislation designed to manage risks from Pb exposure
- REACH Revision (revised REACH Regulation not expected to come into force before 2027) and 2024 Elections will likely conclude before any further consideration of potential additional REACH risk management options for lead
- **Imminent REACH Authorisation listing risk for lead is now considered low, and a long way off if it were to happen…(post 2027?)**

EU Binding Occupational Exposure Limits

- Binding occupational exposure limit values represent to highest numerical values that a Member State can implement into National Law
- Commission proposal to amend the Directive on the protection of workers from the risks related to exposure to carcinogens, mutagens and reprotoxic substances at work was published on 13th Feb 2023
- The proposal is now undergoing the ordinary legislative procedure that involves review by EU Council and Parliament

- **to lower the occupational exposure limit from 0.15 milligrams per cubic meter (0.15mg/m^3) to 0.03mg/m^3 [8hr TWA]**
- **to lower the biological limit value from 70 microgram per 100 millilitre of blood (70µg/100ml) to 15µg/100ml**
- **to minimise any possible risks by ensuring that the blood lead level in women of childbearing age should not exceed the reference values of the general population not occupationally exposed to lead in the respective Member State or 4.5 microgram per 100 ml of blood**

Latest Political Positions

	Current EU. Limit values	COM proposal	Council of Member States Common Approach [Adopted 12 June 2023]	Draft report of MEP Villumsen for the EP EMPL Ctee [9th May 2023]	EP EMPL Ctee compromise text [14th July 2023]
Binding Limit Values in air	0.15mg/m3	0.03 mg/m^3	Same as COM + notation that lead is a non-threshold reprotoxic substances (i.e., there is no safe exposure level)	0.004 mg/m^3	Same as COM + notation that lead is a non-threshold reprotoxic substances (i.e., there is no safe exposure level)
Biological Limit Value	70µg/100ml blood	15 µg/100ml blood	Same as COM, with a transition at 35µg/100ml blood until end 2028 *If a declining trend is seen in workers with exceedance due to exposure prior to the entry into force of the Directive, these workers may stay at work and will be under medical surveillance*	4.5 µg/100ml blood	15 µg/100ml blood *If >30 µg/100ml blood then employer should ensure worker no longer exposed to lead, if between 15-30 µg/100ml blood and if improving trend then worker may continue working with tasks that involve exposure to lead*
Biological Limit Value for childbearing age women	N/A	4.5 µg/100ml blood OR average of national population (is this data exist) *	Same as COM *Protection of foetus and women of childbearing age should not be to the detriment of women labour market*		4.5 µg/100ml blood OR average of national population (is this data exist) *To be reviewed every 5 years*
Medical surveillance	0.075mg/m3 40µg/100 ml blood	0.015 mg/m^3 9µg/100ml blood	Same as COM	0.002 mg/m^3 2.7 µg/100ml blood	No limit proposed but stated that medical surveillance must be carried out regularly for all workers exposed to lead

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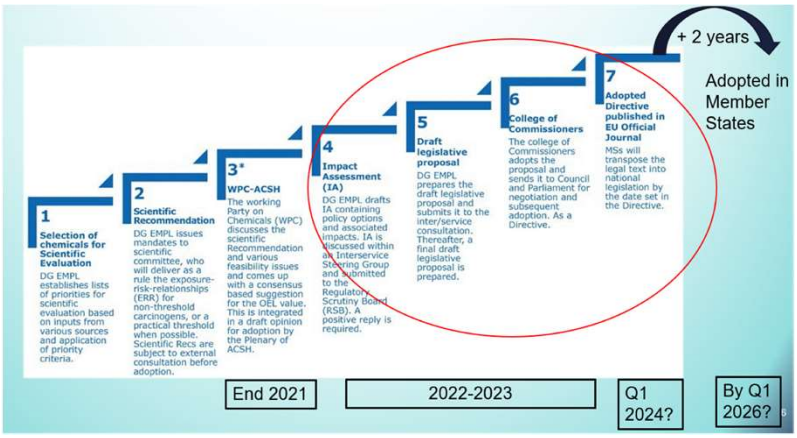
Next Steps

- EPSCO Council will hold a public debate on the initiative during the meeting to be held over 27-28 November
- Trialogue expected to take place Q4 with intention to reach agreement in first reading
- Directive Published in OJ Q1 2024
- New values come into force in Member States by Q1 2026 (although MS can still adopt lower values)



EU WATER FRAMEWORK DIRECTIVE

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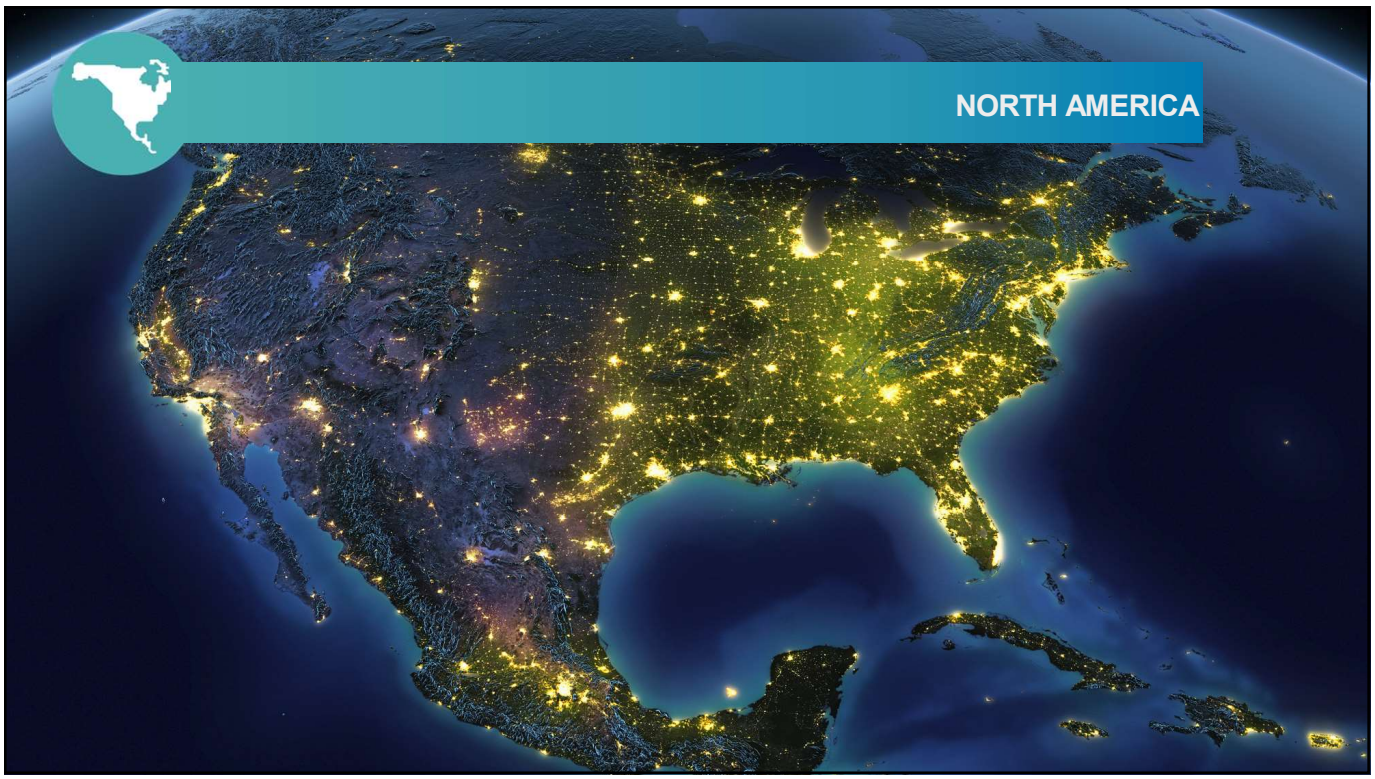
EU Water Framework Directive

- Sets out rules to halt deterioration in the status of EU water bodies and achieve good status for Europe's rivers, lakes and groundwaters
- Includes a list of priority substances that Member States must monitor in surface waters against Environmental Quality Standards
- Has direct impact on facility environmental permit conditions
- Most hazardous substances defined as "priority hazardous substances" with a requirement that ALL emissions are ceased within 20 years
- Currently only metals identified as a PHS are Cd and Hg, but EU Commission have now proposed that Pb be added to this list
- Will add further pressure for lead substitution as facilities will be under increasing pressure to eliminate all emissions to water
- File is still being discussed by Parliament and Council



Many major regulations impacting lead industry under review

- Like Europe, the USA is also heading into a phase of legislative reform/update that has implications for sites producing lead and manufacturing lead batteries
- Major regional difference is lack of any substantive market substitution legislation on the horizon in the US

Environmental

- National Ambient Air Quality Standard (NAAQS)
- National Emissions Standards for Hazardous Air Pollutants (NESHAP)
- New Source Performance Standards (NSPS)
- Toxic Substances Control Act (TSCA)
- Superfund Soil Cleanup Screening Levels

OSHA

- Federal workplace lead regulations
- State OSHA implementations (California, Washington, Oregon)

THANK YOU

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