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PROPOSING RESTRICTIONS ON

CERTAIN CHROMIUM(VI) OXIDES, OXYACIDS AND SALTS

CONSULTATION ON SEAC DRAFT OPINION

CETS - European Committee for Surface Treatment

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SUMMARY

Proposed Limits

Use Category	RO1	RO2	RO3
UC 1 | Formulation of mixtures	LV: 5 µg Cr(VI)/m3	LV: 1 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y
UC 2 | Electroplating on plastic substrate	LV: 1 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3	LV: 0.1 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y
UC 3 | Electroplating on metal substrate	LV: 5 µg Cr(VI)/m3	LV: 1 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y
UC 4 | Slurry coating operations	LV: 5 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3	LV: 0.1 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y
UC 5 | Other surface treatments	LV: 5 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3	LV: 0.1 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y
UC 6 | Functional additives/process aids	LV: 1 µg Cr(VI)/m3	LV: 0.5 µg Cr(VI)/m3	LV: 0.1 µg Cr(VI)/m3
	ELVair: 2.5 kg Cr(VI)/y	ELVair: 0.25 kg Cr(VI)/y	ELVair: 0.025 kg Cr(VI)/y
	ELVwater: 15 kg Cr(VI)/y	ELVwater: 1.5 kg Cr(VI)/y	ELVwater: 0.15 kg Cr(VI)/y

The alternative options (AO) are defined as follows:

- AO1: A harmonised LV at 1 µg Cr(VI)/m³ for all UCs with ELVs of 2.5 kg Cr(VI)/y for emissions to air and 15 kg Cr(VI)/y for emissions to water (i.e., similar to ELVs in RO1).
- AO2: A broad ban on use for all substances covered by this restriction proposal.
- AO3: A ban on functional uses of Cr(VI) substances with decorative character (all used in UC2).
- AO4: A broad ban on use with a transitional period of 10 years, without any mandatory transitional conditions (e.g. investment in additional RMMs). During opinion development, SEAC highlighted that it would have been useful to see a ban on use (maybe implemented through strict limit values) with **use-specific transition periods** as a restriction option and compared to the proposed restriction options. SEAC noted that it would be useful to be able to assess the logic of why the Dossier Submitter had discarded this as an option and focused on the proposed ROs instead. AO4 was prepared by the Dossier Submitter to address this request.
- AO5: Maximum release factors as an alternative way to demonstrate compliance instead of ELVs. This alternative option was added by the Dossier Submitter after the consultation on the Annex XV Dossier to address a concern raised by stakeholders. This is not an independent restriction option but a modification of the requirements of RO1/RO2. In this option, installations that cannot comply with the ELV for air emissions may alternatively demonstrate compliance with a MRF of 0.1 % (instead of 2.5 kg/Cr(VI)/year in RO1) or 0.01 % (instead of 0.25 kg/Cr(VI)/year in RO2).

QUESTION 1

Indicate which UC(s) from the list below your overall comment(s) relate to.

- UC2
- UC3
- UC5

The comments mainly concern surface-treatment activities, including electroplating on plastic substrates, electroplating on metal substrates, hard chromium plating, decorative-functional chromium plating, etching, stripping, pickling, passivation and other surface-treatment processes.

Some comments are also relevant to UC1, where formulation is directly linked to surface-treatment supply chains, and to UC4 where downstream qualified applications, repair, maintenance or safety-critical components are affected.

CETS stresses that the impacts cannot be assessed only at the level of the direct Cr(VI) user. In many cases, especially in UC2 and UC3, the relevant operator is a job plater or surface-treatment service provider working under customer/OEM specifications. Therefore, the relevant socio-economic impact extends up and down the value chain, including OEMs, Tier I and Tier II suppliers, repair chains, maintenance operators and end-use sectors.

QUESTION 2

To which sector(s) does your organisation belong to? (use ; to separate)

The organisation represents the European surface treatment sector and related downstream value chains. Relevant sectors include:

- Automotive & Transport Equipment;
- Aerospace;
- Aviation & Defence;
- Mechanical Engineering & Industrial Machinery;
- Hydraulics & Fluid Systems;
- Metal & Steel Industry;
- Construction & Civil Engineering;
- Mining & Earthmoving;
- Marine & Offshore;
- Energy & Power Generation;
- Oil, Gas & Petrochemical;
- Chemical Industry;
- Plastics, Rubber & Materials Processing;
- Paper, Printing & Converting;
- Textile & Ceramic Industries;
- Food & Beverage Industry;
- Pharmaceutical, Medical & Healthcare;
- Cosmetics, Perfumery & Personal Care;
- Household Appliances & Consumer Goods;
- Sanitary, Bathroom & Kitchen Equipment;
- Furniture, Wood & Interior Products;
- Precision Engineering & Tooling;
- Packaging Industry;
- Electronics & Electrical Equipment;
- Heating & Thermal Systems / Gas Appliances;

- Agriculture & Forestry;
- Architecture & Building Fittings;
- Workshop, Maintenance & Industrial Services;
- Cable Transport Systems;
- Other;

QUESTION 3

Please comment on the proposed transition period of 18 months in relation to the different options assessed by SEAC. For each of the options below, respond to the following: Is this transition period feasible for you with regard to limit value for workers (LV) and emission limit values (ELVs)? if not, please indicate which limit value is most problematic (i.e. LV and/or ELV) and specify a more realistic duration of the transition period. Please provide a clear justification and evidence to underpin your answers separately for RO2 (see table 4 in section 3.4.2 of the SEAC draft opinion)

An 18-month transition period is not feasible for RO2 across the European surface treatment sector.

RO2 may be the least unrealistic option among the restriction options assessed, but it cannot be considered implementable within 18 months. Compliance with RO2 is not a simple matter of purchasing equipment, changing an electrolyte, or adjusting operating procedures. For many installations, it may require a complete technical assessment of the plant, engineering design, supplier selection, procurement, installation, commissioning, occupational and environmental monitoring, possible permit variation, customer validation and, where relevant, OEM or sector-specific qualification.

CETS considers that the concept of a transition period must be understood correctly. Time is relevant only if there is a credible technical pathway to compliance or substitution. A transition period does not create an alternative where no technically feasible, customer-accepted and economically viable alternative exists. Where companies have not substituted so far, this is often not because they are unwilling to change, but because the alternative is not technically qualified, not accepted by customers, not available at industrial scale, not compatible with the required performance, or not economically feasible for the specific use.

Therefore, a fixed transition period should not be used as a substitute for evidence of feasibility. If no credible substitution pathway exists for a given application, extending the deadline only postpones closure, relocation or loss of EU industrial capacity. It does not produce genuine substitution or orderly risk reduction.

For RO2, the most critical element will depend on the installation. For open or semi-open electroplating lines, hard chromium plating, treatment of large or complex parts, manual loading and unloading, bath adjustment, maintenance, cleaning, filter changes and repair operations, the worker LV may be particularly difficult to achieve. These operations cannot always be automated or enclosed. Automation is only realistic where there is sufficient repetition, standardised geometry, high production volume and stable process conditions. It is not a general solution for job platers, repair operations, low-volume production, variable parts or operations requiring specialised manual skills.

The ELVs also raise significant concerns. Air and water emissions cannot be treated as if they were technically equivalent. Water emissions are often managed through process-integrated concentration reduction, rinsing stages, drag-out control and wastewater treatment. Air emissions depend on different parameters, including temperature, current density, bath chemistry, aerosol formation, mist generation, ventilation capture efficiency, tank geometry and operating mode. Processes operating at elevated temperature or high current density cannot be compared with processes operating close to room temperature or with lower aerosol generation.

CETS is particularly concerned that an absolute kg/year ELV may penalise efficient high-throughput installations. A site with advanced abatement and a low release factor may still face difficulties complying with a fixed annual mass threshold because of its production volume. Conversely, a low-throughput site may comply with an absolute mass threshold without necessarily applying the same level of emission-control efficiency. For this reason, RO2 should include a technically meaningful alternative compliance route, such as a maximum release factor, where appropriate.

A further point is that many companies have already implemented substantial risk management measures under REACH authorisation, occupational safety legislation, environmental permits and customer requirements. The remaining improvement potential is therefore not uniform. It is site-specific, process-specific and strongly dependent on plant layout. Some installations may be able to improve existing RMMs within a reasonable timeframe. Others would require structural modifications, new ventilation systems, scrubber upgrades, wastewater treatment changes, building works, changes to crane handling,

redesign of tanks, automation, or new monitoring strategies. In some cases, there may be no technically viable upgrade capable of achieving the required value.

The 18-month period also ignores value-chain realities. Many surface treatment companies, especially job platers, operate as service providers. They receive parts, drawings, performance specifications and qualification requirements from customers, OEMs, Tier I or Tier II suppliers. They cannot independently decide to change process technology if the downstream specification still requires Cr(VI)-based performance or if the alternative has not been approved by the customer. Transition therefore includes not only plant modifications, but also customer approval, testing, validation and requalification. These steps are often outside the control of the job plater.

This is particularly important because the wider value-chain impact is not captured by looking only at the surface treatment company. The treated component may be part of machinery, transport equipment, aerospace systems, defence applications, hydraulic systems, energy equipment, repair chains or spare-parts supply. If the job plater cannot comply within the deadline, the impact is not limited to the plater's turnover. It may affect the availability of components, maintenance operations, downstream production, technological sovereignty and security of supply.

CETS therefore considers that an 18-month transition period for RO2 is not realistic. A minimum transition period of 60 months is necessary for RO2, and longer periods may be required where significant engineering modifications, environmental permitting, analytical method development, supplier bottlenecks, installation redesign or customer qualification are involved.

A realistic transition framework should include:

- an initial phase for mapping affected processes, substances, emissions, worker exposure and customer requirements;
- a technical feasibility phase to identify whether compliance can be achieved through RMM upgrades, process changes, monitoring changes or alternative compliance routes;
- an engineering and permitting phase for ventilation, enclosure, wastewater treatment, air abatement or layout changes;
- a procurement and installation phase, recognising limited availability of equipment suppliers, laboratories and technical service providers;
- a commissioning and verification phase, including occupational and environmental monitoring;

- a customer/OEM qualification phase where the treated article or process is subject to technical approval;
- a final review mechanism for uses where no technically feasible route to compliance or substitution has been demonstrated.

CETS also considers that any transition period must be linked to harmonised EU rules on measurement, RPE, APF values, sampling duration, LoQ, environmental release calculation and compliance demonstration. Without such rules, companies cannot know what they must design for, and Member States may apply the restriction differently.

For these reasons, CETS considers that 18 months is not feasible for RO2. At least 60 months should be provided, with staged implementation and a formal feasibility review for applications where compliance cannot be achieved through technically and economically feasible measures. A transition period without a credible compliance or substitution pathway is not a risk-management tool; it is merely a delayed prohibition.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 4

Please comment on the proposed transition period of 18 months in relation to the different options assessed by SEAC. For each of the options below, respond to the following: Is this transition period feasible for you with regard to limit value for workers (LV) and emission limit values (ELVs)? if not, please indicate which limit value is most problematic (i.e. LV and/or ELV) and specify a more realistic duration of the transition period. Please provide a clear justification and evidence to underpin your answers separately for RO3 (see table 4 in section 3.4.2 of the SEAC draft opinion)

An 18-month transition period is not feasible for RO3. More fundamentally, RO3 is not demonstrated to be technically or economically feasible for a significant part of the European surface treatment sector.

RO3 combines very stringent worker exposure limit values with very stringent environmental emission limit values. According to the Annex XV restriction report, RO3 would require substantial investments in RMMs by the majority of companies using Cr(VI) substances in the EU, and approximately 30% of companies indicated that they would cease operations involving Cr(VI) in response to this option. This is not a marginal implementation issue. It indicates that RO3 may operate in practice as a forced discontinuation scenario for a significant share of the sector.

CETS considers that the concept of a transition period must not be misunderstood. Time is relevant only if there is a credible technical pathway to compliance or substitution. A longer transition period does not create an alternative where no technically feasible, customer-accepted and economically viable alternative exists. If a company cannot substitute today because the alternative is not technically qualified, not accepted by customers, not available at industrial scale, not compatible with the required performance, or not economically viable for the specific application, a longer deadline merely postpones closure, relocation or loss of EU industrial capacity.

This is particularly important for UC2, UC3 and UC5, where many surface-treatment companies operate as job platers or specialised service providers within customer-controlled value chains. These companies do not normally control the design of the component, the performance specification, the OEM qualification requirements, or the acceptance of alternative technologies. They cannot independently decide to substitute a

Cr(VI)-based process if the downstream specification still requires it or if the alternative has not been qualified by the customer.

For RO3, compliance would in many cases require much more than optimisation of existing RMMs. It may require substantial redesign of ventilation systems, partial or full enclosure of tanks where technically possible, automation or semi-automation of operations, advanced air abatement, wastewater treatment upgrades, new monitoring strategies, additional sampling points, more frequent occupational and environmental monitoring, building modifications, changes to crane handling, changes to tank layout, and potentially new or modified environmental permits.

However, not all industrial realities can follow the same RMM upgrade pathway. A repetitive, high-volume, standardised line may have some potential for automation or enclosure. A job plater treating variable parts, low-volume orders, large components, repair parts, maintenance components or customer-specific geometries may not. Manual intervention is often not a residual inefficiency but an intrinsic feature of the process. It is required by the variability of the parts, the need for skilled handling, the geometry of the component or the nature of repair and maintenance work.

The worker LV under RO3 is therefore particularly problematic for manual, task-based and non-routine operations. Exposure may arise during loading and unloading, bath adjustment, maintenance, cleaning, filter changes, jigging, masking, stripping, treatment of large parts and other short-duration tasks. These activities cannot simply be made compliant through a theoretical automation assumption. Nor can compliance be reduced to a mathematical calculation if the rules on RPE, APF values, task-based exposure and 8-hour TWA measurement are not clearly harmonised at EU level.

The ELVs under RO3 are equally problematic. Air and water emissions must not be treated as technically equivalent. Water emissions are often managed through process-integrated dilution and reduction mechanisms, drag-out control, rinsing stages, wastewater treatment and discharge control. Air emissions depend on different parameters: bath temperature, current density, aerosol and mist generation, bath chemistry, ventilation capture efficiency, tank geometry, covers, process agitation and operating mode. Processes at elevated temperature or high current density cannot be compared with processes operating at or near ambient temperature. Therefore, a uniform ELV approach may impose disproportionate burdens on certain technologies and site configurations.

CETS also notes that SEAC itself recognises that RO3 raises specific practicality and monitorability concerns. SEAC states that, in the case of RO3, higher costs and lower availability of analytical methods and services capable of monitoring stricter limit values may challenge implementation and enforcement. SEAC also recognises that the availability of analytical methods and service providers for low limits appears limited and would require development time.

This is critical. A transition period cannot be considered feasible if the necessary analytical capacity, service providers, engineering suppliers and enforcement methodology are not already available. A company cannot design compliance for a limit value if the measurement method, sampling strategy, LoQ treatment, RPE treatment and enforcement interpretation are still uncertain.

The 18-month deadline is also incompatible with real industrial implementation. Technical transition in surface treatment normally requires several sequential steps: process mapping, exposure and emission characterisation, engineering feasibility assessment, supplier selection, procurement, installation, commissioning, monitoring, corrective actions, possible environmental permit variation, customer validation and qualification. These steps cannot be compressed into 18 months for complex as well as for simple installations, especially if many companies must act simultaneously and rely on the same limited pool of suppliers, laboratories and consultants.

SEAC itself notes that longer transition periods may be needed because production lines may require modification, equipment and service providers may be limited, approvals by authorities may be necessary, analytical methods and services may be limited for low limits, and supply chains need time to map substances. SEAC also notes that the Forum pointed out that 18 months does not consider possible licensing procedures, for example for IED installations.

For RO3, these constraints are more severe than for RO2. The lower the limits, the higher the number of companies that need to upgrade their emission management and exposure-control measures, and the greater the pressure on equipment suppliers, laboratories, occupational hygienists, environmental consultants and competent authorities. This means that RO3 cannot be implemented through a single uniform deadline.

CETS therefore considers that there is no basis for defining 18 months as feasible for RO3. Indeed, there is no basis for defining any fixed deadline for RO3 unless a credible compliance

or substitution pathway is first demonstrated for the relevant uses. A deadline without a technical route is not a transition period; it is a delayed prohibition.

If RO3 is nevertheless retained, implementation should be staged and conditional. A period greater than 120 months would be necessary as a minimum reference for complex installations, but even this should not be treated as sufficient in all cases. It should be combined with:

- a use-specific technical feasibility review;
- clear EU-wide rules on monitoring, RPE, APF values, LoQ and sampling duration;
- assessment of analytical capacity and laboratory availability;
- assessment of supplier capacity for RMM equipment and services;
- recognition of site-specific plant-layout constraints;
- differentiation between repetitive automated production and variable manual/job-plating operations;
- assessment of customer/OEM qualification timelines;
- a safeguard mechanism for uses where no feasible alternative or compliance route exists.

CETS therefore concludes that an 18-month transition period for RO3 is not feasible. RO3 should not be considered practical or proportionate unless and until technical feasibility, monitoring feasibility, supplier capacity and value-chain impacts have been demonstrated at use level. Without these safeguards, RO3 would likely result in closures, relocation, import dependency and loss of EU surface-treatment capability rather than effective and orderly risk reduction.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 5

Please comment on the proposed transition period of 18 months in relation to the different options assessed by SEAC. For each of the options below, respond to the following: Is this transition period feasible for you with regard to limit value for workers (LV) and emission limit values (ELVs)? if not, please indicate which limit value is most problematic (i.e. LV and/or ELV) and specify a more realistic duration of the transition period. Please provide a clear justification and evidence to underpin your answers separately for a LV for workers' exposure of ***1 µg/m³*** *that is the same for all UCs*

A harmonised worker LV of 1 µg Cr(VI)/m^3 may be more practical, more understandable and more enforceable than a system based on several use-category-specific limit values. CETS recognises that SEAC considers harmonised LVs easier to enforce and communicate, and that SEAC considers a harmonised LV of 1 µg/m^3 as a potentially proportionate option.

However, an 18-month transition period is still not generally feasible for the European surface treatment sector.

The fact that 1 µg/m^3 may be a more realistic value than 0.5 µg/m^3 or 0.1 µg/m^3 does not mean that it can be implemented within 18 months across all installations, all technologies and all market structures. A transition period must not be treated as a purely administrative deadline. It must reflect the real technical sequence needed to assess, design, procure, install, validate, monitor and, where needed, obtain approval for the measures required to comply.

For a harmonised 1 µg/m^3 LV, the most problematic element is the worker exposure limit itself, particularly for open-tank processes and operations involving manual loading and unloading, jigging, masking, bath preparation, bath adjustment, treatment of large or complex parts, maintenance, cleaning, filter changes, stripping and other task-based or non-routine activities.

These activities are particularly relevant for job platers and specialised surface-treatment service providers. Many of these companies do not operate standardised, high-volume, repetitive production lines. They treat variable parts, different geometries, low-volume orders, repair components and customer-specific articles. In these conditions, automation, enclosure or full process redesign may not be technically possible or may require complete rebuilding of the plant layout.

The assumption that companies can simply "upgrade RMMs" within 18 months is therefore not realistic. Many companies have already implemented substantial RMMs under REACH authorisation, occupational safety legislation, environmental permits and customer requirements. The remaining improvement potential is site-specific and process-specific. It depends on tank geometry, ventilation design, current density, bath temperature, aerosol generation, crane handling, line layout, available space, building constraints, wastewater treatment capacity and the nature of the treated parts.

A harmonised 1 µg/m^3 LV also requires harmonised EU rules on compliance demonstration. The assessment cannot remain unclear on how RPE is treated, which APF values apply, how task-based exposure is converted into an 8-hour TWA, how measurements below LoQ are handled, how sampling duration is defined, and how Member States should enforce compliance consistently. The available exposure datasets themselves required several assumptions, including conversions from total chromium to Cr(VI), assumptions where RPE was not reported, assumptions on missing task duration/frequency and different levels of information across datasets. This confirms that measurement and compliance rules must be clarified before the transition period starts.

The sequence of required activities is particularly demanding for job platers, because they cannot unilaterally modify qualified processes and plant layout without a granted permission (both from authorities and, sometimes, from customer, too).
If compliance requires process changes that may affect coating properties or performance, approval by the customer may be necessary. This step is outside the direct control of the surface-treatment company and cannot be compressed into an 18-month regulatory deadline.

CETS therefore considers that the transition period for a harmonised 1 µg/m^3 LV should be at least 60 months for the surface-treatment sector. In limited cases, where compliance can be demonstrated through optimisation of existing RMMs and harmonised monitoring without plant redesign, a shorter period may be feasible. However, where new engineering controls, ventilation redesign, tank modification, enclosure, automation, wastewater or air-abatement changes, permit variation or customer validation are required, 60 months is the minimum realistic period.

This is also consistent with the concerns identified by SEAC and the Forum. SEAC notes that longer transition periods may be needed because production lines may require modification, equipment and service providers may be limited, approvals by authorities may be necessary, analytical methods and service providers may be limited for lower limits, and supply chains

need time to map substances. SEAC also notes that the Forum considered that 18 months does not account for possible licensing procedures, for example for IED installations.

CETS further stresses that the transition period must not be used to hide unresolved value-chain impacts. A job plater's ability to comply is not only a matter of its own investment capacity. It depends on downstream customer acceptance and on the function of the treated component in the wider supply chain. The impact of non-compliance or discontinuation is therefore not limited to the surface-treatment company. It may affect downstream manufacturing, repair, maintenance, spare parts, hydraulic systems, machinery, transport, energy, aerospace, defence and other strategic sectors.

For these reasons, CETS considers that:

- a harmonised 1 µg/m^3 LV may be more manageable than lower harmonised values or complex UC-specific LVs;
- 18 months is not feasible for general implementation;
- at least 60 months should be provided for the surface-treatment sector;
- the transition period must start only once harmonised EU monitoring and RPE rules are available;
- process-specific and value-chain-specific constraints must be recognised;
- a review mechanism should be included for uses where compliance cannot be achieved through technically and economically feasible RMMs and where no credible alternative exists.

A harmonised 1 µg/m^3 LV can only be discussed as a possible long-term compliance target if it is accompanied by a realistic transition framework. Without that framework, the proposal risks creating legal uncertainty, inconsistent enforcement, forced discontinuation of critical services and loss of European surface-treatment capacity.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 6

Please comment on the proposed transition period of 18 months in relation to the different options assessed by SEAC. For each of the options below, respond to the following: Is this transition period feasible for you with regard to limit value for workers (LV) and emission limit values (ELVs)? if not, please indicate which limit value is most problematic (i.e. LV and/or ELV) and specify a more realistic duration of the transition period. Please provide a clear justification and evidence to underpin your answers separately for a LV for workers' exposure of ***0.5 µg/m³*** *that is the same for all UCs*

An 18-month transition period is not feasible for a harmonised worker LV of 0.5 µg Cr(VI)/m^3 across all UCs.

CETS recognises that a harmonised LV may be easier to understand, communicate and enforce than a system of different UC-specific values. However, harmonisation of the numerical value does not automatically make the value technically feasible, monitorable or proportionate. A harmonised LV of 0.5 µg/m^3 is significantly more demanding than 1 µg/m^3 and cannot be assumed to be achievable across the full European surface-treatment sector within 18 months.

The concept of a transition period must not be misunderstood. **Time is relevant only if there is a credible technical pathway to compliance or substitution.** A transition period does not create technical feasibility. If a company has not substituted so far because the alternative is not technically qualified, not customer-approved, not available at industrial scale, not compatible with the required performance, or not economically viable for the specific application, then a fixed deadline does not create substitution. It merely postpones closure, relocation or loss of EU surface-treatment capacity.

This is particularly relevant because SEAC itself states that it is not possible to conclude on the availability and technical and economic feasibility of alternatives at use, UC or general level due to scarcity of information. For more demanding applications, alternatives appear mostly at a relatively early stage, and information on exact product identities, performance levels, range of use and market share is missing.

For a harmonised LV of 0.5 µg/m^3, the most problematic element is the worker exposure limit itself, especially for open-tank processes, manual loading and unloading, jigging, masking, bath preparation, bath adjustment, maintenance, cleaning, filter changes, treatment of large

or complex parts, stripping and non-routine operations. These are not exceptional activities; they are part of normal surface-treatment operations, especially for job platers and specialised service providers.

Automation or enclosure cannot be treated as a general solution. It may be feasible in repetitive, high-volume and standardised production lines, but it is often not feasible for job platers handling variable parts, different geometries, low-volume orders, repair components, maintenance parts or customer-specific articles. Manual intervention is often intrinsic to the service provided, not a residual inefficiency that can simply be removed.

Many companies have already implemented substantial RMMs under REACH authorisation, occupational safety legislation, environmental permits and customer requirements. The remaining margin for improvement is therefore site-specific and sometimes limited. A further reduction from 1 µg/m^3 to 0.5 µg/m^3 may require a different level of intervention, including ventilation redesign, improved tank extraction, partial enclosure, mist suppression, layout changes, revised crane handling, modified maintenance practices, additional monitoring and, in some cases, significant reconstruction of the installation.

CETS also stresses that not all industrial realities can rely on the same RMM upgrade pathway. Some installations may be able to improve exposure control through ventilation and enclosure. Others may be constrained by tank size, line layout, crane movement, building structure, bath chemistry, current density, temperature, component geometry, manual handling needs or maintenance access. The assessment should therefore not assume that all companies can reach 0.5 µg/m^3 by applying the same generic set of RMMs.

A harmonised LV of 0.5 µg/m^3 also raises serious monitorability concerns. Compliance at this level requires sufficiently sensitive and reliable measurement methods, accredited laboratory capacity, harmonised sampling strategies and clear treatment of values close to the limit of quantification. SEAC notes that the availability of analytical methods and service providers appears limited for low limit values below 1 µg/m^3 in air and that development time would be needed for the respective restriction options.

This is a critical point. A company cannot design compliance around a value if the measurement method, sampling duration, LoQ treatment, RPE treatment and enforcement interpretation are not harmonised before the transition period begins. It would be unreasonable to require companies to demonstrate compliance through monitoring

strategies that are not yet universally available, uniformly applied or technically meaningful for task-based operations.

The role of RPE must also be clarified. If compliance is assessed without considering RPE, then the expected compliance rates and costs must reflect that. If RPE is considered, then the restriction must define how assigned protection factors, fit testing, real use conditions, maintenance, task duration and actual wearing time are verified and enforced across Member States. SEAC material itself identifies the need to clarify the effect of PPE on achieving compliance and the need for harmonised enforcement and measurement rules.

The interaction with PFAS restrictions is also relevant. Mist suppressants may be one of the practical tools used to reduce chromium aerosol formation in certain electroplating operations. If future PFAS restrictions affect the availability or acceptability of some mist suppressants, this may directly affect the technical feasibility of reducing Cr(VI) exposure. The Cr(VI) restriction should therefore not assume stable availability of all RMM tools without considering other ongoing EU regulatory processes.

The 18-month period is not compatible with the industrial sequence required for implementation. A realistic transition towards 0.5 µg/m^3 would require:

- mapping of relevant tasks and exposure scenarios;
- verification of current exposure levels using harmonised methods;
- technical assessment of whether existing RMMs can be improved;
- engineering design for ventilation, enclosure or layout modification;
- supplier selection and procurement;
- installation and commissioning;
- possible environmental or construction permit variation;
- occupational monitoring after modification;
- corrective actions where first results are insufficient;
- customer/OEM validation where process changes may affect the treated article.

This sequence cannot be compressed into 18 months across the EU, particularly if many installations need to rely on the same limited pool of engineering suppliers, analytical laboratories, occupational hygienists and competent authorities. SEAC itself recognises that longer transition periods may be needed because production lines may require modification, equipment and service providers may be limited, approvals by authorities may be necessary, analytical methods and service providers may be limited for low limits, and supply chains need time to map substances. The Forum also pointed out that 18 months does not consider possible licensing procedures, such as for IED installations.

CETS therefore considers that a harmonised 0.5 µg/m^3 LV should not be implemented within 18 months. If this value is retained as a policy objective, it should be introduced only through a staged approach:

First, establish a harmonised EU framework around 1 µg/m^3, including clear measurement rules, RPE treatment, APF values, sampling strategy, LoQ treatment and environmental monitoring principles. Then collect real-world monitoring data and assess whether 0.5 µg/m^3 is technically and economically feasible for specific uses and technologies. Only after such a review should a lower value be considered.

A transition period for 0.5 µg/m^3 should therefore be **at least 96 months**, and longer where structural engineering works, permitting, supplier bottlenecks, customer validation or qualified process changes are required. For some applications, no fixed deadline should be set until a credible compliance or substitution pathway has been demonstrated.

Finally, CETS stresses that the impact of such a value cannot be assessed only at the level of the direct surface-treatment company. Many affected operators are job platers working in customer-controlled value chains. If a job plater cannot comply, the impact may fall on downstream OEMs, Tier I and Tier II suppliers, maintenance operators, repair chains, spare-parts availability, machinery, transport, aerospace, defence, energy and other strategic sectors. These up- and downstream impacts must be part of any feasibility assessment before a transition period is defined.

For these reasons, CETS considers that 18 months is not feasible for a harmonised 0.5 µg/m^3 LV. A staged implementation, beginning with a realistic and monitorable 1 µg/m^3 framework and followed by a technical feasibility review for 0.5 µg/m^3, is the only credible approach.

Without such safeguards, the proposed transition period risks becoming a delayed prohibition for companies and value chains for which no feasible technical route exists.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 7

Please comment on the proposed transition period of 18 months in relation to the different options assessed by SEAC. For each of the options below, respond to the following: Is this transition period feasible for you with regard to limit value for workers (LV) and emission limit values (ELVs)? if not, please indicate which limit value is most problematic (i.e. LV and/or ELV) and specify a more realistic duration of the transition period. Please provide a clear justification and evidence to underpin your answers separately for a LV for workers' exposure of ***0.1 µg/m³*** *that is the same for all UCs*

An 18-month transition period is not feasible for a harmonised worker LV of **0.1 µg Cr(VI)/m³** across all UCs. More fundamentally, CETS considers that a harmonised value of **0.1 µg/m³** is not demonstrated to be technically feasible, monitorable or enforceable for the European surface-treatment sector under current industrial and analytical conditions.

CETS recognises the objective of reducing worker exposure to Cr(VI) and does not dispute the carcinogenic properties of Cr(VI). However, the setting of a numerical limit value must be based on a realistic assessment of technical feasibility, measurement capability, enforceability and value-chain consequences. A value of **0.1 µg/m³** cannot be treated as a simple extension of the same logic applied to 1 µg/m³ or 0.5 µg/m³. It represents a different level of regulatory and technical challenge.

The concept of a transition period must not be misunderstood. **Time is relevant only if there is a credible technical pathway to compliance or substitution.** A transition period does not create technical feasibility. If a company has not substituted because no alternative is technically qualified, customer-approved, available at industrial scale, compatible with performance requirements, or economically viable, a fixed deadline does not generate substitution. It merely postpones closure, relocation or loss of EU surface-treatment capacity.

This is particularly important because SEAC itself recognises that it is not possible to conclude on the availability and technical and economic feasibility of alternatives at use, use-category or general level. For more demanding applications, alternatives appear to be at an early stage and information on performance, market coverage and range of applicability is missing.

For a harmonised LV of **0.1 µg/m^3**, the most problematic element is worker exposure during real industrial operations. This includes open or semi-open tanks, manual loading and unloading, jigging, masking, bath adjustment, treatment of large or complex parts, repair, maintenance, cleaning, filter changes, stripping and other non-routine tasks. These operations cannot be assumed to be automated, enclosed or redesigned in the same way across all installations.

Automation is not a universal solution. It may be feasible for repetitive, high-volume and standardised production, but it is often not feasible for job platers, repair operations, low-volume production, variable geometries, large components or processes requiring skilled manual intervention. In many cases, manual intervention is not a failure of risk management but an intrinsic feature of the industrial service provided.

Many companies have already implemented substantial RMMs over the years under REACH authorisation, occupational safety legislation, environmental permits and customer requirements. The remaining potential for further reduction is therefore site-specific and sometimes limited. It depends on plant layout, tank design, current density, bath temperature, aerosol formation, ventilation capture efficiency, crane handling, available space, building constraints, maintenance access and the nature of the treated parts.

At **0.1 µg/m^3**, monitorability becomes a central obstacle. Compliance requires analytical methods and laboratories capable of reliably measuring extremely low Cr(VI) concentrations in workplace air, and when is not matter of lab capacity and skills, it is aout measuring in real world condition, not in a lab scale environment. SEAC itself notes that the availability of analytical methods and service providers appears limited for low limit values below 1 µg/m^3 and that development time would be required.

This is not a minor implementation issue. A value that cannot be reliably measured through harmonised, representative and proportionate methods cannot be considered monitorable. It would be unreasonable to require sampling strategies that need artificially long measurement periods, potentially beyond meaningful task duration or normal shift patterns, simply to obtain quantifiable results. A monitoring system must measure real occupational exposure, not create analytical artefacts.

The role of RPE must also be clarified before any transition period can be assessed. If compliance is assessed without considering RPE, many installations may be unable to demonstrate compliance even where workers are effectively protected during specific tasks.

If RPE is considered, the restriction must define harmonised EU rules on APF values, fit testing, maintenance, real wearing time, task duration and documentation. SEAC material itself recognises the need to clarify the effect of PPE/RPE on compliance and the need for harmonised enforcement and measurement rules.

The proposed 18-month period is also incompatible with the actual sequence of industrial implementation. For such a low value, companies would need to carry out task mapping, exposure characterisation, engineering feasibility studies, supplier selection, procurement, installation, commissioning, repeated monitoring, corrective actions and possibly permit changes. Where process modifications affect the treated article, customer or OEM validation may also be required.

This is especially relevant for job platers. These companies often operate as service providers within customer-controlled value chains. They receive parts, drawings, specifications and qualification requirements from OEMs, Tier I or Tier II suppliers. They cannot independently change process technology if the downstream specification requires Cr(VI)-based performance or if an alternative has not been qualified by the customer.

The impact of non-compliance would therefore not stop at the surface-treatment company. It would affect downstream manufacturing, repair, maintenance, spare parts, hydraulic systems, machinery, transport, aerospace, defence, energy and other strategic sectors. The value-chain impact must be assessed before any fixed transition deadline is imposed.

For these reasons, CETS considers that a harmonised **0.1 µg/m^3** LV should not be introduced as a general requirement across all UCs. If this value is retained as a policy objective, it should only be considered after:

- implementation and evaluation of a realistic 1 µg/m^3 framework;
- collection of harmonised EU monitoring data;
- demonstration of analytical capability and laboratory capacity;
- clear rules on RPE/APF and task-based exposure;
- use-specific assessment of technical feasibility;
- assessment of value-chain impacts and customer qualification constraints;

- a formal review mechanism for uses with no feasible compliance or substitution pathway.

CETS therefore considers that **18 months is not feasible** for a harmonised worker LV of **0.1 µg/m^3**. In many surface-treatment applications, no fixed transition period can be defined until a credible technical route to compliance or substitution is demonstrated. Without such a route, the proposed transition period would function as a delayed prohibition, leading to closure, relocation, import dependency and loss of European surface-treatment capability rather than effective and orderly risk reduction.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 8

To comply with the restriction, some companies may need to improve their risk management measures (RMMs). The proportion of companies expected to do so may be different depending on the limit value. What transition periods would be required in each restriction option so that the suppliers of improved RMM equipment and services are able to handle the increase in demand? Please provide a clear justification and evidence to underpin your answers.

CETS considers that the transition period must reflect not only the time needed by individual companies to implement measures, but also the capacity of the European supply chain for RMM equipment, engineering services, analytical laboratories, occupational hygiene consultants, wastewater treatment providers, air-abatement suppliers and competent authorities.

There is no single risk management measure that can generally reduce worker exposure or environmental emissions for all surface-treatment installations. Surface-treatment plants differ significantly in terms of process type, bath chemistry, current density, bath temperature, tank geometry, ventilation design, building constraints, crane movement, wastewater treatment configuration, treated part size, degree of automation, manual intervention and production volume. Therefore, it is not technically correct to assume that all companies can apply the same RMM package within the same timeframe. Such an information is clearly available from the BAT of the surface treatment sector, that is trying to describe and currently collecting the wide variety of application and technologies available.

Reducing exposure is not an exact science or a purely mathematical calculation. In practice, it often requires an iterative process. A company must first identify the relevant exposure sources, assess the specific tasks or emission points, design a technical solution, implement it, measure the result, identify residual sources, correct the system and then repeat monitoring. The first technical intervention does not always deliver the expected reduction. Airflow changes may create turbulence, tank covers may interfere with handling, enclosure may complicate maintenance, mist suppression may affect bath behaviour, and improved abatement may shift the burden to wastewater, sludge, filters or hazardous waste.

For this reason, the transition period cannot be limited to procurement and installation time. It must include time for diagnosis, engineering, testing, commissioning, measurement, troubleshooting and optimisation. This is particularly important where companies are

required to demonstrate compliance with very low occupational exposure values or strict air and water ELVs.

The relationship between RMMs and compliance is also not linear. A 50% reduction in a limit value does not necessarily require a 50% improvement in ventilation or abatement. It may require a different technological approach altogether. For example, moving from 1 µg/m^3 to 0.5 µg/m^3, or from 0.5 µg/m^3 to 0.1 µg/m^3, may require different engineering solutions, different monitoring strategies, different analytical capability and different operating procedures. In some installations, further reduction may not be technically achievable through available RMMs.

CETS also stresses that improvements in one environmental or occupational parameter may create new burdens elsewhere. Increased air-abatement efficiency may increase liquid waste, contaminated sludge, filter replacement, maintenance operations, wastewater load and hazardous waste disposal, when not considering power consumption. Enclosure may reduce mist release but may complicate access, cleaning, maintenance, crane handling, jigging or treatment of large parts. Automation may reduce some manual exposure but may be unsuitable for job plating, repair, maintenance, low-volume production, variable part geometry or customer-specific operations.

This means that the RMM transition must be assessed plant by plant and use by use. Not all industrial realities can use the same type of plant upgrade. A high-volume automated line, a manual job-plating line, a repair workshop, a large-part hard chrome installation and a customer-qualified aerospace or defence process do not have the same technical options. A uniform transition period ignores this diversity.

CETS also considers that supplier capacity is a major constraint. If many installations across Europe must upgrade at the same time, bottlenecks can be expected for:

- ventilation and local exhaust engineering;
- tank extraction and enclosure systems;
- scrubbers and air-abatement equipment;
- wastewater treatment systems;
- mist suppression systems;

- automation and handling systems;
- occupational hygiene monitoring;
- environmental monitoring;
- analytical laboratories;
- waste disposal capacity;
- consultants and engineering companies;
- competent authorities processing permit variations.

These bottlenecks would be more severe for stricter options because lower LVs and ELVs increase the number of companies requiring substantial intervention. SEAC itself recognises that the lower the limits, the higher the number of companies needing to upgrade their emission management measures and the longer the time needed to provide all companies with the necessary equipment and services.

Permitting must also be considered. Significant changes to ventilation, air abatement, wastewater treatment, building layout or process configuration may require authority approval. SEAC notes that the Forum pointed out that the 18-month transition period does not consider possible licensing procedures, for example for IED installations. This alone makes an 18-month transition unrealistic for many sites.

CETS also stresses the value-chain dimension. Many surface-treatment companies are job platers or specialised service providers. They cannot independently redesign or change processes if the treated article is subject to customer, OEM, Tier I or Tier II specifications. If RMM changes affect coating quality, surface finish, dimensional tolerance, hydrogen embrittlement risk, corrosion resistance, adhesion, hardness or wear resistance, customer validation or requalification may be necessary. This is outside the direct control of the surface-treatment company and must be included in the transition period.

For these reasons, CETS considers that transition periods should be differentiated as follows:

For **RO1**, where upgrades may often be limited to targeted improvements of existing RMMs, a transition period of **at least 36 months** should be considered, with up to **60 months** where permitting, plant redesign, monitoring uncertainty or customer validation is required.

For **RO2**, a transition period of **at least 60 months** is necessary. RO2 may require significant RMM upgrades, additional monitoring, wastewater or air-abatement improvements and, in some cases, layout changes or customer approval.

For **RO3**, no general fixed transition period can be considered reliable unless technical feasibility is first demonstrated. If RO3 is retained, a period of **more than 120 months** would be required for complex installations, together with a staged feasibility review and a safeguard mechanism for uses where compliance cannot be technically achieved.

For a harmonised **1 µg/m^3** worker LV, at least **60 months** should be provided, because companies need time to assess, design, implement, measure and optimise RMMs under harmonised EU rules.

For a harmonised **0.5 µg/m^3** worker LV, a staged approach is required. The EU should first implement and evaluate a realistic 1 µg/m^3 framework. Only after sufficient monitoring data and technical evidence are available should 0.5 µg/m^3 be considered.

For a harmonised **0.1 µg/m^3** worker LV, CETS does not consider it possible to define a credible transition period at this stage. The issue is not only supplier capacity, but technical feasibility, analytical capability, monitorability and enforceability. Without a demonstrated technical route, any deadline would function as a delayed prohibition.

CETS therefore considers that the transition period must not be based on a theoretical assumption that RMM suppliers can simply scale up. It must reflect the reality that exposure reduction is an empirical and iterative process, that supplier and laboratory capacity are limited, that permitting and customer qualification require time, and that not all installations can be upgraded by applying the same technology.

A realistic transition framework should include:

- preliminary exposure and emission mapping;
- identification of site-specific RMM options;
- engineering feasibility studies;
- supplier capacity assessment;
- procurement and installation;
- commissioning and operational testing;
- monitoring under harmonised methods;
- corrective actions after first results;

- permit variation where needed;
- customer/OEM validation where the treated article may be affected;
- a formal review mechanism for cases where no technically feasible RMM route exists.

CETS concludes that 18 months is not sufficient for the RMM supply chain to support effective implementation. A staggered and differentiated transition is necessary. Without such a framework, the restriction risks creating bottlenecks, rushed installations, inconsistent monitoring, unnecessary costs, closure of specialised service providers and disruption of downstream value chains, rather than achieving effective and sustainable risk reduction.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 9

Maximum release factors (MRFs) for emissions to air as an alternative way to demonstrate compliance, instead of ELVs:

In this option analysed by the Dossier Submitter (AO5), installations that cannot comply with the ELV for air emissions may alternatively demonstrate compliance with a MRF of 0.1 % (instead of 2.5 kg/Cr(VI)/year in RO1) or 0.01 % (instead of 0.25 kg/Cr(VI)/year in RO2).

If you expect to close or relocate because you will not be able to comply with the ELVs, would it be possible for you to instead comply with a maximum release factor (MRF) of

- *0.01% or*
- *0.1%?*

Would the possibility of complying with an MRF change your plans for closure or relocation? Please describe the impact of AO5 in terms of compliance costs.

CETS considers that a maximum release factor should be retained and further developed as a complementary compliance route for air emissions. It is not a substitute for risk management, and it should not be designed as an uncontrolled exemption. However, it is technically more meaningful than an absolute kg/year ELV in several industrial situations, especially for high-throughput installations that already operate efficient abatement systems.

The key problem with an absolute ELV is that it does not distinguish between a poorly controlled low-throughput installation and a well-controlled high-throughput installation. A site using small quantities of Cr(VI) may comply with an absolute kg/year threshold even with relatively limited abatement efficiency. Conversely, a large installation with advanced scrubbers, local exhaust ventilation and efficient emission-control systems may still exceed a fixed annual mass threshold simply because of its production volume.

This is recognised in the Background Document, which states that the risk-based ELV approach does not consider company characteristics such as annual Cr(VI) use, and that high-volume sites may not be able to comply with a given ELV even where they have relatively high abatement efficiency. The same section reports that approximately 80% of companies

responding to the CfE had release factors below 0.1%, while around 40% had release factors below 0.01%.

This confirms that the MRF concept is not artificial. It reflects process efficiency and the effectiveness of RMMs at installation level. The Appendix describes AO5 as a dual compliance mechanism, where installations unable to comply with a given air ELV could alternatively demonstrate compliance through an MRF, namely 0.1% for the 2.5 kg/year ELV and 0.01% for the 0.25 kg/year ELV.

CETS therefore considers that the possibility of complying with an MRF could materially change closure or relocation decisions for some sites. This is particularly true for high-throughput installations and for companies that already operate efficient air-abatement systems but cannot comply with an absolute mass threshold. For these companies, the problem is not lack of RMM efficiency; it is the structure of the limit.

However, the two MRF levels should not be treated as equally realistic.

A MRF of **0.1%** appears to be a more realistic and technically meaningful complementary route. It is consistent with efficient RMM operation and may allow sites with high production volumes to remain in the EU while still demonstrating strong emission-control performance.

A MRF of **0.01%** is significantly more demanding. It may be achievable for some installations, but it cannot be assumed to be generally achievable across the sector. The Background Document itself indicates that only around 40% of CfE respondents reported release factors below 0.01%. This means that 0.01% may still lead to closure, relocation or major investment requirements for a substantial part of the sector.

The Appendix confirms the importance of this distinction.

This is important for the cost assessment. The Background Document states that the main cost assessment assumes that ELVs would not increase non-use rates, but also recognises that this assumption may not hold for high-volume sites. If absolute ELVs lead to closure or relocation of efficient high-throughput installations, then the cost assessment is incomplete.

CETS therefore considers that AO5 is not merely a technical variant. It is a necessary correction to a structural weakness in the ELV design. An absolute ELV can unintentionally penalise efficient industrial operators because it focuses on annual mass rather than

abatement efficiency. The MRF addresses this problem by asking whether the installation controls emissions efficiently relative to its use of Cr(VI).

CETS also stresses that determining a release factor should not be treated as a purely mathematical exercise. In practice, the calculation depends on reliable input data, representative emission measurements, sampling frequency, analytical methods, operating conditions and treatment of variable production. A harmonised EU methodology is therefore necessary. Without such methodology, the MRF could be interpreted differently across Member States.

In terms of compliance costs, AO5 would likely reduce disproportionate investment aimed solely at meeting an absolute mass threshold. It could avoid situations where a company with efficient abatement must install very expensive additional systems (when existing) for marginal environmental benefit, or close despite already operating with a low release factor. It would also reduce non-use costs and downstream disruption.

However, AO5 would still involve costs. Companies would need to establish a robust mass-balance and monitoring system, verify annual Cr(VI) input, measure emissions, document RMM performance, maintain abatement systems and possibly perform more frequent monitoring. These costs are acceptable if they replace disproportionate closure or relocation driven by an absolute ELV.

The value-chain dimension is central. Many surface-treatment operators are job platers or specialised service providers. If an efficient high-throughput site closes because it cannot meet an absolute kg/year ELV, the impact is not limited to that site. It may affect OEMs, Tier I and Tier II suppliers, hydraulic systems, machinery, aerospace, defence, transport, energy, maintenance, repair and spare-parts supply. The MRF route may therefore preserve critical EU industrial capacity while maintaining a high level of emission-control performance.

CETS therefore considers that:

- the MRF concept should be retained as an alternative compliance route for air emissions;
- 0.1% is a more realistic and technically meaningful MRF for many installations;
- 0.01% may be achievable only for some installations and should not be assumed generally feasible;
- absolute ELVs should not be the only compliance route for high-throughput sites with efficient RMMs;

- MRF compliance should be combined with harmonised monitoring, documentation, BAT-consistent RMMs and corrective action;
- site-specific risk considerations should be addressed through conditions rather than by rejecting MRFs entirely;
- AO5 should be assessed not only in terms of direct abatement costs, but also in terms of avoided non-use costs and avoided value-chain disruption.

CETS concludes that the possibility of complying through an MRF could prevent closure or relocation for some installations, especially high-throughput sites already operating efficient emission-control systems. Without such an alternative route, the restriction risks penalising efficient EU production and creating avoidable downstream supply-chain disruption without a proportionate risk-management benefit.

QUESTION 10

RAC proposal: RAC proposes emission limit values of 0.15 kg Cr(VI)/year for water emissions and 0.25 kg Cr(VI)/year for air emissions; and a limit value for workers' exposure of 0.1 µg/m³ that shall not be exceeded on any day of the year, and that must be implemented following the hierarchy of control measures (workers can be protected by respiratory protective equipment as a temporary measure, only if other options (i.e. engineering and administrative RMMs) have been fully exhausted and are still not sufficient).

What would be the impact of this restriction option on your company/sector? Please provide information on the type of technical changes that would be required to comply with such an option for your company/sector and the associated costs.

The RAC proposal would have a severe and potentially disruptive impact on the European surface-treatment sector. The combination of a worker exposure limit value of **0.1 µg Cr(VI)/m³**, which shall not be exceeded on any day of the year, with ELVs of **0.25 kg Cr(VI)/year for air** and **0.15 kg Cr(VI)/year for water**, and with only temporary recognition of respiratory protective equipment, would not be a normal compliance scenario for many installations. It would operate, in practice, as a forced discontinuation scenario for several activities.

CETS fully recognises the objective of protecting workers from Cr(VI) exposure and does not contest the carcinogenic properties of Cr(VI). However, a restriction option must be technically feasible, monitorable, enforceable and proportionate in real industrial conditions. The RAC proposal does not meet these requirements for a significant part of the surface-treatment sector.

The proposal is particularly critical because it combines three severe constraints at the same time: a very low worker LV, a "not exceeded on any day" requirement, and very strict annual mass-based environmental ELVs. The consultation note itself describes RAC's proposal as requiring a 0.1 µg/m³ worker LV, not exceeded on any day of the year, implemented through the hierarchy of controls, with RPE only as a temporary measure after engineering and administrative controls have been exhausted.

CETS considers that this approach is not realistic for many surface-treatment operations. In practice, worker exposure in electroplating and surface treatment is not constant. It varies by task, bath, current density, bath temperature, aerosol formation, loading/unloading

operations, jigging, masking, cleaning, filter changes, maintenance, repair work and treatment of large or complex parts. A “not exceeded on any day” requirement cannot be demonstrated by occasional or periodic monitoring unless the restriction defines a harmonised and technically meaningful monitoring strategy.

At **0.1 µg/m^3**, monitorability becomes a central issue. SEAC itself notes that implementation of RO3 may raise practical issues for enforcement and monitoring because the LV of 0.1 µg/m^3 is close to the detection limit of common analytical methods, and that further development of suitable methods may be necessary to enable enforcement. SEAC also indicates that RAC’s proposal would create similar practical challenges to RO3 and that, with a short transition period, a harmonised LV of 0.1 µg/m^3 may be difficult for a significant share of companies and may make closures more likely.

The analytical issue is not theoretical. The Appendix indicates that, for the lowest concentration of 0.1 µg/m^3, it may be necessary to increase sample volumes by increasing sampling time and/or flow rate in order to reach 10% of the proposed value. This confirms that compliance demonstration at this level may require specific sampling conditions that are not necessarily compatible with all real tasks and operations.

CETS is also concerned by the treatment of RPE. The hierarchy of controls is correct as a general occupational-safety principle. However, in surface treatment there are task-based and non-routine operations where engineering controls cannot eliminate all exposure in a technically feasible way. If RPE is only accepted as a temporary measure, the proposal may make certain necessary operations legally impossible even where workers are effectively protected. If RPE is to be considered for compliance, the restriction must define clear EU-wide rules on APF values, fit testing, maintenance, task duration, wearing time, documentation and enforcement. SEAC itself identifies uncertainty on how respiratory protective equipment should be accounted for as a possible compliance tool.

The technical changes potentially required by the RAC proposal would be extensive. Depending on the site, they may include redesign of local exhaust ventilation, improved tank extraction, partial or full enclosure of tanks where technically possible, tank covers, mist suppression, automation or semi-automation of loading/unloading, modified crane handling, revised jigging and masking operations, upgraded scrubbers, additional air-abatement stages, wastewater treatment upgrades, additional monitoring points, increased

occupational and environmental monitoring, revised maintenance procedures, and changes to building layout or plant configuration.

However, these measures cannot be assumed to be available or effective in the same way for all installations. A high-volume automated line, a manual job-plating line, a repair workshop, a large-part hard chrome facility and a customer-qualified aerospace or defence process do not have the same technical options. Automation may be realistic for repetitive, standardised production, but it is often not realistic for job platers handling variable parts, low-volume orders, complex geometries, maintenance components or repair work.

Reducing exposure to 0.1 µg/m^3 is not a precise mathematical exercise. It would often require an iterative technical process: identify the source, design an intervention, install it, measure the result, identify residual exposure, correct the system and measure again. The first intervention may not deliver the expected reduction. Improved extraction may create turbulence; enclosure may obstruct handling or maintenance; mist suppression may affect bath behaviour; increased abatement may generate additional liquid waste, sludge, contaminated filters and maintenance exposure. These practical consequences are not captured by assuming that RMMs can simply be upgraded.

The environmental ELVs in RAC's proposal raise additional concerns. An annual mass limit of **0.25 kg/year to air** and **0.15 kg/year to water** may be extremely challenging for high-throughput installations, even where efficient abatement is already in place. Absolute kg/year limits may penalise sites with higher production volumes while not necessarily reflecting their actual release efficiency. For water, compliance may depend on rinsing stages, drag-out, batch treatment, wastewater chemistry, discharge points and permit conditions. For air, compliance depends on aerosol generation, bath temperature, current density, ventilation capture, scrubber efficiency and operating hours. These are different technical systems and should not be treated as a single generic RMM problem.

The proposal would also create significant permitting and implementation constraints. Changes to ventilation, abatement, wastewater treatment, building layout or process configuration may require environmental permit variations or other authority approvals. These procedures cannot be completed reliably within a short transition period, especially if many sites across Europe are required to act simultaneously.

The impact would not be limited to direct investment cost. The RAC proposal could trigger closure, relocation or discontinuation of Cr(VI)-based activities where compliance is

technically impossible, economically unsustainable or not monitorable. SEAC itself considers that RO3 and RAC's proposal are likely not proportionate, especially with an 18-month transition period, and are likely not the most appropriate options when practicality is considered. But as mentioned in other reply, 18 month transition phase is only feasible if a credible technical pathway to compliance or substitution is available.

CETS considers that the cost assessment must not stop at the direct Cr(VI) user. Many affected companies are job platers or specialised surface-treatment service providers. The Annex XV material recognises that job platers are similar to toll manufacturers: they receive raw parts and specifications from customers and have no influence on the technology used to achieve the required functionalities. Therefore, the impact of the RAC proposal cannot be assessed by looking only at the plater's margin or producer surplus.

The real economic value is often downstream. If a job plater cannot comply with RAC's proposal and discontinues a process, the consequences may affect OEMs, Tier I and Tier II suppliers, maintenance chains, spare-parts availability, hydraulic systems, machinery, aerospace, defence, transport, energy and other strategic sectors. SEAC explicitly acknowledges that impacts up and down the supply chain were not accounted for. This omission is decisive for the RAC proposal because the proposal is precisely the option most likely to cause discontinuation, relocation or loss of capacity.

CETS therefore cannot provide a single representative cost figure for the sector. Costs are highly site-specific and depend on plant layout, number of lines, bath type, production volume, existing RMMs, permitting requirements, monitoring strategy, customer qualification and the feasibility of automation or enclosure. Direct site-level costs may include engineering studies, ventilation redesign, scrubber upgrades, wastewater treatment upgrades, monitoring campaigns, laboratory analysis, maintenance changes, downtime, permit variation and possible plant reconstruction. Indirect costs may include loss of production, customer requalification, rejected alternatives, loss of contracts, relocation, import dependency and downstream supply-chain disruption.

For some installations, the relevant cost is not an abatement cost but a non-use cost. If no technically feasible pathway exists to achieve 0.1 µg/m^3 and the associated ELVs, the company cannot simply invest its way into compliance. In that case, the outcome is closure, relocation or discontinuation of the affected activity. Such costs are not captured by a narrow RMM-upgrade model.

CETS therefore considers that RAC's proposal should not be adopted as a general restriction option for the surface-treatment sector. At minimum, before any such option could be considered, the following would be necessary:

- a use-specific technical feasibility assessment;
- preliminary evaluation of 1 µg/m^3, then followed by a period of monitoring and additional evaluation of 0.5 µg/m^3 followed by another phase of monitoring;
- a harmonised EU monitoring protocol for 0.1 µg/m^3;
- clear rules on RPE, APF values, fit testing, task duration and compliance demonstration;
- confirmation of analytical capacity and laboratory availability;
- assessment of whether the "not exceeded on any day" requirement is enforceable in task-based operations;
- assessment of supplier capacity for RMM equipment and services;
- consideration of permit variation timelines;
- explicit assessment of value-chain impacts;
- a safeguard mechanism for uses where no technically feasible compliance or substitution route exists.

CETS concludes that the RAC proposal would impose disproportionate and, in many cases, technically unachievable requirements on the European surface-treatment sector. It risks causing closure, relocation, loss of specialised job-plating capacity, import dependency and disruption of downstream value chains, without a robust demonstration that such impacts have been properly assessed or are proportionate.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 11

In the consultation on the Annex XV dossier, for certain uses of barium chromate (e.g. pyrotechnic delay compositions), it was claimed that safety concerns would limit the possibilities to implement effective ventilation to comply with the limit values for workers in all the restriction options. Please provide more information on whether there are alternative risk management measures that could be used to comply. What are the cost implications of these measures?

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QUESTION 12

Comments on each section of the SEAC draft opinion: In case you wish to comment on Section 1.2. 'SEAC opinion', please provide the comments here.

CETS considers that Section 1.2 should be substantially revised because it currently risks presenting the SEAC conclusions with a level of determinacy that is not supported by the underlying evidence.

CETS fully recognises the need to control occupational and environmental risks from Cr(VI) substances and does not contest the carcinogenic properties of Cr(VI). However, the restriction option finally recommended must be proportionate, technically implementable, monitorable, enforceable and based on a complete socio-economic assessment. Section 1.2 should make clearer that these conditions are not yet met in a robust way.

The central weakness is that the assessment does not account for impacts up and down the value chain. SEAC itself identifies as an uncertainty that "impacts up and down the supply chain were not accounted for". This is not a secondary caveat. It affects the validity of the proportionality assessment itself.

This is particularly important for UC2, UC3 and UC5, where many operators are job platers or specialised surface-treatment service providers. These companies are often supplied with raw parts and technical specifications by their customers and have no influence on the technology required to achieve the specified functionality. The Annex XV material itself recognises that job platers are similar to toll manufacturers and that this business model creates specific substitution challenges.

Therefore, the economic impact of the restriction cannot be assessed only by looking at the direct Cr(VI) user, its exposed workers, its turnover or its producer surplus. The value of the treatment is frequently realised downstream by OEMs, Tier I and Tier II suppliers, maintenance operators, repair chains, spare-parts networks and strategic sectors such as transport, machinery, hydraulics, aerospace, defence, energy and industrial equipment. A job plater's margin is not a proxy for the value of the treated component or for the socio-economic consequences of losing a qualified treatment route.

Section 1.2 should therefore avoid any conclusion suggesting that the proportionality of RO1, RO2 or other options has been fully demonstrated. At most, the available analysis supports

a conditional and incomplete assessment based on direct first-order costs and modelled health benefits. It does not support a complete value-chain proportionality conclusion.

CETS is also concerned that Section 1.2 may give the impression that uncertainty can be managed simply by adjusting the transition period. This is methodologically incorrect. Time is relevant only where there is a credible technical pathway to compliance or substitution. A longer transition period does not create a technically feasible, economically viable, customer-approved and industrially available alternative where none exists.

This point is critical because SEAC itself recognises that the available information does not allow a conclusion on the technical and economic feasibility or availability of alternatives at use level, use-category level or general level. If feasibility of alternatives is not demonstrated, then the concept of a transition period must be treated with caution. A fixed deadline without a feasible route to compliance or substitution is not a transition period; it is a delayed prohibition.

CETS therefore considers that Section 1.2 should clearly distinguish between:

1. options that may be theoretically assessed in a cost-benefit model;
2. options that are technically implementable in real installations;
3. options that can be monitored and enforced consistently across Member States;
4. options that are proportionate once full value-chain impacts are included.

These four dimensions are not equivalent. A modelled cost-benefit result cannot replace evidence on implementability, monitorability and value-chain impact.

This is especially relevant for RO2, RO3 and the RAC proposal. SEAC's own material describes RO2 as "likely proportionate" but also notes potential issues with equipment availability, analytical methods and service providers. RO3 is described as likely not proportionate at least with an 18-month transition period, with major economic impacts and challenges with implementability and enforceability. RAC's proposal is described as involving higher costs than RO3, more likely closures and foreseen practicality challenges.

Section 1.2 should not compress these findings into a simplified conclusion. The opinion should state explicitly that RO2 can only be considered as a possible basis for further discussion if the following conditions are met: longer and realistic transition periods, harmonised EU monitoring rules, clear treatment of RPE, sufficient supplier and laboratory

capacity, consideration of permitting timelines, and assessment of downstream value-chain impacts.

For RO3 and the RAC proposal, CETS considers that Section 1.2 should be more explicit. These options should not be presented as potentially proportionate merely because a longer transition period could be granted. Where there is no demonstrated route to compliance or substitution, a longer deadline only delays closure, relocation, import dependency and loss of EU industrial capability.

CETS is also concerned by unresolved compliance questions. Section 1.2 should acknowledge that the treatment of respiratory protective equipment remains unclear. The calculation of costs and benefits relies on company information from CfEs, while SEAC identifies uncertainty regarding how RPE should be integrated into compliance assessment. This is not a minor technical detail. It determines whether certain task-based operations can continue and whether workers who are effectively protected during specific tasks are considered compliant or non-compliant.

Similarly, Section 1.2 should explicitly refer to monitorability. Low limit values require sufficiently sensitive analytical methods, harmonised sampling strategies, common rules for LoQ, clear treatment of task-based exposure and consistent enforcement across Member States. Without such rules, companies cannot know what they must design for, and competent authorities may enforce the restriction inconsistently.

CETS also considers that the baseline uncertainty should be reflected more prominently. SEAC identifies that the baseline used for the impact assessment, namely a situation where the substances have been unlisted from Annex XIV, does not correspond to the situation under which the information used was collected. This weakens the reliability of the estimated costs, benefits and company responses. A baseline mismatch cannot be corrected by central estimates or Monte Carlo modelling.

The opinion should also avoid giving excessive weight to modelled benefits without explaining their nature and limitations. The monetised benefits are based on statistical risk reductions and statistical cancer cases avoided, not on cancer cases that can be individually identified or attributed in practice. CETS supports effective worker protection, but modelled statistical benefits should not be used to override incomplete cost assessment, absent value-chain evaluation and unresolved feasibility issues.

CETS therefore requests that Section 1.2 be revised to state that:

- the proportionality conclusions are conditional and subject to major unresolved uncertainties;
- impacts up and down the value chain were not accounted for and must be assessed before any robust proportionality conclusion is drawn;
- job platers and specialised surface-treatment service providers cannot be assessed only through their own producer surplus;
- the economic value of the treatment is often realised downstream by OEMs, Tier I and Tier II suppliers, maintenance chains and strategic industrial sectors;
- transition periods are meaningful only where a credible route to compliance or substitution exists;
- RO3 and the RAC proposal should not be considered potentially proportionate merely by extending the transition period;
- RPE treatment, APF values, sampling strategy, LoQ, analytical capability and enforcement rules must be harmonised before compliance obligations are imposed;
- the baseline uncertainty and the limited representativeness of CfE data should be reflected in the main SEAC opinion, not only in later uncertainty sections;
- the absence of a full value-chain assessment prevents a robust conclusion that the suggested restriction is the most appropriate EU-wide measure.

CETS therefore considers that Section 1.2 should not present the Draft Opinion as a firm endorsement of any restriction option. It should state that the evidence currently available is insufficient to support any conclusion on proportionality and appropriateness, especially for RO3 and the RAC proposal, and that even RO1 and RO2 requires substantial revision, longer transition periods, harmonised compliance rules and a complete value-chain assessment before it can be considered a workable basis.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 13

In case you wish to comment on Section 2.2.2. 'SEAC opinion summary', please provide the comments here.

CETS considers that Section 2.2.2 should be revised because the current summary does not adequately reflect the limitations, uncertainties and structural gaps of the SEAC assessment. A summary section should not merely reproduce the final direction of the opinion. It should also make clear to the decision-maker which elements of the assessment are robust, which are uncertain, and which impacts have not been assessed.

The main concern is that the opinion summary does not sufficiently reflect the absence of an assessment of impacts up and down the value chain. SEAC itself recognises, in the uncertainty section, that impacts up and down the supply chain were not accounted for and that some users of chromates in scope may not have been recognised and included in the CfEs. This is not a secondary uncertainty. It is a central limitation of the socio-economic analysis.

For UC2, UC3 and UC5, the relevant economic actor is often not an integrated OEM but a job plater or specialised surface-treatment service provider. Such companies frequently treat parts that belong to customers and must comply with customer, OEM, Tier I or Tier II specifications. The economic value of the treatment is therefore not represented by the plater's margin or producer surplus. It is realised downstream in component availability, repair capacity, spare parts, machinery, transport, hydraulics, aerospace, defence, energy and other industrial value chains.

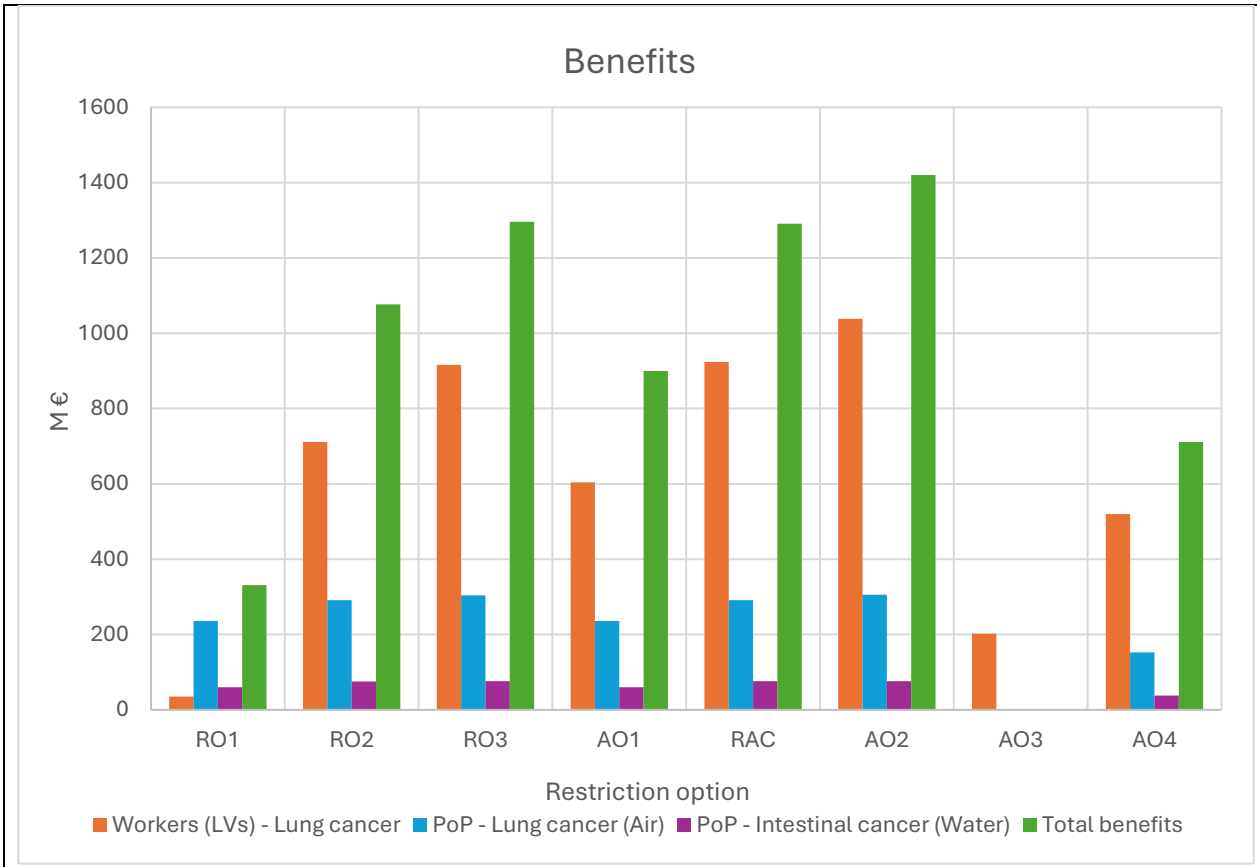
For this reason, the opinion summary should not state or imply that the proportionality assessment captures the relevant socio-economic impacts. It captures only part of the direct first-order costs borne by Cr(VI) users. It does not capture downstream disruption, requalification costs, production delays, loss of qualified suppliers, loss of repair capacity, relocation, import dependency, loss of know-how, technological sovereignty or security-of-supply consequences.

CETS also considers that Section 2.2.2 should present the benefit assessment more carefully. CETS fully recognises the carcinogenicity of Cr(VI) and supports effective risk reduction. However, the benefits presented in the opinion are modelled statistical cancer cases avoided, not observable or individually attributable cancer cases. According to the

Background Document, the expected number of avoided statistical cancer cases over 20 years is 64 under RO1, 195 under RO2 and 234 under RO3, equivalent to 3.2, 9.8 and 11.7 statistical cancer cases avoided per year, respectively, across the whole EU/EEA.

These figures should be reported in the summary together with the monetised values. Expressing the benefits mainly as monetary amounts risks giving the impression that the health benefit is more certain and more measurable than it actually is. The relevant point is not that worker protection is unimportant. The point is that small modelled statistical risk reductions, spread across the whole EU/EEA over 20 years, should not be treated as if they were directly observable epidemiological outcomes.

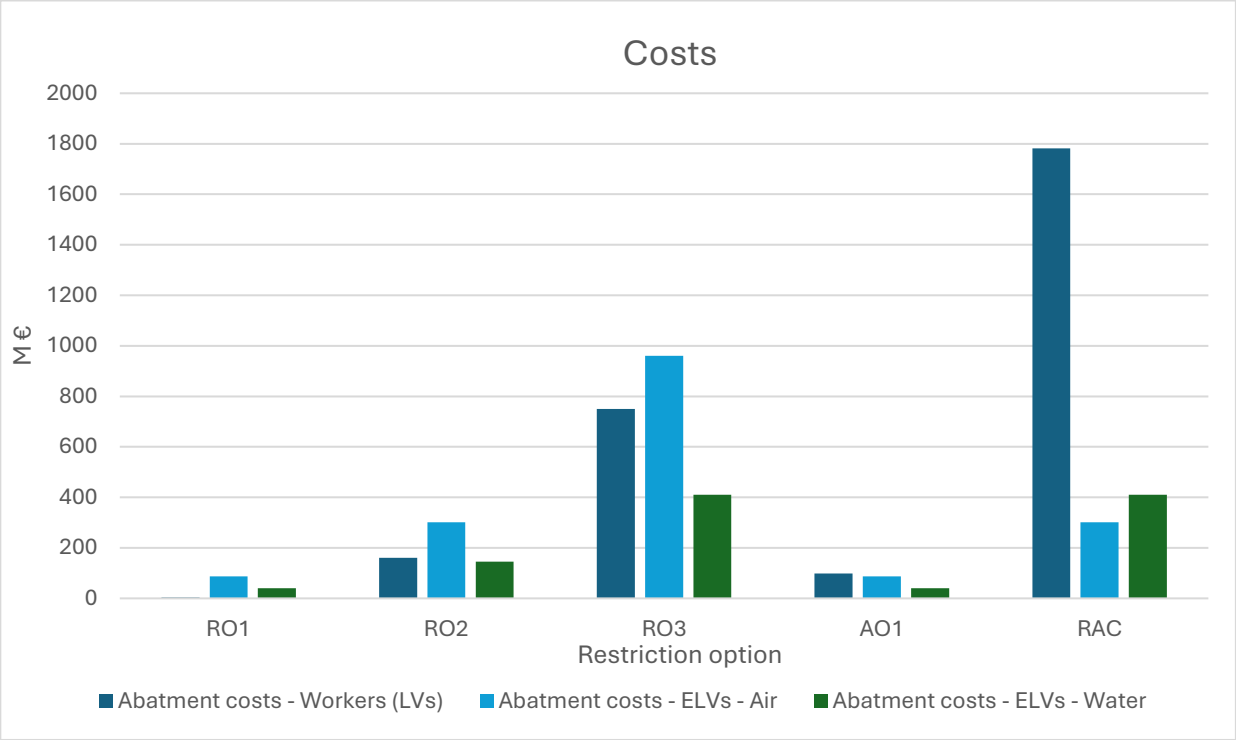
The summary should also clarify the basis of the WTP/VSC calculation. The monetised benefits are based on values assigned to statistical cancer cases avoided, not on the identification of specific lives saved or specific cancer cases that can be attributed to the restriction. This distinction is essential for proportionality. A statistical risk model can support policy analysis, but it should not be presented as if it were an observed health outcome.



The benefits graph should be retained because it illustrates an important point that is not sufficiently clear in the SEAC summary. The increase in benefits between the main options is driven predominantly by the worker exposure component, not by the environmental ELV component. In Table 10, the general-population benefits from air and water emissions are €291m + €75m under RO2 and €304m + €76m under RO3. This means that moving from RO2 to RO3 adds only around €14m in general-population benefits over 20 years, while the worker-related benefit increases by around €205m.

This matters because it suggests that stricter environmental ELVs provide only limited incremental monetised benefits, particularly when moving from RO2 to RO3 or RAC-like approaches. The summary should therefore not present the restriction as if all elements of the package contribute proportionally to the benefit. They do not. The worker LV component and the environmental ELV component should be assessed separately.

This conclusion is reinforced when the benefits graph is read together with the cost graph below. The cost of environmental abatement rises sharply as ELVs become stricter. In Table 7, air and water abatement costs are estimated at €87m and €40m under RO1, €301m and €146m under RO2, and €960m and €410m under RO3. For the RAC proposal, air and water costs are estimated at €301m and €410m.



The comparison between the two graphs shows the core proportionality problem. The stricter environmental ELVs generate rapidly increasing abatement costs, while the additional general-population benefits appear comparatively limited. This is particularly clear when moving from RO2 to RO3: environmental abatement costs increase from €447m to €1.37bn, while the monetised general-population benefit increases only from approximately €366m to €380m.

CETS therefore considers that Section 2.2.2 should explicitly state that the environmental ELV component requires a separate proportionality assessment. The data do not support the conclusion that progressively stricter ELVs necessarily provide proportionate incremental benefits. Cost of benefits for worker has to be properly assessed, the reason being explained in other Qs.

There is another major limitation. If compliance with ELVs is technically, spatially, economically or permit-wise impossible for some installations, the true cost is not merely an abatement cost. It may be non-use, closure, relocation, loss of surface-treatment capacity and value-chain disruption. This is especially relevant for high-throughput sites, where absolute kg/year ELVs may penalise efficient installations with advanced abatement but higher production volumes.

CETS therefore considers that Section 2.2.2 should avoid presenting the assessed options as if they can be easily combined through a modular calculation. The modular structure may be useful for a theoretical model, but it is not sufficient for real-world decision-making. Worker LVs, air ELVs, water ELVs, transition periods, RPE treatment, analytical methods, permitting timelines and value-chain effects interact with each other. They cannot simply be recombined mathematically without a new assessment of feasibility and proportionality.

In terms of implementability, enforceability and manageability, the summary should also acknowledge that several essential elements remain unclear: common EU rules on RPE, assigned protection factors, task-based exposure, 8-hour TWA assessment, LoQ, sampling duration, analytical methods, annual release calculation, multiple emission points, batch versus continuous operations, and enforcement across Member States.

For these reasons, CETS requests that Section 2.2.2 be revised to state that:

- the proportionality conclusions are conditional and subject to major unresolved uncertainties;
- value-chain impacts were not accounted for and this prevents a complete socio-economic conclusion;
- the cost assessment should not be presented as covering the real impact on downstream value chains;
- health benefits should be described as modelled statistical cancer cases avoided, not as directly observable or attributable cases;
- the environmental ELV component should be assessed separately from the worker LV component;
- stricter ELVs appear to generate rapidly increasing abatement costs with limited incremental general-population benefits;
- RO3 and RAC's proposal should not be described as potentially proportionate merely by extending transition periods;
- the summary should avoid suggesting that restriction elements can be freely recombined without a new feasibility and proportionality assessment.

CETS therefore considers that Section 2.2.2 currently overstates the robustness of the SEAC conclusions. The summary should make clear that the assessment is incomplete, especially because value-chain impacts and ELV-driven non-use were not accounted for.

Without these elements, the opinion summary cannot provide a reliable basis for concluding that RO2, RO3, RAC's proposal or any stricter combination is proportionate or the most appropriate EU-wide measure.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 14

In case you wish to comment on Section 3.2. 'Justification that action is required on a Union wide basis', please provide the comments here.

CETS agrees that, if regulatory action is considered necessary for Cr(VI) substances, such action should be taken at Union level rather than through divergent national measures. Fragmented national requirements on Cr(VI) exposure, emissions, monitoring or use conditions would risk undermining the internal market, creating unequal worker protection and encouraging relocation of activities within the EU towards Member States with less demanding requirements.

This is consistent with SEAC's conclusion that the use of the Cr(VI) substances covered by the proposed restriction takes place in several EU and EEA Member States and that different national requirements would create an uneven playing field for operators and workers, jeopardise the free movement of goods and create challenges for supranational companies seeking to harmonise worker protection.

However, CETS considers that Section 3.2 should more clearly distinguish between two different questions:

1. whether action, if required, should be taken on a Union-wide basis; and

2. whether the specific restriction design proposed is the most appropriate Union-wide measure.

CETS agrees with the first point. CETS does not consider that the second point has been demonstrated.

A Union-wide measure is justified only if it is genuinely harmonised, technically implementable, monitorable, enforceable, proportionate and not already covered by other regulation. A measure is not truly harmonised merely because it is adopted under REACH Annex XVII. It must also contain common EU rules on measurement, sampling strategy, RPE, APF values, treatment of task-based exposure, LoQ, environmental release calculations, MRFs, batch versus continuous operations, multiple emission points and enforcement interpretation. Without these common rules, the same restriction may be applied differently across Member States, recreating the fragmentation that Section 3.2 seeks to avoid.

For surface-treatment operations, worker protection, environmental emissions, waste management and permitting are already regulated through several instruments, including REACH authorisation, OSH/CMRD, the EU BOEL for Cr(VI), IED/IPPC permitting, BREF/BAT frameworks, national permits and customer/OEM qualification systems. The Background Document itself recognises that other relevant Union-wide and national legislation already exists to protect workers and control emissions from industrial sites, while also noting the absence of a fully equivalent EU-wide measure for Cr(VI) environmental emissions.

Therefore, the correct question is not whether Union-wide action is desirable in the abstract. The correct question is which Union-wide or combined Union-wide instrument is the most appropriate, practical and proportionate. Section 3.2 should not be used to imply that a REACH restriction is automatically preferable simply because national divergence would be problematic.

This is particularly important because SEAC itself recognises that the authorisation process was not analysed as a comparator in the Annex XV Dossier and that, in the absence of such analysis, it is not possible for SEAC to evaluate authorisation against the proposed restriction and come to an overall conclusion on the most appropriate risk management option. SEAC also notes that a combination of different tools, for example managing worker risks via BOEL and environmental emissions via restriction, might be a useful strategy but was not

assessed. Sometimes the already existing strategies can be, if not already is, enough to protect human and environment.

CETS therefore considers that Section 3.2 should avoid conflating "Union-wide action" with "the proposed restriction". A harmonised Union-wide framework may be necessary, but the current dossier does not sufficiently demonstrate that the proposed restriction, in its current form, is the correct framework.

CETS is also concerned that the justification for Union-wide action is partly based on the assumption that the Cr(VI) substances would no longer be regulated under Annex XIV of REACH. The Background Document states that the purpose of the restriction is to control risks when the substances would no longer be regulated under Annex XIV, and also explains that authorisation has significantly reduced risks but has been slower and more resource-intensive than anticipated. Administrative manageability of the authorisation system is a relevant consideration, but it cannot replace a full assessment of effectiveness, proportionality and socio-economic impact. And such a burden cannot by put upon industry shoulders.

The shift from authorisation to restriction has substantive consequences. Authorisation provides review periods, case-specific conditions, substitution analysis, review reports and the possibility to continue use where no suitable alternative is technically or economically feasible and where risks are controlled. A restriction based on fixed limit values and fixed deadlines does not provide the same case-by-case safeguard. If alternatives are not demonstrated as technically and economically feasible at use level, a fixed deadline may operate as a delayed prohibition rather than as a transition.

Section 3.2 should also address the value-chain dimension. A Union-wide measure cannot be assessed only by looking at the direct Cr(VI) user. In UC2, UC3 and UC5, many operators are job platers or specialised surface-treatment service providers. They process parts owned by customers and operate under OEM, Tier I or Tier II specifications. The industrial value is often realised downstream, not in the plater's margin.

Therefore, a Union-wide measure that disrupts job-plating capacity may affect downstream manufacturing, repair, maintenance, spare parts, transport, machinery, hydraulics, aerospace, defence, energy and other strategic sectors across several Member States. If

those up- and downstream impacts are not assessed, the Union-wide justification is incomplete.

This point is reinforced by SEAC's own recognition that availability of components, technological sovereignty, open strategic autonomy and security of supply may be affected, especially under stricter options and in UCs 3, 4 and 5. SEAC also notes that sourcing from outside the EU/EEA may become an option because imports are not covered by the proposed restriction, but that increased imports may negatively affect resilience, technological sovereignty, open strategic autonomy and security of supply.

This is essential for Section 3.2. A measure designed to preserve the EU internal market should not unintentionally create a competitive disadvantage for EU operators compared with imported articles or services performed outside the EU/EEA. If the restriction accelerates relocation or import dependency, it may weaken the EU industrial base while leaving downstream demand unchanged.

CETS therefore requests that Section 3.2 be revised to state that:

- CETS supports Union-wide harmonisation in principle;
- Union-wide action does not automatically mean that the proposed restriction is the most appropriate instrument;
- a genuinely harmonised measure requires common EU rules on monitoring, RPE, APF, LoQ, sampling, ELV calculation, MRFs and enforcement;
- the interaction with OSH/CMRD, IED/IPPC, BREF/BAT, national permits and REACH authorisation must be assessed explicitly;
- combined regulatory options should be assessed rather than excluded;
- the socio-economic consequences of replacing authorisation with restriction must be evaluated;
- value-chain impacts must be included because job platers and specialised service providers are embedded in downstream EU industrial chains;
- potential relocation and import dependency must be assessed as Union-wide impacts, not as external or secondary effects.

CETS therefore supports the need for a coherent Union-wide framework, but considers that Section 3.2 does not demonstrate that the proposed restriction, as currently designed, is the most appropriate Union-wide measure. A Union-wide measure should preserve worker protection, environmental protection, internal-market consistency and EU industrial

capacity at the same time. The current assessment does not yet demonstrate that these objectives have been balanced adequately.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 15

In case you wish to comment on Section 3.3.1. 'Availability and technical and economic feasibility of alternatives', please provide the comments here.

CETS considers that Section 3.3.1 should be substantially revised. The current text correctly recognises that the available information does **not** allow SEAC to conclude on the availability, technical feasibility or economic feasibility of alternatives, either at general level, use-category level or use level. However, this conclusion is not reflected with sufficient weight in the rest of the opinion.

SEAC states that the information in the Background Document is cursory and does not allow an evaluation of the technical and economic feasibility or availability of alternatives. SEAC also recognises that, for restriction options where substitution may become a relevant response, such as RO3, AO2, AO3, AO4 and RAC's proposed LV of 0.1 µg/m^3, the analysis of alternatives provides only limited information for a use-specific impact assessment.

This is a fundamental point. If alternatives cannot be assessed as technically and economically feasible at use level, then substitution cannot be used, explicitly or implicitly, as a credible compliance pathway. A transition period is meaningful only if there is a demonstrated and credible route to compliance or substitution. Time does not create an alternative where no technically feasible, customer-approved and economically feasible or viable alternative exists.

For surface treatment, alternatives cannot be assessed at the level of broad use categories only. Technical feasibility depends on substrate, geometry, coating thickness, hardness, wear resistance, corrosion resistance, adhesion, friction, surface finish, dimensional tolerance, thermal resistance, chemical resistance, repairability, hydrogen embrittlement considerations, customer specifications and OEM qualification requirements. A technology that works for one product, one geometry, one customer or one market niche cannot be extrapolated to a whole use category.

The Background Document itself recognises that Cr(VI) technologies offer a wide range of functionalities, are compatible with many substrates and geometries, and have reached industrial maturity over decades. It also recognises that substitution is a "multivariable equation" and may require changes to technical facilities, staff training and customer acceptance, including strict recertification in sectors such as aerospace and defence.

This should be the starting point of Section 3.3.1. The existence of a potential alternative technology is not equivalent to the availability of a technically and economically feasible alternative. The correct test is not whether an alternative exists somewhere, but whether it can deliver the required functionality for the specific use, under the relevant customer specification, at industrial scale, within the required qualification framework, and without creating disproportionate costs or regrettable substitution.

CETS is concerned that Section 3.3.1 risks creating an imbalance in the treatment of evidence. Industry evidence indicating lack of technical feasibility, performance gaps, customer rejection, qualification barriers, increased costs or absence of viable alternatives is often treated as limited, insufficiently verifiable or uncertain. At the same time, isolated positive examples of substitution are presented as signals that alternatives can be made to work in some uses. SEAC notes such positive signals, but also states that the relevant applications are not well framed, performance levels relative to standards or customer requirements were not assessed, market coverage was not analysed, and the Dossier Submitter did not reach conclusions on the technical and economic feasibility of any identified alternative.

CETS does not object to recognising successful substitution where it is demonstrated. However, isolated cases should not be used to support general regulatory assumptions unless they are accompanied by evidence on performance, customer acceptance, qualification status, market share, production scale, cost and applicability to the relevant use. If negative industry evidence is considered insufficiently robust, positive niche examples must be subject to the same evidentiary standard.

This is particularly important for UC2 and UC3. Cr(III)-based electroplating is often discussed as a possible alternative to Cr(VI) electroplating, but the SEAC summary itself identifies relevant technical issues, including adhesion, hardness, corrosion protection, abrasion protection and throwing power. It also notes that transition may require modifications to process lines or equipment and, for some users, the construction of a new facility. These are not minor implementation details. They directly affect technical feasibility and economic feasibility.

The same applies to substances used in alternative processes. Boric acid is often required as a buffer, while nickel may be used in undercoating and is a carcinogen. Therefore, alternatives must also be assessed for their regulatory durability and risk profile. A

substitution route that depends on substances subject to existing or future regulatory pressure, or that introduces new hazards, cannot automatically be considered a sustainable alternative.

CETS also considers that the distinction between “economic feasibility” and “economic viability” is insufficiently clear. SEAC notes that the Dossier Submitter did not define a clear cut-off for economic viability and that the information provided does not enable conclusions on economic feasibility or viability, although it suggests significant substitution costs in many cases. This uncertainty should not be treated as a minor methodological issue. It affects whether companies can remain operational after substitution.

The economic assessment of alternatives must also reflect the specific role of job platers. The Annex XV material recognises that job platers are service providers similar to toll manufacturers: they are supplied with raw parts and specifications and have no influence on the technology used to achieve the specified functionality. This means that a job plater cannot simply decide to adopt an alternative if the customer, OEM, Tier I or Tier II specification still requires Cr(VI)-based performance or if the alternative is not approved.

This is also why a broad use-category approach is insufficient. A job plater may serve multiple sectors and multiple customers, each with different specifications, qualification rules and acceptance criteria. Even where an alternative exists for part of the product portfolio, it may not be available for all products treated on the same line. A partial alternative does not solve the regulatory problem if the company must maintain Cr(VI) capability for remaining qualified uses.

The CfE information confirms these barriers. Reported difficulties included alternatives still being in testing, validation or qualification, unacceptable performance loss compared with Cr(VI), suitability for only part of the products, customer requirements mandating Cr(VI), lack of customer certification, potential regrettable substitution, availability issues and economic feasibility issues where a different technology requires different equipment.

CETS therefore considers that Section 3.3.1 should not state or imply that alternatives are available in any meaningful regulatory sense unless the following conditions are demonstrated at use level:

- the alternative provides the required technical performance;

- the alternative is compatible with the relevant substrate, geometry and coating requirements;
- the alternative is qualified and accepted by customers/OEMs;
- the alternative is available at industrial scale;
- the alternative can cover a material share of the relevant market;
- the alternative does not create regrettable substitution;
- the alternative can be implemented without disproportionate investment, operating cost or loss of production capacity;
- the alternative is suitable for job platers and not only for integrated or captive production lines;
- the alternative preserves downstream value-chain continuity.

The value-chain dimension is essential. The assessment of alternatives should not focus only on the direct Cr(VI) user. In many cases, the economic value of the treatment is realised downstream in the treated component, system, vehicle, machine, aircraft, defence equipment, hydraulic unit, repair operation or spare part. If a surface-treatment provider cannot substitute, the consequence may be downstream disruption, loss of qualified suppliers, import dependency, requalification costs, production delays and loss of EU industrial capability.

For this reason, CETS considers that the absence of a complete value-chain assessment also affects the analysis of alternatives. An alternative cannot be considered feasible merely because the surface-treatment step can technically be modified in isolation. It must be feasible for the entire qualified value chain.

CETS requests that Section 3.3.1 be revised to state clearly that:

- the current information does not allow conclusions on availability, technical feasibility or economic feasibility of alternatives at use, UC or general level;
- isolated examples of successful substitution cannot be extrapolated to entire use categories;
- alternatives must be assessed against customer and OEM requirements, not only against generic technical descriptions;
- job platers cannot independently substitute where customers define the required functionality and technology;
- Cr(III)-based plating, nickel-based systems and other alternatives require use-specific assessment of performance, hazards, regulatory durability and economic feasibility;

- transition periods cannot be justified by reference to alternatives unless a credible substitution pathway exists;
- stricter options such as RO3 and RAC's proposal cannot rely on substitution as a response without a complete use-specific analysis of alternatives;
- value-chain feasibility must be assessed before any alternative is considered a realistic replacement.

CETS therefore considers that Section 3.3.1 should be framed as a limitation of the Draft Opinion, not as support for the proposed restriction options. The evidence currently available may justify an inventory of possible technologies, but it does not justify a conclusion that substitution is technically and economically feasible for the affected surface-treatment value chains.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 16

In case you wish to comment on Section 3.4.1. 'Regulatory risk management options other than restriction', please provide the comments here.

CETS considers that Section 3.4.1 should be substantially revised because the assessment of regulatory risk management options other than the proposed restriction is incomplete.

CETS agrees that Cr(VI) risks should be managed through a coherent Union-wide framework. However, CETS does not consider that the Draft Opinion demonstrates that the proposed REACH restriction, in its current form, is the most appropriate regulatory risk management option.

The uses concerned by the restriction are already subject to several regulatory frameworks, including REACH authorisation, occupational safety and health legislation, the Carcinogens, Mutagens and Reprotoxic Substances Directive, binding occupational exposure limits, industrial emissions legislation, IED/IPPC permitting, BAT/BREF frameworks, waste-management obligations, national environmental permits and, where relevant, major-accident legislation. The current CETS draft already identifies this concern, referring in particular to OSH, IED/IPPC, Seveso and REACH authorisation as relevant existing regulatory instruments.

A restriction may be appropriate only if it complements these instruments and improves legal certainty. It should not create overlapping, inconsistent or contradictory compliance systems.

SEAC itself recognises a major limitation in the assessment. It states that regulatory risk management options provided by REACH are not sufficiently covered to allow SEAC to conclude on the most appropriate risk management option, because the Dossier Submitter did not include an analysis of the authorisation system. SEAC also notes that a combination of different risk management options was not assessed, for example worker protection via occupational safety and health legislation and environmental emissions via a separate act such as a REACH restriction. SEAC therefore states that it cannot evaluate whether such a combined approach might be more appropriate than an all-encompassing restriction.

This is a decisive point. If authorisation and combined regulatory options were not assessed, then the Draft Opinion should not present the proposed restriction as the most appropriate EU-wide risk management measure. At most, SEAC can conclude that, among the limited

options assessed by the Dossier Submitter, a restriction may be one possible regulatory design. It cannot conclude that it is the most appropriate option overall.

CETS is particularly concerned by the absence of a proper comparison with REACH authorisation. The authorisation system has clear weaknesses, including workload, delays and uncertainty. However, it also provides important safeguards: case-by-case assessment, review periods, substitution analysis, risk-management conditions, review reports and the possibility to continue a use where alternatives are not technically or economically feasible and risks are controlled.

A restriction based on fixed limit values and fixed deadlines does not provide the same safeguards. If alternatives are not demonstrated to be technically and economically feasible at use level, a fixed transition period does not create substitution. It may simply operate as a delayed prohibition. This is especially problematic for surface-treatment uses where qualification, customer approval and performance requirements determine whether substitution is possible.

The dossier itself recognises that many job platers are comparable to toll manufacturers: they receive parts and specifications from customers and have no influence on the technology used to achieve the specified functionality. This means that a job plater cannot independently decide to substitute a Cr(VI)-based process if the customer, OEM, Tier I or Tier II specification still requires it. Any regulatory option that removes the flexibility of authorisation without assessing this value-chain reality is incomplete.

CETS also considers that Section 3.4.1 gives insufficient weight to the possibility of a combined regulatory approach. Worker exposure could be managed primarily through OSH/CMRD, with a harmonised BOEL or other occupational framework, while environmental releases could be managed through IED/BREF, national permits, BAT-based requirements. SEAC itself notes that managing worker risks via BOEL and environmental emissions via restriction could be a useful strategy but was not assessed.

This combined approach deserves proper assessment because it may be more coherent and enforceable than an all-encompassing REACH restriction. Worker protection is already the core function of occupational safety legislation. Industrial emissions are already managed through IED/IPPC permitting and BAT/BREF frameworks. REACH restriction should not be

used to duplicate these systems unless it is clearly shown that the existing instruments cannot adequately manage the risk.

CETS notes that SEAC discusses IED and CMRD/BOEL in Section 3.4.1. SEAC recognises that IED-related instruments may not alone ensure a defined environmental risk level and that CMRD currently sets a BOEL for Cr(VI), while several Member States already apply more stringent values. SEAC also notes that setting worker-protection limit values through one legislation only would be clearer and would avoid the need to fit requirements from different legal systems together.

This point should be developed further. A REACH restriction that introduces occupational LVs in parallel with BOELs risks creating confusion over inspection powers, measurement rules, RPE treatment, task-based exposure, 8-hour TWA calculation, APF values and enforcement responsibilities. If the same workplace exposure is regulated simultaneously through OSH and REACH, companies and authorities need clear rules preventing inconsistent interpretation.

The same applies to environmental emissions. IED/IPPC permits and BAT/BREF frameworks already regulate industrial installations, monitoring, emission reduction and permit variations. A REACH ELV system must be aligned with these frameworks. Otherwise, installations may face two different environmental compliance systems: one under industrial emissions legislation and one under REACH, potentially based on different metrics, sampling points, averaging periods, permit procedures and enforcement authorities.

This is particularly relevant for transition periods. Changes to ventilation, air abatement, wastewater treatment, building layout or process configuration may require environmental permit variation. A REACH restriction cannot assume that companies can make such changes within 18 months if the necessary approvals under IED/IPPC or national permitting systems require longer timelines.

CETS also considers that Section 3.4.1 should address interactions with other EU regulatory initiatives. One example is the possible restriction of PFAS. The Background Document recognises that many sites use mist suppressants during electroplating, that some mist suppressants contain PFAS, and that the proportion of PFAS-containing mist suppressants is unknown because their presence has not been systematically reported in AfAs. It also

notes that alternatives to PFAS-containing mist suppressants have been studied in PFHxS and universal PFAS restriction processes.

This is directly relevant to Cr(VI) risk management. Mist suppressants may be one of the tools used to reduce chromium aerosol formation. If one EU measure assumes further reduction of Cr(VI) exposure or emissions through RMMs, while another EU measure restricts or destabilises the availability of certain RMM tools, the combined regulatory effect must be assessed. Regulatory coherence is essential.

CETS further considers that Section 3.4.1 should explicitly address value-chain impacts. A regulatory option cannot be judged appropriate only by considering direct compliance at the Cr(VI) user. In UC2, UC3 and UC5, many operators are job platers or specialised surface-treatment providers embedded in downstream value chains. The socio-economic value of the activity is often realised downstream in components, systems, repair capacity, spare parts, transport equipment, machinery, hydraulic systems, aerospace, defence, energy and other strategic sectors.

If the restriction causes closure or relocation of specialised surface-treatment capacity, the impact may extend far beyond the plater. A proper regulatory-option assessment should compare not only direct regulatory costs, but also downstream supply-chain effects, import dependency, loss of EU repair capacity, loss of know-how, technological sovereignty and security-of-supply risks.

CETS therefore requests that Section 3.4.1 be revised to state clearly that:

- other REACH risk management options, in particular authorisation, were not assessed in sufficient detail;
- the socio-economic impact of replacing authorisation with restriction was not assessed;
- combined regulatory options were not assessed, despite being potentially more coherent;
- worker exposure could be addressed through OSH/CMRD, while environmental emissions could be addressed through IED/BREF, permits or a more targeted REACH measure;
- overlapping REACH and OSH requirements may create uncertainty unless measurement, RPE, APF, task-based exposure and enforcement rules are harmonised;

- environmental ELVs under REACH must be aligned with IED/IPPC permitting and BAT/BREF requirements;
- transition periods must account for permit variation and authority approval timelines;
- interactions with other regulatory initiatives, including PFAS restrictions affecting mist suppressants, must be assessed;
- value-chain impacts must be included before concluding that any regulatory option is the most appropriate EU-wide measure.

CETS therefore considers that Section 3.4.1 should not conclude that the proposed restriction is the most appropriate regulatory risk management option overall. The correct conclusion is that the current assessment is incomplete. A full comparative assessment of REACH restriction, REACH authorisation, OSH/CMRD, IED/BREF and combined approaches is necessary before a robust conclusion can be drawn.

In its current form, the Draft Opinion risks replacing a case-by-case authorisation system with a fixed restriction system without demonstrating that this replacement is more effective, more proportionate, more enforceable or less disruptive for EU industrial value chains.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 17

In case you wish to comment on Section 3.4.2.2. 'Definition of the baseline', please provide the comments here.

CETS considers that Section 3.4.2.2 should be substantially revised because the baseline used for the socio-economic assessment is not sufficiently robust to support firm conclusions on costs, benefits, proportionality or the most appropriate restriction option.

The baseline is a decisive element of the entire assessment. If the baseline is incorrect or incomplete, all subsequent calculations are affected: expected exposure reduction, emissions reduction, number of workers affected, number of sites requiring RMM upgrades, number of companies likely to close or relocate, expected benefits, expected costs and net benefits.

The impact assessment relies on an estimated population of approximately 2,000 sites using Cr(VI) substances, but the exact number of companies operating in each use category is unknown because downstream user notifications lack precise use descriptions or are not aligned with the use categories used in the report. The same baseline distributes the 2,000 companies across use categories according to the proportions of CfE responses.

This approach creates several problems.

First, the number of sites is estimated, not known. This affects both benefits and costs. If the number of sites or exposed workers is underestimated, both health benefits and compliance costs may be underestimated. If the number of active sites decreases because of market contraction, benefits may be overestimated. The direction of the error is not necessarily the same for all endpoints. This confirms that central estimates should not be presented as robust.

Second, the distribution across use categories is uncertain. Article 66 notifications, AfAs, active registrations and CfEs were not designed to create a statistically complete map of the EU surface-treatment sector. They were generated for different regulatory purposes and use different descriptors. Using CfE response proportions to distribute the whole estimated population assumes representativeness that is not demonstrated at the required level of detail.

Third, the baseline does not properly distinguish between different industrial roles. A site may be a job plater, a specialised plater, a captive OEM operation, a Tier I supplier, a Tier II supplier, a repair provider or a maintenance service provider. These categories do not have

the same economic function, substitution constraints or value-chain relevance. Treating them as equivalent "Cr(VI) users" hides the real structure of the market.

This is particularly important because job platers are not ordinary producers selling their own articles. The Annex XV material recognises that job platers are service providers similar to toll manufacturers: they receive raw parts and specifications from customers and have no influence on the technology used to achieve the required functionalities. Therefore, a baseline that counts the job plater as the relevant economic unit but does not include the downstream value enabled by that job plater is incomplete.

The correct baseline should capture not only the direct Cr(VI) user but also the value-chain position of that user. In many cases, the surface-treatment company is not the true economic beneficiary of the treated article. The value is realised downstream by OEMs, Tier I and Tier II suppliers, component manufacturers, repair chains, maintenance operators and strategic sectors such as machinery, hydraulics, transport, aerospace, defence, energy and industrial equipment.

CETS therefore considers that the baseline should include an up- and downstream value-chain mapping. Without this, the assessment cannot correctly estimate non-use costs, relocation risks, security-of-supply impacts, requalification costs, loss of repair capacity, import dependency or loss of industrial capability. SEAC's own uncertainty summary recognises that impacts up and down the supply chain were not accounted for.

This omission affects the baseline directly. A baseline that identifies only "2,000 sites" but not the value chains served by those sites cannot support a robust socio-economic assessment.
The number of directly exposed workers or plating lines is not a proxy for the economic value of the treated components. A small job plater with few exposed workers may be a bottleneck in a qualified supply chain. Conversely, a large site may serve lower-criticality markets. These differences matter for proportionality.

CETS is also concerned that the baseline gives insufficient weight to the current market situation of European job platers. The sector is already affected by closures, market disruption and relocation pressure. In particular, downstream sectors such as automotive and general manufacturing are undergoing restructuring. A baseline assuming stable or growing demand without considering contraction scenarios risks overstating the capacity of companies to absorb additional compliance costs and understating the likelihood of closure or relocation.

CETS further considers that the baseline should not rely on statistical modelling where the underlying population is uncertain and small in relevant subgroups. Statistical tools are useful when the underlying dataset is sufficiently large, representative and stable. Where use categories contain heterogeneous and relatively small populations, and where the relevant variables include site-specific plant layout, customer qualification, RPE use, exposure tasks, emission points and downstream value-chain dependence, statistical extrapolation risks creating false precision. In such circumstances, evidence-based use-specific assessment is more appropriate than broad averaging.

This also applies to modelling company responses. Companies do not choose between RMM upgrades, substitution, closure or relocation in an abstract model. They respond to technical feasibility, customer approval, OEM qualification, permit requirements, availability of alternatives, supplier capacity, economic margins and value-chain obligations. If the baseline does not include these factors, predicted company responses are not reliable.

For these reasons, CETS requests that Section 3.4.2.2 be revised to state clearly that:

- the baseline is based on a theoretical assumption that authorisation no longer applies;
- the socio-economic impacts of removing authorisation obligations have not been assessed;
- data collected under the authorisation regime cannot be assumed to represent a post-authorisation baseline without correction;
- the number of sites, companies, lines and exposed workers remains uncertain;
- the distribution of sites across use categories based on CfE response proportions is not sufficiently robust;
- the baseline should distinguish between job platers, specialised platers, captive OEM operations, Tier I suppliers, Tier II suppliers, repair providers and maintenance providers;
- the baseline should include up- and downstream value-chain mapping;
- market contraction, closures, relocation pressure and industrial restructuring should be included as sensitivity scenarios;
- central estimates derived from this baseline should be described as illustrative, not robust.

CETS therefore considers that the current baseline is not sufficiently reliable to support firm conclusions on proportionality. It may be used as a preliminary modelling assumption, but

not as a basis for determining that RO2, RO3, RAC's proposal or any stricter combination is proportionate or the most appropriate EU-wide measure. A corrected baseline should be developed before the cost-benefit and proportionality assessment is finalised.

QUESTION 18

In case you wish to comment on Section 3.4.2.2.1. 'Costs', please provide the comments here.

CETS welcomes SEAC's effort to review the Dossier Submitter's cost assessment and, in particular, to identify methodological weaknesses in the calculation of non-use costs. However, CETS considers that Section 3.4.2.2.1 still underestimates the real socio-economic costs of the proposed restriction options and overstates the robustness of the available evidence.

> *"**Impacts up and down the supply chain** were not accounted for. Also, the users of the salts (chromates) included in scope in addition to the Annex XIV substances and barium chromate may not have been recognised by the Dossier Submitter and made part of the CfEs. " page 76*

The key issue is that the cost assessment remains largely centred on the direct costs borne by Cr(VI) users, while the wider value-chain impacts of the restriction are not quantified. This is particularly problematic for UC2 and UC3, where a significant share of the sector is made of job platers and surface-treatment service providers. These companies do not normally own the articles treated; they receive parts and technical specifications from customers and are required to deliver defined surface properties, often under customer, OEM, qualification or sector-specific requirements. The Background Document itself recognises that job platers are comparable to toll manufacturers and generally have no influence on the technology specified to achieve the required functionality. Therefore, assessing their "producer surplus" does not capture the real socio-economic value at stake.

The value added of functional chrome plating is not limited to the margin of the plating shop. It is embedded in the continuity of downstream manufacturing, maintenance, repair, spare parts, hydraulic systems, machinery, automotive, aerospace, defence, energy, marine, food-contact, sanitary, mechanical engineering and other supply chains. The Background Document acknowledges that the total economic value added of Cr(VI) uses goes far beyond direct surplus and may be one or two orders of magnitude higher because of knock-on effects in industrial sectors. However, these impacts are not quantified in the cost assessment. SEAC also recognises elsewhere in the Draft Opinion that impacts up and down

the supply chain were not accounted for. This is not a minor uncertainty; it affects the proportionality assessment itself.

CETS therefore disagrees with any conclusion that the cost assessment covers all relevant economic impacts. It covers some direct first-order impacts on Cr(VI) users, but not the systemic costs caused by disruption of service providers, interruption of qualified supply chains, loss of repair capacity, loss of industrial capability, import dependency, requalification costs, delays, customer rejection, loss of technological sovereignty and security-of-supply risks.

A second concern is the baseline. The assessment relies on an assumed population of approximately 2,000 companies/sites, distributed across use categories on the basis of available responses. The Draft Opinion itself recognises that robust data on the total number of companies using Cr(VI) and exposed workers is not available. The Background Document also states that the exact number of companies operating in each use category is unknown. In such circumstances, central cost estimates should not be presented as robust. They should be clearly framed as illustrative estimates based on incomplete and partly non-verifiable data.

The economic scenario used in the assessment also appears insufficiently realistic. The market is not operating in a stable growth environment. The Background Document acknowledges that registered use volumes have dropped significantly since 2010. The broader industrial context includes plant closures, pressure on EU manufacturing, supply-chain disruptions, shortage of skilled technical personnel, energy and raw material cost pressure, and geopolitical uncertainty. Even where these elements are not quantified in the dossier, they should not be ignored. At minimum, SEAC should require sensitivity scenarios reflecting market contraction, reduced investment capacity and supply-chain stress rather than relying on central assumptions that appear to normalise future continuity.

CETS is also concerned by the way industry responses have been interpreted. Whenever companies report closure, relocation, loss of market, or inability to substitute, these responses are repeatedly treated as potentially strategic or exaggerated. At the same time, assumptions that reduce estimated costs are accepted with limited equivalent scrutiny. This

creates an asymmetry in the treatment of evidence. Strategic bias by industry is discussed, but there is no equivalent examination of whether the Dossier Submitter's assumptions, aggregation choices and revised calculations may strategically minimise the economic impacts of the restriction.

This is particularly important because the Calls for Evidence were conducted under tight timelines, with technically complex questionnaires and without sufficiently operational definitions for several critical concepts, including "compliance", "economic viability", "substitution", "closure", "continued use" and the role of respiratory protective equipment. The Appendix confirms that it is not possible to check the correctness of data submitted in the CfEs. SEAC further recognises the low participation in CfE2, including only 26 companies in total and 23 companies performing the truth-telling task, compared with an estimated population of approximately 2,000 companies. Under these conditions, it is not appropriate to treat industry responses as unreliable only where they indicate severe impacts, while using the same evidence base to support lower central cost estimates.

CETS also questions the treatment of substitution costs. SEAC relies partly on the observation that companies that have already substituted reported lower costs and that this may indicate that substitution costs are overestimated by companies that have not substituted. This is not a sound basis for generalisation. Companies that have already substituted are, by definition, likely to belong to market segments where substitution was technically possible, economically tolerable, accepted by customers, and compatible with their product portfolio. They are not representative of the remaining companies, which may operate in more technically demanding, lower-margin, highly qualified, or customer-constrained niches. In addition, the cost of substitution today is not necessarily comparable to historical substitution costs. Equipment availability, engineering capacity, skilled labour, qualification resources, customer testing capacity and financing conditions have materially changed. Past substituters may have occupied the easiest market niches; they cannot be used as a proxy for the future marginal cost of substitution across the remaining sector.

The same concern applies to the assumption that improvement of risk management measures is generally less costly than substitution. As a broad principle this may be true for some companies and some limit values, but it does not follow that continued operation under the restriction is economically viable. Continued use may require repeated

investments, additional monitoring, external consultancy, ventilation redesign, enclosure, wastewater and air-abatement upgrades, production downtime, layout changes, customer requalification, administrative burden, and continuous legal uncertainty. The relevant comparison should not be simply “RMMs are cheaper than substitution”; it should be whether the combined cost of continued compliant operation is financeable and operationally realistic for service providers, especially SMEs and job platers.

CETS also notes an unresolved inconsistency concerning RPE. In some parts of the assessment, RPE appears to be treated as a possible route to compliance and therefore as a factor potentially reducing costs. In other contexts, the ability to rely on RPE for demonstrating compliance with strict exposure limits is uncertain, because this depends on the hierarchy of occupational safety measures, task duration, national practice, assigned protection factors, actual use conditions and enforceability. RAC and SEAC appear to approach this issue differently. If RPE is not accepted as a robust basis for compliance, then compliance rates and abatement costs must be recalculated accordingly. If RPE is accepted, the restriction must clearly define how RPE-corrected exposures are to be measured, calculated, verified and enforced across Member States. Without this clarification, the cost assessment is not stable.

A further methodological weakness is the aggregation of UC3. UC3 includes very different industrial realities: decorative-functional plating, hard chrome plating, hydraulic applications, engineering components, repair and maintenance, qualified aerospace/defence applications, customer-specific applications, and parts for which alternatives may be technically possible in some cases but not in others. Aggregating these uses into one statistical category produces averages that may have little operational meaning. The availability, cost and feasibility of alternatives are application-specific. The Draft Opinion itself states that SEAC cannot conclude on the technical or economic feasibility of alternatives at use, use-category or general level. This is incompatible with drawing cost conclusions that rely on generic assumptions about substitution, closure and two years of profit loss.

This creates a further inconsistency. On the one hand, SEAC states that it is not possible to conclude on the availability, technical feasibility or economic feasibility of alternatives. On the other hand, cost calculations appear to assume that alternatives exist sufficiently to

justify reduced profit-loss periods, lower substitution cost assumptions or lower closure impacts. If alternatives cannot be concluded to be technically and economically feasible at the relevant use level, then they should not be used indirectly to reduce the estimated costs of non-use.

The treatment of benefits should also be made more symmetrical with the treatment of costs. SEAC revised cost estimates because some closure and substitution scenarios were considered unrealistic or insufficiently substantiated. CETS asks whether the same level of realism testing has been applied to benefits. The benefits assessment relies on WTP values, exposed population assumptions, dose-response relationships and baseline exposure assumptions. A simple stress test illustrates the sensitivity: considering the entire set of cancer cases across EU in just one year (approximately being 3 million cases) and applying the full WTP/VSL value to each person would generate figures in the range of approximately €14–20 trillion, i.e. around or above EU GDP. The example shows how sensitive the valuation framework is and why benefits must be stress-tested with the same critical discipline applied to industry cost data. SEAC itself recognises that benefit ranges do not reflect all sensitive parameters, including baseline exposure development over the 20-year period.

Finally, CETS considers that the conclusion of Section 3.4.2.2.1 should be revised. The present cost assessment is not sufficiently complete or granular to support a robust proportionality conclusion for UC2 and UC3. Before the restriction option is finalised, SEAC should require:

- a quantified value-chain impact assessment for job platers and their customers;
- disaggregation of UC3 into technically meaningful sub-uses;
- clear rules on whether and how RPE may be used to demonstrate compliance;
- a revised sensitivity analysis including market contraction, full company closure, supply-chain disruption and qualification costs;
- a symmetrical uncertainty analysis for benefits and costs;
- a separate assessment of companies that have already substituted versus companies that have not, without treating the former as representative of the latter;
- explicit recognition that producer surplus of service providers is not an adequate proxy for the socio-economic value of the treated articles and downstream industrial continuity.

For these reasons, CETS considers that the cost assessment in Section 3.4.2.2.1 should be qualified as incomplete and insufficiently robust, particularly for UC2 and UC3, and should not be used as the sole basis for concluding on proportionality.

QUESTION 19

In case you wish to comment on Section 3.4.2.2.2. 'Benefits', please provide the comments here.

CETS welcomes the objective of reducing exposure to hexavalent chromium and recognises that Cr(VI) substances are carcinogenic. However, CETS considers that Section 3.4.2.2.2 overstates the robustness and policy relevance of the estimated benefits. The issue is not whether reducing exposure to Cr(VI) is desirable. The issue is whether the quantified and monetised benefits presented in the Draft Opinion are sufficiently robust, attributable, measurable and balanced to support the proportionality conclusions.

The benefits assessment is based on **statistical cancer cases avoided**, not on observable or identifiable cancer cases. According to the Background Document, the expected number of avoided statistical cancer cases over 20 years is 64 under RO1, 195 under RO2 and 234 under RO3. This corresponds to 3.2, 9.8 and 11.7 statistical cancer cases avoided per year, respectively, across the whole EU/EEA and across an assumed population of approximately 2,000 Cr(VI)-using sites. These figures should be presented much more clearly in the SEAC opinion, alongside the monetised values. Expressing the benefits mainly in monetary terms risks obscuring the very small number of statistical cases on which the benefit assessment relies.

CETS also notes that these expected benefits are extremely small compared with the background burden of cancer in Europe. This does not mean that Cr(VI)-related risk is irrelevant. **It does mean, however, that the estimated benefit is not epidemiologically measurable with the methodology presented**. For example, lung cancer is a multifactorial disease strongly influenced by smoking, age, radon, air pollution and occupational co-exposures. Against such a large and complex background burden, a modelled benefit of

around 10 statistical cancer cases per year across the EU/EEA cannot realistically be verified or attributed through observed cancer incidence or mortality data.

This raises an important methodological issue: the Draft Opinion monetises expected statistical cases, but does not explain how the restriction's benefits would be monitored, validated or distinguished from background cancer trends. The benefit is therefore not a measurable public-health outcome in any operational sense. It is a modelled counterfactual result dependent on the assumptions selected for baseline exposure, dose-response, exposed population, release reduction, latency and valuation.

CETS considers that SEAC should make this limitation explicit. The benefits should be described as modelled statistical risk reductions rather than as concrete cancer cases that can be expected to be identified, measured or attributed to the restriction.

The uncertainty around the dose-response relationship is also material. The appendices acknowledge that new scientific evidence has questioned the low-dose linearity assumption implicit in the reference dose-response relationships used for Cr(VI), and that there is conflicting information concerning mode-of-action and dose-response. The Dossier Submitter also acknowledges that the resulting risks may be overestimated. This is particularly relevant because the restriction assessment extrapolates low-dose risk reductions from historical epidemiological datasets and applies them to current EU surface-treatment operations where exposure levels have already been substantially reduced under the authorisation regime and occupational safety legislation.

The baseline is another major driver of uncertainty. SEAC itself notes that measured exposure data provided in the CfEs suggest that baseline exposure may be lower than inferred from stated compliance with different limit values. If baseline exposure is lower, the exposure reduction, thus the health expected benefit, is also lower. This issue is not marginal: the estimated benefits are directly proportional to the assumed reduction in exposure.

CETS is also concerned that the treatment of latency is insufficient. The Draft Opinion recognises that the time between Cr(VI) exposure and cancer development was not accounted for. This is a significant omission in a 20-year appraisal period. If many cancer

effects occur after long latency periods, the timing, discounting and attribution of benefits should be treated explicitly rather than assumed implicitly.

The assessment of benefits to the general population is particularly uncertain. It depends on assumptions about emissions, dispersion, exposed population and environmental pathways. The assumed population living in the vicinity of emitting sites has a direct multiplicative effect on benefits. Yet the assessment does not appear to rely on site-specific dispersion modelling, measured environmental exposure data or biomonitoring evidence capable of validating the estimated risk reduction. The resulting figures should therefore be treated as scenario outputs rather than robust estimates.

A further concern is the treatment of benefits arising from non-use, closure or worker displacement. If a company closes, relocates or discontinues Cr(VI)-related operations, reduced worker exposure is counted as a benefit. However, this is not equivalent to a benefit obtained through continued operation under improved risk management measures. The Dossier Submitter itself notes that unemployment may entail substantial health costs that, in theory, would have to be deducted from the benefits to workers made redundant. These deductions are not properly integrated into the benefit assessment. Benefits from improved working conditions should therefore be separated from benefits arising from closure, redundancy or industrial displacement.

The same applies to relocation outside the EU. If production is moved to third countries where Cr(VI) continues to be used under less stringent worker protection or environmental standards, the EU benefit may be partly or fully offset by a higher global cancer burden. The Background Document recognises this “pollution haven” risk. It should therefore not be acceptable to present EU exposure reduction as a net benefit without assessing whether the risk is eliminated or merely exported.

Finally, CETS considers that the benefit assessment should be subjected to the same level of critical scrutiny that SEAC applied to costs. SEAC revised cost estimates where it considered closure or non-use assumptions insufficiently robust. A comparable stress test should be applied to benefits, including lower baseline exposure, shorter or longer latency,

lower exposed population, alternative dose-response functions, current exposure levels under the authorisation baseline, and relocation/leakage scenarios.

For these reasons, CETS considers that Section 3.4.2.2.2 should be revised. The final opinion should:

- report the number of statistical cancer cases avoided, not only monetised values;
- clarify that these are modelled statistical cases, not measurable or attributable observed cases;
- reconcile inconsistencies between the monetary benefit figures in the Background Document and the SEAC Draft Opinion;
- distinguish benefits from improved risk management from benefits caused by closure, redundancy or relocation;
- explicitly address latency and attribution in a high-background cancer context;
- apply a symmetrical uncertainty analysis to benefits and costs;
- assess whether EU benefits are offset by risk transfer to third countries.

CETS therefore considers that the benefits assessment, as currently presented, is not sufficiently robust to support strong proportionality conclusions, particularly for options where the estimated benefits are small in observable public-health terms but the industrial and supply-chain impacts are potentially severe.

QUESTION 20

In case you wish to comment on Section 3.4.2.2.3. 'Other relevant impacts', please provide the comments here.

CETS welcomes SEAC's recognition that the restriction may have impacts beyond direct compliance costs and monetised health benefits, including impacts on availability of components, technological sovereignty, security of supply, SMEs and climate. However, CETS considers that Section 3.4.2.2.3 remains too generic, too qualitative and insufficiently integrated into the proportionality assessment.

*"**Impacts up and down the supply chain** were not accounted for. Also, the users of the salts (chromates) included in scope in addition to the Annex XIV substances and barium chromate may not have been recognised by the Dossier Submitter and made part of the CfEs. " page 76*

First, the assessment of SMEs is incomplete. The relevant issue is not only whether SMEs, as a statistical category, respond differently from larger companies in the CfEs. The relevant market structure is more specific: a significant part of the chrome-plating sector consists of job platers, many of which are SMEs or micro-enterprises. These companies operate as service providers within complex value chains. They do not normally control the design of the component, the technical specification, the customer qualification requirements, the acceptance of alternatives, or the downstream use of the treated article. Treating them simply as "SMEs" misses the core structural vulnerability of the sector. This is heavily affecting the profit gained by the use of the substance, and the clear indication that no impact up and down the supply chain has been taken into account make the entire calculation of costs incomplete.

This is particularly important for UC2 and UC3. A job plater may serve several unrelated industrial sectors, and the loss of one plating capability can affect multiple downstream value chains at the same time. The impact is therefore not limited to the turnover or producer surplus of the plating company. It includes loss of qualified supply capacity, loss of repair and maintenance capacity, customer requalification costs, disruption of spare-parts

availability, and potential loss of EU industrial know-how. These effects are not captured by the current SME test.

SEAC states that available evidence does not indicate that SMEs will be overly affected, but also acknowledges that SMEs have lower financial capacities to invest in risk management measures and may therefore find it difficult to comply with low exposure limits.

CETS considers that this conclusion should be revised. Lower financial capacity is precisely the mechanism through which disproportionate impacts arise, especially where compliance requires engineering controls, enclosure, automation, ventilation redesign, wastewater or air-abatement upgrades, analytical monitoring and production downtime. For job platers, these costs cannot always be passed on to customers because the service market is price-sensitive and exposed to non-EU competition.

Second, CETS considers that the implications for European technological sovereignty and security of supply are materially underestimated. SEAC recognises that stricter restriction options or bans may negatively affect availability of components, technological sovereignty, open strategic autonomy and security of supply, especially where components manufactured without Cr(VI) cannot meet the required quality. SEAC also notes that sourcing from outside the EU/EEA could become an option because imports are not covered by the proposed restriction. This should not be treated as a neutral market adjustment.

Reliance on non-EU suppliers for functional chrome-plated components, treated articles, repair operations and spare parts creates a structural dependency. This is particularly problematic for sectors such as aerospace, defence, transport, energy, machinery, hydraulic systems, industrial maintenance and safety-critical components. In these sectors, the ability to manufacture, repair, requalify and maintain components within Europe is itself a strategic capability. A restriction that accelerates closure or relocation of EU service providers risks undermining the very industrial resilience and open strategic autonomy that EU policy seeks to protect.

CETS therefore considers that “other relevant impacts” should not be limited to a qualitative statement that negative impacts may occur. SEAC should require a use-specific and sector-

specific assessment of which components, repair operations and supply chains are at risk of becoming dependent on non-EU providers. At minimum, UC3, UC4 and UC5 should be assessed separately for their role in transport, defence, aerospace, machinery, energy, maintenance and spare-parts supply.

Third, CETS considers that the interaction with other EU regulatory processes is insufficiently addressed. The Cr(VI) restriction cannot be assessed in isolation from the wider chemical and industrial regulatory framework. One example is PFAS. The Background Document recognises that many sites use mist suppressants during electroplating, that some mist suppressants contain PFAS, that the proportion of PFAS-containing mist suppressants is unknown, and that alternatives to PFAS-containing mist suppressants and wetting agents used in chrome plating have been assessed in the PFHxS and universal PFAS restriction processes. This is directly relevant to the Cr(VI) restriction.

If compliance with stricter Cr(VI) exposure limits depends partly on effective risk management measures, and if some of these measures historically included PFAS-containing mist suppressants, then the future regulatory availability of these tools is not a secondary issue. It affects technical feasibility, compliance costs, achievable exposure levels and timing. The assessment should therefore consider whether companies are being required to meet stricter Cr(VI) limits while some of the tools used to reduce Cr(VI) mist formation are simultaneously subject to restriction, substitution pressure or regulatory uncertainty.

This is not an argument for maintaining PFAS-containing products. It is an argument for regulatory coherence. Companies need a technically feasible and legally stable pathway to compliance. If one regulatory process assumes that exposure can be reduced through certain RMMs, while another regulatory process restricts or destabilises the availability of those RMMs, the combined impact must be assessed.

The same applies to alternatives. The dossier itself recognises that most, if not all, identified alternatives to Cr(VI) substances use substances that are not benign, and that ignoring risk trade-offs associated with regrettable substitution may overestimate the net benefit of reducing Cr(VI) exposure. This is a critical point. Other relevant impacts should therefore

include the cumulative burden and risk trade-offs arising from substitution to Cr(III)-based processes, nickel underlayers, boric acid-containing electrolytes, additional process steps, increased energy consumption, additional wastewater treatment and new regulatory liabilities.

Fourth, CETS considers that relocation impacts are treated too narrowly. SEAC recognises that increased imports may negatively affect climate due to increased transportation of goods, but the magnitude was not assessed. The Background Document also recognises that quantifying carbon emissions associated with increased imports of Cr(VI)-treated articles is complex and therefore no quantitative assessment was presented. This means that a potentially important impact was acknowledged but not incorporated in a robust way.

The climate impact should not be limited to freight transport. It should also include production in jurisdictions with different energy mixes, additional logistics, duplicated qualification activities, scrapping of non-compliant products, loss of local maintenance capacity, and the need to ship components or entire assemblies outside Europe for repair. For aircraft, machinery, transport and other high-value industrial systems, the relocation of maintenance capability may have impacts far beyond simple transport emissions.

Finally, CETS considers that the section should distinguish clearly between impacts that are uncertain because they are unlikely and impacts that are uncertain because they were not properly quantified. The current wording risks treating lack of quantitative evidence as lack of material impact. That is not appropriate. SEAC itself states that only limited information is available and that the assessment is mainly qualitative. This limitation should lead to caution in drawing proportionality conclusions, not to the downgrading of impacts that may be strategically significant.

For these reasons, CETS requests SEAC to revise Section 3.4.2.2.3 by:

- clearly describing that part of the SMEs are SME job platers operating as service providers in customer-controlled value chains;
- assessing UC2 and UC3 job-plating market structure properly and not just describing as generic SME impacts;

- quantifying, or at least systematically mapping, supply-chain impacts on downstream users;
- assessing risks to EU technological sovereignty, open strategic autonomy and security of supply by sector and use category;
- considering import dependency as a negative strategic impact, not as a neutral market response;
- integrating the interaction with the PFAS restriction and other EU regulatory processes affecting RMMs and alternatives;
- assessing cumulative regulatory burden and regrettable-substitution risks;
- treating unquantified climate, relocation and maintenance impacts as material uncertainties in the proportionality assessment.

CETS therefore considers that the current assessment of "other relevant impacts" is incomplete and insufficiently robust, particularly for UC2, UC3, UC4 and UC5. These impacts should be given greater weight before any conclusion is reached on the appropriateness and proportionality of the proposed restriction.

QUESTION 21

In case you wish to comment on Section 3.4.2.2.4 'Proportionality', please provide the comments here.

CETS considers that the proportionality assessment in Section 3.4.2.2.4 is not robust, lacking the base set of information of costs in the supply chain. This major non considered element make the entire set of calculation lacking the base minimum information. The conclusion on proportionality depends on cost estimates that are likely underestimated, benefit estimates that are highly uncertain and potentially overestimated, and assumptions on substitution, compliance and transition periods that are not adequately supported by the evidence available.

SEAC itself recognises that there are no robust ranges of costs and benefits available and that it cannot measure the overall impact of the respective uncertainties on the level of costs and benefits. SEAC further recognises that the non-use rate is a key uncertainty, that small changes in non-use have significant effects on costs, and that assumptions on CfE bias and

RPE use have a considerable impact on proportionality. These are **not marginal uncertainties**. **They go to the core of the proportionality conclusion.**

Against this background, CETS does not consider it appropriate to conclude that RO2 is "likely proportionate" merely because costs and benefits are said to fall within a similar range. The figures in Table 11 are not robust enough to support such a conclusion.

For RO2, SEAC reports total costs of approximately €1.59 billion and benefits of approximately €1.08 billion over 20 years. This is already a negative balance before considering the unquantified supply-chain impacts, job-plater structure, relocation, loss of EU industrial capacity, customer requalification, import dependency and strategic autonomy effects.

For RO3, the imbalance is much clearer, with costs of approximately €4.72 billion and benefits of approximately €1.30 billion. These figures should lead to a much more cautious conclusion, not to the suggestion that proportionality can be recovered through longer transition period.

CETS also disagrees with the idea that a longer transition period can, by itself, make a restriction option proportionate where substitution has not been shown to be technically and economically feasible. **Time is relevant only if there is a credible substitution pathway**. It is not a substitute for technical feasibility. Where companies do not substitute today, this is often not due to lack of willingness, but to the absence of a technically qualified, customer-accepted, economically feasible and regulatory-stable alternative. Extending the transition period may postpone the problem, but it does not solve it. In such cases, the likely outcome is not innovation but closure, relocation or loss of EU supply capacity.

Another issue raising from this is the lack of any safeguard mechanism (available with the review report in the AfA process, while not available nor cited here).

This is particularly important because SEAC concludes elsewhere that the information provided in the Background Document does not allow for an evaluation of the availability, technical feasibility or economic feasibility of alternatives, neither at general level nor at use

or use-category level. SEAC also states that for more demanding applications the development of alternatives appears to be at a relatively early stage and that information on market share and performance levels is missing. A proportionality conclusion cannot rely on substitution as an implicit future response if the same opinion recognises that the feasibility and availability of alternatives cannot be concluded.

CETS therefore considers misleading the formulation that RO3 or RAC's proposal could be considered proportionate with a longer transition period if distributional impacts or incentives for substitution are given more weight.

This creates the impression that the only missing element is time. That is not correct. The missing element is evidence that the required technical transition is possible for the relevant applications, sectors and customer specifications. A transition period is not a technical solution.

CETS also remains concerned by the asymmetric treatment of industry evidence. Industry responses indicating closure, relocation, non-use, lack of alternatives or inability to comply are repeatedly treated as potentially biased or exaggerated. However, assumptions reducing costs or supporting feasibility are not subjected to the same degree of scepticism. This creates an evidentiary imbalance. If industry responses are considered uncertain, they should not be selectively used to support compliance and proportionality while being discounted when they indicate severe impacts.

The same issue arises in the treatment of "producer surplus" and distributional impacts. The assessment appears to compare health benefits for workers with costs borne by companies or capital owners. This framing is incomplete for job platers. Job platers are service providers in customer-controlled value chains. They do not normally determine the technical specification, the design of the component, the qualification requirements or the acceptance of alternatives. The true economic beneficiaries of the treated articles are often downstream OEMs, operators, repair chains and end-use sectors, not the plating shop itself.

As a result, using the producer surplus of job platers as the main proxy for the economic value at stake distorts the proportionality assessment. The relevant value is not only the margin of

the surface-treatment company. It is the value of the downstream industrial function enabled by the coating: continuity of manufacturing, repair, spare parts, hydraulic systems, aerospace and defence applications, machinery, transport, energy and other critical value chains. The proportionality assessment should therefore be transposed to the value-chain level, not limited to the direct service provider.

CETS also considers that benefits are not sufficiently robust to counterbalance these omissions. The benefits are modelled statistical cancer cases avoided, not measurable or attributable cases. They depend on assumptions on baseline exposure, dose-response, exposed population, latency and valuation. SEAC acknowledges uncertainties in the benefits assessment, yet these uncertainties do not appear to have been treated with the same corrective intensity applied to industry cost data. If costs are revised downward because some closure scenarios are considered unrealistic, benefits should likewise be stress-tested downward where baseline exposure may be lower, dose-response may overestimate low-dose risks, latency is not accounted for, or risk is merely relocated outside the EU.

Finally, the language used in the proportionality section should be revised. Expressions such as “likely proportionate”, “could be considered proportionate” or “likely not proportionate in the short term” are not sufficiently precise where the underlying evidence is qualitative, uncertain, based on expert judgement, incomplete substitution data and non-robust cost-benefit ranges.

Such language risks overstating the evidential basis for regulatory conclusions.

For these reasons, CETS requests SEAC to revise Section 3.4.2.2.4 by:

- clearly stating that the proportionality assessment is **highly uncertain**;
- avoiding the conclusion that RO2 is likely proportionate unless value-chain costs and downstream impacts are quantified;
- rejecting the assumption that a longer transition period can compensate for the absence of technically and economically feasible alternatives;
- treating industry evidence symmetrically, without discounting closure and relocation responses while relying on the same evidence base for compliance assumptions;

- reassessing proportionality at value-chain level, especially for job platers in UC2 and UC3;
- separating benefits from continued compliant operation from benefits caused by closure, redundancy or relocation;
- stress-testing benefits with the same rigor applied to costs;
- avoiding the use of conditional proportionality conclusions where the factual basis is not sufficiently demonstrated.

CETS therefore considers that the current proportionality assessment does not provide a sufficiently reliable basis for concluding that RO2, RO3, RAC's proposal or any stricter option is proportionate for UC2 and UC3 without a more granular, use-specific and value-chain-based assessment.

In the absence of a complete and quantified assessment of impacts up and down the value chain, no robust conclusion on proportionality can be drawn. A proportionality assessment limited to the direct Cr(VI) user necessarily underestimates the socio-economic consequences of the restriction, because it excludes downstream impacts on OEMs, Tier I and Tier II suppliers, repair and maintenance chains, component availability, security of supply and EU industrial capability. Therefore, any conclusion that the proposed restriction option is proportionate must be considered premature and methodologically unsupported.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 22

In case you wish to comment on Section 3.4.2.3. 'Practicality, including enforceability', please provide the comments here.

CETS considers that the assessment of practicality, implementability and enforceability in Section 3.4.2.3 is too optimistic and should be substantially revised. The conclusion that RO1 and RO2 are "generally practical" does not sufficiently reflect the technical diversity of Cr(VI) uses, the maturity of risk management measures already implemented by industry, the limitations of further abatement, the uncertainty of measurement methods and the unrealistic nature of the proposed 18-month transition period.

First, implementability cannot be assessed as a theoretical possibility to "upgrade RMMs". Over the last years, companies using Cr(VI) substances have already implemented significant risk management measures under REACH authorisation, occupational safety legislation, environmental permits and customer requirements. SEAC itself acknowledges that typical installations are expected to be covered by existing authorisations under which RMMs are already established, and that installations may already be equipped with appropriate exhaust ventilation systems. This is a crucial point. The remaining improvement potential is not uniform and cannot be assumed to be available to the same extent across all use categories, technologies and sites.

The Appendix also shows that the presence of different operational conditions and RMMs had no clear systematic effect on exposure, probably because different sites and plants, even where performing the same uses, are very different in terms of factors influencing exposure. This confirms that RMM effectiveness is site-specific and process-specific, not a generic theoretical parameter.

For example, automation may be theoretically possible in some processes, but it is practically meaningful only where there is sufficient repeatability, production volume, standardised geometry and stable process conditions. It is not a realistic solution for low-volume, repair, maintenance, bespoke, manual or skill-dependent operations where parts vary significantly and where operator expertise is essential. Treating automation as a general route to compliance risks overstating implementability and underestimating costs.

Second, the assessment does not sufficiently distinguish between technologies and emission mechanisms. The practicality of reducing Cr(VI) emissions to water is not the same as the practicality of reducing Cr(VI) emissions to air. For water, many installations already operate through a sequence of concentrated baths, drag-out reduction, rinsing stages, wastewater treatment and concentration-reduction mechanisms. In many cases, technical and economic feasibility can be assessed through existing treatment steps and discharge control. For air, however, the technical situation is different. Air emissions depend on process temperature, current density, bath chemistry, mist formation, aerosol generation, ventilation design, capture efficiency, enclosure feasibility, surface area, tank configuration and operator tasks. Processes at elevated temperature and high current density cannot be treated in the same way as processes operating at or near room temperature with low current intensity.

CETS therefore considers that the practicality assessment should not rely mainly on statistical emission data. It should be based on a technical distinction between process types, emission routes and abatement mechanisms. A limit value may appear practical in aggregated data while being impractical for specific technologies or site configurations.

Third, CETS welcomes the fact that SEAC appears to recognise that a restriction design that simply pushes whole sectors towards substitution may not be the correct route where substitution is not technically or economically demonstrated. This is important. SEAC already states that, for options where substitution would be a more relevant response, the analysis of alternatives provides only limited information for a use-specific impact assessment and does not give a sufficiently clear understanding of substitution feasibility or economic impacts. This should be reflected much more clearly in the practicality section. A measure is not practical merely because it is legally simple to impose. It is practical only if companies have a technically feasible, enforceable and economically realistic route to compliance.

Fourth, harmonisation must not be treated as an optional improvement. It is a prerequisite for enforceability and a level playing field. SEAC notes that stakeholders requested harmonised enforcement practices and that the Forum proposed specifying how measurements should be carried out. SEAC also recognises that introducing REACH limit

values in parallel with OSH rules may create confusion and that national authorities highlighted the risk of duplicating worker protection provisions.

CETS considers that the final restriction cannot leave key compliance concepts to diverging Member State interpretation. If different authorities interpret “site-specific”, “strict segregation”, “representative monitoring”, “annual emissions”, “RPE-adjusted compliance”, “any salt/any chromate”, or “typical exposure scenario” differently, the restriction will not be enforceable in a consistent way.

It will create another layer of regulatory uncertainty rather than harmonisation.

Fifth, limit values and measurement requirements must be technically meaningful. The purpose of monitoring should be to verify real compliance, not to create artificial complexity and cost. Occupational exposure limits expressed as 8-hour TWA values must be measurable through sampling strategies that are feasible within meaningful working patterns. It is not reasonable to design a system where companies must perform disproportionate or technically artificial monitoring simply to reach analytical quantification limits.

The same applies to environmental monitoring. The Annex XV report acknowledges that lower LoQs require more care in sampling, storage and analytical procedures, and that monitoring costs vary widely, with workplace or environmental monitoring campaigns costing in the order of €5,000 to €15,000 or more depending on complexity. Where current environmental permits already ensure control of air emissions, additional Cr(VI)-specific monitoring should be proportionate, risk-based and aligned with existing permit monitoring, not duplicative. Otherwise, the restriction risks becoming artificially costly through compliance formalities rather than real risk reduction.

Sixth, the proposed 18-month transition period is not realistic. SEAC itself notes that a longer transition period may be needed because production lines may require modification, equipment and service providers may be limited, approvals by authorities may be necessary, analytical methods and service providers for low limits may be limited, and supply chains

need time to map substances. SEAC also notes that the Forum pointed out that the 18-month period does not consider possible licensing procedures, for example for IED installations.

This is particularly important when compared with other EU industrial regulatory frameworks. Under the Industrial Emissions Directive framework, BAT conclusions are the basis for permit conditions by Member State permitting authorities, and BAT/BREF implementation is embedded in a structured permitting system rather than imposed as an 18-month blanket deadline. The IED/BREF approach recognises that industrial modifications require assessment, permitting, engineering, investment planning and case-by-case implementation (more than 48 months). A uniform 18-month transition period for both simple and complex Cr(VI) installations is therefore not reasonable unless a credible path toward compliance or substitution is not available.

Seventh, CETS is concerned by the repeated treatment of industry technical evidence as insufficiently clear or non-verifiable. SEAC states that it is not clear how extensive required modifications would have to be and requests more information on equipment, service providers, transformation steps and approval timelines. CETS understands the need for evidence, but this must be balanced against the fact that the consultation process has repeatedly asked industry to provide highly technical, site-specific and commercially sensitive information under tight deadlines and within constrained formats. It is not appropriate to use the resulting incompleteness as a basis for concluding that the restriction is practical.

The correct conclusion should be the opposite: where SEAC does not have sufficient information to make a firm conclusion on whether upgrading RMMs within 18 months is feasible, SEAC should not conclude that the restriction is generally practical. It should conclude that practicality remains insufficiently demonstrated.

Eighth, CETS disagrees with the argument that a longer transition period would extend a period of less strict regulation too much. This argument ignores the reality of the current authorisation landscape. The existing authorisation system, including pending applications and delayed decisions, has already created regulatory uncertainty across Europe. The Commission mandate itself recognises that the number of applications has exceeded

expectations, that the workload has caused delays, and that applicants waiting for decisions are negatively affected, including in relation to the level playing field.

In this context, the solution cannot be to impose an unrealistic transition period while leaving companies without clear, stable and harmonised compliance rules. A properly structured transition period with mandatory transitional RMMs, monitoring obligations and clear legal guidance would not weaken protection. It would improve legal certainty and implementation quality. By contrast, a short and unrealistic deadline may lead to rushed investments, inconsistent enforcement, closure, relocation, or non-optimal technical solutions.

For these reasons, CETS requests SEAC to revise Section 3.4.2.3 by:

- recognising that many companies have already implemented substantial RMMs and that remaining improvement potential is site-specific and limited;
- distinguishing between repetitive automated processes and manual, variable, repair or low-volume skilled operations;
- treating harmonisation of enforcement and measurement rules as a prerequisite, not as guidance to be developed later;
- clarifying the role of RPE/PPE in compliance before any conclusion on enforceability is drawn;
- ensuring that monitoring requirements are technically meaningful, proportionate and aligned with existing OSH and environmental permit obligations;
- replacing the uniform 18-month transition period with a longer, staged and technically justified transition period, differentiated by LV/ELV stringency, use category and need for permitting;
- acknowledging that, where SEAC lacks information on equipment, service providers, approval timelines and installation modifications, practicality is not demonstrated.

CETS therefore considers that RO2 cannot be concluded to be generally practical unless these issues are resolved in the legal text itself or in binding, harmonised implementation rules available before the restriction applies. For RO3 and any stricter option, practicality and enforceability are not demonstrated.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent

to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 23

In case you wish to comment on Section 3.4.2.4. 'Monitorability', please provide the comments here.

CETS considers that the conclusion that RO1 and RO2 are monitorable is premature and insufficiently substantiated. The main issue is not whether analytical methods for Cr(VI) exist in abstract terms. The issue is whether the restriction establishes a clear, harmonised, technically feasible and legally enforceable methodology for collecting, interpreting and using monitoring data across all Member States, sectors, processes and site configurations.

At present, this is not demonstrated.

SEAC states that Cr(VI) compounds have been regulated for a long time and therefore expects companies and enforcement authorities to have experience in producing, reporting and interpreting monitoring data. CETS does not consider this sufficient. Experience under occupational safety legislation, environmental permits and authorisation decisions does not automatically translate into a uniform monitoring system for a REACH restriction based on specific LVs and annual ELVs. The Draft Opinion itself recognises that careful sampling is needed to distinguish Cr(VI) from other chromium species, that lower Cr(VI) contents require more careful sampling, and that this increases analytical costs. It also recognises that the use of in-scope and out-of-scope Cr(VI) substances would complicate monitoring.

The underlying data used in the dossier confirms the problem. The Appendix shows that the datasets used for exposure assessment were not generated under a single harmonised protocol. CfE data, CTACSub2 data and DU notification data were collected for different purposes and contain different information. In the CfE dataset, sampling method was only "sometimes" reported, measurement duration was not reported, and LoQ was not available

for all data. In DU notification data, site identification was not available for the majority of data and different templates were used. This demonstrates that monitoring practice is not sufficiently standardised to support a restriction that depends on strict numerical compliance values.

CETS is particularly concerned by the treatment of occupational exposure monitoring. The Appendix states that EN 689:2019 could be followed, and that companies and national enforcement authorities are expected to be familiar with it. However, the same section recognises that EN 689:2019 does not consider the use and effectiveness of RPE in testing compliance with the limit value. This is a critical unresolved issue. If compliance is assessed without RPE, then the compliance rates and economic impacts must be recalculated accordingly. If compliance is assessed with RPE correction, then the restriction must define how RPE use, assigned protection factors, fit, maintenance, task duration and actual wearing time are verified and enforced. Without this clarification, the LV is not monitorable in a legally robust way.

The duration and representativeness of measurements must also be addressed explicitly. Occupational LVs are expressed as 8-hour TWA values. Monitoring must therefore be possible within meaningful working patterns and representative task durations. It would not be technically or legally reasonable to require sampling campaigns that extend beyond the actual duration of the task, or beyond a normal shift, simply to obtain a measurable value above the analytical quantification limit. A monitoring system that requires artificially long sampling periods in order to obtain usable data is not a practical compliance system. It risks measuring an analytical artefact rather than real occupational exposure.

This point is particularly important for job platers and surface-treatment companies where Cr(VI)-relevant tasks may be intermittent, variable, manual, short-duration, customer-specific or batch-based. A single 8-hour measurement strategy may not adequately represent exposure in such cases. Conversely, forcing all companies into the same monitoring pattern may create disproportionate costs and inconsistent compliance outcomes.

The environmental monitoring framework is also not sufficiently defined. The Appendix states that the proposed ELVs are expressed as annual release rates and that the release rate can be calculated by combining measured concentration with air or water flowrate. However, it also states that the actual formula will depend on the release pattern from the site, batch versus continuous operation, the number of sampling points and the number of monitoring campaigns performed over the year. These are not minor implementation details. They determine whether a site is compliant or non-compliant.

For this reason, CETS considers that the restriction cannot be considered monitorable until the legal text, or binding harmonised guidance available before entry into application, defines at least:

- the required sampling strategy for workplace air;
- how 8-hour TWA values are to be determined for intermittent, short-duration or batch tasks;
- whether and how RPE may be considered;
- how values below LoQ are to be treated;
- minimum analytical performance requirements;
- how Cr(VI) is to be distinguished from total chromium and other chromium species;
- how annual air and water release rates are to be calculated;
- how many sampling campaigns are required per year;
- how batch and continuous emissions are to be treated;
- how multiple emission points at the same site are to be aggregated;
- how monitoring data are to be reported and retained;
- how Member States are expected to enforce the same methodology.

CETS also notes that SEAC reports that the Annex XV Dossier did not specify who should bear the monitoring burden. The Forum highlighted that having measurements organised by enforcement authorities would be nearly unfeasible, would have an exponential impact on enforcement costs, and that air sampling is not feasible for national enforcement authorities. This is a major monitorability concern. If monitoring is effectively delegated to operators, the restriction must clearly define operator obligations, accreditation requirements, reporting formats, auditability and consequences of disputed measurements. If monitoring is

expected from authorities, the necessary enforcement resources and technical capacity must be demonstrated. At present neither route is sufficiently defined.

CETS further considers that the cost of monitoring is underestimated as a practical burden. SEAC notes that a comprehensive workplace air monitoring campaign costs between €5,000 and €15,000, and that additional costs may arise from the need to use methods with lower limits of quantification. For SMEs and job platers operating multiple tanks, emission points, tasks, shifts and customer-specific processes, repeated monitoring may become a structural cost, not a marginal administrative cost. This cost is particularly relevant where the company is already compliant with existing occupational and environmental legislation and where additional monitoring does not deliver additional risk reduction but only demonstrates formal compliance with a new REACH layer.

CETS therefore disagrees with the statement that monitoring should be straightforward. It may be analytically possible in controlled conditions, but it is not yet shown to be operationally straightforward, harmonised or enforceable across the actual industrial landscape.

For these reasons, CETS requests SEAC to revise Section 3.4.2.4 by clearly stating that monitorability remains conditional on the prior adoption of harmonised EU-level monitoring rules. RO1 and RO2 should not be considered monitorable unless the legal text or binding implementation guidance defines the sampling strategy, measurement duration, LoQ treatment, RPE treatment, environmental release calculation and reporting obligations in a way that is technically feasible for real industrial operations.

CETS also considers that RO3 and any stricter option are not monitorable in the short term, given SEAC's own recognition that the lack of analytical methods and services capable of monitoring stricter limit values may challenge monitorability. More generally, any LV or ELV that can only be verified through disproportionate, artificially long or non-representative measurements should not be considered monitorable for the purposes of a REACH restriction.

QUESTION 24

In case you wish to comment on Section 3.4.3. 'Conclusion whether the suggested restriction is the most appropriate EU-wide measure', please provide the comments here.

CETS considers that Section 3.4.3 does not provide a sufficiently robust basis to conclude that the proposed restriction, as currently designed, is the most appropriate EU-wide measure.

CETS fully agrees that any regulatory measure for Cr(VI) must be genuinely Union-wide, harmonised and consistently enforceable. Whether the chosen instrument is restriction, authorisation, OSH legislation, the CMRD framework, or a combination of instruments, the objective must be the same: a common level of worker and environmental protection across the EU, without divergent Member State implementation, without legal fragmentation and without distortion of the internal market.

However, this is precisely where the current conclusion is weak. SEAC itself states that other risk management options besides restriction, including authorisation or combinations of different measures, were not sufficiently covered by the assessment to allow SEAC to come to an overall conclusion. SEAC also states that it is unable to conclude which of the assessed options is the most appropriate, because the identified uncertainties, especially those related to costs, prevent a firm conclusion.

This limitation should be decisive. A conclusion that the suggested restriction is the most appropriate EU-wide measure cannot be derived from an assessment that expressly did not compare the restriction with authorisation or with combined regulatory approaches and base the entire evaluation over a complete lack of information on the cost up and down the supply chain.

Providing the decision-maker with a modular menu of possible combinations of limit values and emission limit values does not resolve this gap. A range of possible combinations is not the same as a scientifically demonstrated conclusion on the most appropriate EU-wide measure.

CETS is particularly concerned that the shift from authorisation to restriction is treated as if it were mainly an implementation issue. It is not. The change of paradigm has substantive legal and practical consequences. Under authorisation, continued use is linked to review periods, substitution analysis, specific conditions, review reports and the possibility of revisiting the authorisation where alternatives are not yet technically and economically feasible. A restriction with fixed dates and fixed limit values does not provide the same safeguard. Once a deadline is set, there is no equivalent mechanism allowing a user to demonstrate, case by case, that no suitable alternative exists and that continued use under strict risk management remains necessary.

This is critical because SEAC itself recognises that the available information does not allow a robust conclusion on the technical and economic feasibility of alternatives at general level, use-category level or use level. The absence of credible and demonstrated alternatives makes it impossible to define a fixed deadline as if substitution were merely a matter of time. In many cases, companies have not failed to substitute because they are unwilling. They have not substituted because the alternative is not technically qualified, not customer-accepted, not economically feasible, not available at industrial scale, or not stable from a regulatory perspective.

A longer transition period does not solve this. It only postpones the point at which closure, relocation or loss of European supply capability becomes unavoidable for those uses for which no suitable alternative exists. A deadline without a safeguard mechanism is not a substitution strategy; it is an industrial exit mechanism.

CETS also considers that the justification for the change from authorisation to restriction is not sufficiently linked to improved worker protection. The Background Document acknowledges that authorisation has significantly reduced risks associated with Cr(VI) substances, but that the process has been slower and more resource-intensive than anticipated and has created challenges for regulators and companies. The Commission mandate similarly refers to the number of authorisation applications exceeding expectations and to workload and delays in opinion-making and decision-making.

This suggests that the restriction is being used to solve a structural administrative problem in the authorisation system. CETS does not consider this a sufficient basis for concluding that the restriction is the most appropriate risk management measure from a worker-protection and socio-economic perspective. Administrative efficiency is relevant, but it cannot replace the requirement to demonstrate effectiveness, practicality, monitorability and proportionality.

The conclusion is further weakened by the fact that the socio-economic impacts of removing authorisation obligations were not assessed in the Background Document. The Dossier Submitter expressly states that the assessment assumes, for methodological reasons, that authorisation obligations no longer apply, while also stating that this is purely theoretical and that the report does not assess the socio-economic impacts of removing the authorisation obligations. This is another a fundamental gap. The measure being evaluated is not simply a restriction; it is a replacement of one regulatory regime by another. The impacts of that replacement should be assessed directly.

CETS therefore disagrees with any conclusion that RO1 or RO2 can be considered the most appropriate EU-wide measure on the basis of the current assessment. At most, SEAC can conclude that certain restriction options may be possible regulatory designs under the assumptions used. It cannot conclude that they are the most appropriate EU-wide measure when:

- authorisation and combined RMO approaches were not properly assessed;
- the socio-economic impact of removing authorisation was not assessed;
- alternatives are not demonstrated as technically and economically feasible at use level;
- costs are incomplete and value-chain impacts are not quantified;
- benefits are modelled and highly uncertain;
- practical implementation, monitoring and enforcement remain unresolved;
- fixed deadlines lack a case-by-case safeguard mechanism.

For these reasons, CETS requests SEAC to revise Section 3.4.3 and clearly state that the current evidence does not support a firm conclusion that the suggested restriction is the most appropriate EU-wide measure. The final opinion should either require a full comparative

assessment of restriction, authorisation, OSH/CMRD and combined approaches, or limit its conclusion to the narrower statement that the assessed restriction options are possible options within the political mandate given, but not demonstrated to be the most appropriate EU-wide measure overall.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 25

In case you wish to comment on Section 3.5.2. 'Uncertainties evaluated by SEAC', please provide the comments here.

CETS welcomes the fact that SEAC identifies a significant number of uncertainties in Section 3.5.2. However, CETS considers that the consequences of these uncertainties are not drawn correctly. The cumulative level of uncertainty is so material that it prevents a robust assessment of costs, benefits, proportionality, practicality and the appropriateness of the proposed restriction options.

The uncertainties identified by SEAC are not marginal. SEAC states that the robustness of the Monte Carlo simulation is limited because sensitive parameters were not included; that the baseline used for the impact assessment does not correspond to the situation under which the underlying information was collected; that the calculation of costs and benefits relies strongly on CfE information whose reliability is affected by selection bias, low participation, difficulties for companies to predict future reactions and uncertainty on the treatment of RPE; and that ambiguity regarding the rules applying during the transition period complicates impact assessment and the determination of the "optimal duration" of the transition period.

CETS considers that these uncertainties are structural, not residual. A Monte Carlo simulation cannot correct for missing variables, an incorrect baseline, incomplete value-

chain impacts or an insufficient understanding of technical substitution pathways. It may quantify variability within the model, but it cannot make the model reliable where key parts of the real system are absent or incorrectly represented.

This is particularly important for the reference to the "optimal duration of the transition period". CETS strongly disagrees with any approach suggesting that uncertainty can be solved by extending the transition period. The concept of an "optimal" transition period is methodologically unsound unless the underlying technical and economic route to compliance is known. If substitution is technically impossible for a given application, or if the alternative is not qualified, not customer-approved, not available at industrial scale or not economically feasible, a longer transition period does not make the restriction proportionate. It merely postpones closure, relocation or loss of EU industrial capacity.

This point is reinforced by SEAC's own assessment of alternatives. SEAC states that the information provided does not enable conclusions on technical or economic feasibility of alternatives at use level or general level, and that the Dossier Submitter did not reach conclusions on the technical and economic feasibility of any identified alternative either. In the SEAC-71 material, this is expressed even more clearly: it is not possible to conclude on the technical and economic feasibility or availability of alternatives at use level, use-category level or general level based on the dossier.

Consequently, statistical modelling of future company responses cannot be considered reasonable where the technical feasibility of the response itself is unknown. Companies do not choose between substitution, RMM investment, relocation or closure in an abstract statistical space. They respond to actual technical specifications, customer qualifications, sectoral standards, equipment constraints, permitting requirements, market acceptance and availability of alternatives. Without a reliable assessment of these factors, statistical estimates of future reactions risk producing false precision.

CETS is also concerned that SEAC recognises that the expected response by industry to environmental limit values was not investigated, while the assessment assumed that every company would upgrade measures and no company would substitute or close if faced with the proposed ELVs. This is a critical assumption. For several installations, air emission control may be technically, spatially or economically more difficult than the model assumes. Treating non-use as zero for ELV-driven impacts risks materially underestimating costs and overstating practicality.

The most serious uncertainty is the lack of value-chain assessment. SEAC explicitly notes that “impacts up and down the supply chain were not accounted for”. This is not a minor limitation. It is a fundamental flaw in the socio-economic analysis, especially for job platers and surface-treatment service providers. In many cases, the company applying the treatment is not the true economic beneficiary of the treated article. The value is realised downstream by OEMs, component manufacturers, maintenance operators, transport, machinery, defence, aerospace, hydraulic systems, energy and other industrial users.

Therefore, assessing only the direct impacts on the plater or Cr(VI) user severely understates the real socio-economic value at stake. The margin of the job plater is not a proxy for the value of the downstream component, the continuity of the supply chain, the availability of repair capacity, the avoidance of requalification costs or the maintenance of European industrial sovereignty. If impacts up and down the supply chain are not accounted for, no conclusion on proportionality can be considered complete.

CETS also notes that SEAC indicates that users of salts/chromates included in the scope, as well as barium chromate users, may not have been recognised by the Dossier Submitter and may not have been included in the CfEs. This further undermines the representativeness of the dataset and the reliability of any extrapolation to the EU market.

For these reasons, CETS considers that the uncertainty section should not be treated as a caveat to an otherwise valid conclusion. It should lead SEAC to conclude that the current evidence base is insufficient to support a robust determination of the most appropriate restriction option.

CETS requests SEAC to revise Section 3.5.2 by clearly stating that:

- the identified uncertainties are cumulative and structural;
- the Monte Carlo simulation does not resolve missing variables or incorrect baseline assumptions;
- no “optimal transition period” can be determined where substitution feasibility is not demonstrated;
- a longer transition period cannot compensate for the absence of technically and economically feasible alternatives;

- future company reactions cannot be reliably modelled without use-specific evidence on technical feasibility, customer qualification, costs and availability of alternatives;
- ELV-driven non-use must be assessed, not assumed away;
- value-chain impacts must be quantified or, at minimum, treated as a major unresolved uncertainty;
- the lack of supply-chain assessment prevents a robust proportionality conclusion.

CETS therefore considers that, on the basis of the uncertainties acknowledged by SEAC itself, the Draft Opinion should not conclude that RO2, RO3, RAC's proposal or any stricter option is proportionate or the most appropriate EU-wide measure for UC2 and UC3. At most, the current analysis can support the conclusion that further assessment is required before a legally and economically sound restriction can be adopted.

QUESTION 26

In case you wish to comment on ANNEX I. 'SEAC box on calculation of non-use costs', please provide the comments here.

CETS acknowledges that SEAC identified a genuine statistical issue in the Dossier Submitter's original calculation of profit losses per exposed worker. However, CETS strongly disagrees with the way this issue is used to justify substantially lower central estimates of non-use costs.

The fact that some companies show high profit loss per exposed worker should not automatically be treated as a statistical artefact or as evidence of overestimation. In the surface-treatment sector, such values may reflect different industrial realities rather than erroneous or exaggerated data. A small company with few directly exposed workers may be a job plater, a specialised Tier I or Tier II supplier, a captive operation within an OEM group, or a niche service provider performing technically critical operations for high-value components. These business models cannot be reduced to a simple worker-based or company-based average.

This is particularly important because the Background Document itself recognises that job platers are service providers comparable to toll manufacturers: they receive raw parts and technical specifications from customers and have no influence on the technology required to achieve the specified functionalities. This means that the economic significance of their activity is not represented by their own producer surplus alone. Their service margin may be small, but the industrial function they enable may be essential for downstream OEMs, Tier I suppliers, Tier II suppliers, maintenance chains, spare-parts availability, qualified component supply and strategic industrial sectors.

Therefore, moving from "profit loss per worker" to "profit loss per company" may correct one mathematical distortion, but it does not solve the core economic problem. It still fails to capture the value-chain role of the operator affected by non-use. It does not account for whether the company is a job plater, an integrated OEM operation, a Tier I supplier, a Tier II supplier, a specialised repair provider, or a bottleneck in a qualified supply chain. These distinctions are essential for any meaningful assessment of non-use costs.

CETS is particularly concerned that the SEAC box treats high values mainly as a source of mathematical overestimation, without assessing whether they may indicate high strategic

relevance. In real industrial value chains, a company with only a few exposed workers may process parts whose value, function or criticality is many orders of magnitude higher than the plating service itself. Losing that capability may trigger customer requalification, delays, import dependency, loss of repair capacity, production downtime, loss of know-how, or relocation of downstream activities. None of these impacts is captured by a mean profit loss per company.

This reflects a broader pattern in the economic assessment: methodological choices are repeatedly used to minimise the cost that industry would have to absorb, rather than to assess the actual significance and appropriateness of the industry evidence. Industry data indicating severe impacts are treated with scepticism, as potentially inflated or strategically biased, while methodological assumptions that reduce costs are accepted as corrections. This creates an imbalance in the evidentiary treatment of costs.

CETS does not object to statistical robustness checks. However, a robustness check should not become a mechanism for mathematically compressing industrial impacts until they fit a pre-existing assumption that non-use costs are overestimated. Where high values appear in the dataset, SEAC should investigate whether they correspond to specific industrial roles, supply-chain positions or critical functions. Simply reducing them through averaging does not make the assessment more realistic.

The omission is even more serious because SEAC expressly acknowledges that impacts up and down the supply chain were not accounted for. This statement is fundamental. In many Cr(VI) surface-treatment uses, the real economic beneficiary is not the job plater but the downstream actor using the treated component: OEMs, component manufacturers, machinery producers, aerospace and defence operators, transport operators, hydraulic systems manufacturers, maintenance providers and spare-parts supply chains. If these impacts are excluded, the non-use cost assessment is structurally incomplete.

For these reasons, CETS requests that Annex I be revised to clarify that SEAC's recalculation of non-use costs only addresses one mathematical issue in the Dossier Submitter's method. It does not provide a complete or reliable estimate of the socio-economic consequences of non-use. Before lower non-use cost estimates are used in the proportionality assessment, SEAC should require:

- distinction between job platers, captive OEM operations, Tier I suppliers, Tier II suppliers and specialised service providers;
- assessment of whether high profit-loss-per-worker values correspond to critical supply-chain functions rather than statistical outliers;
- evaluation of downstream value enabled by the surface treatment, not only the producer surplus of the surface-treatment company;
- explicit treatment of value-chain impacts before concluding that costs are lower than originally estimated.

CETS therefore considers that Annex I should not be used to support the conclusion that non-use costs are low, overestimated, or sufficiently captured by SEAC's revised central estimates. The box demonstrates sensitivity to methodological choices, not robustness. The correct conclusion is that the non-use cost assessment remains incomplete and cannot support a firm proportionality conclusion.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.

QUESTION 27

In case you wish to comment on ANNEX II. 'Summary of the information on technical and economic feasibility of alternatives to Cr(VI) provided in the BD', please provide the comments here.

CETS considers that Annex II does not provide a reliable basis for conclusions on the technical and economic feasibility of alternatives to Cr(VI). The Annex may be useful as a high-level inventory of potential alternative technologies, but it should not be used to support any conclusion that alternatives are generally available, technically feasible, economically feasible, or capable of supporting substitution within a defined transition period.

CETS welcomes the fact that SEAC clearly states that it is not possible to conclude on the availability and technical and economic feasibility of alternatives, either at general level, use-category level or use level, due to the scarcity and insufficient granularity of the information in the Background Document. This conclusion is correct and should be given more weight in the final opinion.

However, Annex II still risks creating the opposite impression. By listing alternative technologies in summary tables, and by highlighting some narrow cases where alternatives may exist or may be close to the market, the Annex may suggest a level of technical readiness and practical substitutability that is not demonstrated. This is particularly problematic for UC2 and UC3.

CETS is concerned by the asymmetrical treatment of evidence. Information provided by industry indicating lack of technical feasibility, lack of customer acceptance, qualification barriers, performance loss, increased costs or absence of viable alternatives is repeatedly treated as limited, non-verifiable, insufficiently framed or potentially biased. At the same time, narrow examples of possible substitution, sometimes limited to specific products, customers, geometries or market niches, are presented as positive signals that alternatives can be made to work.

This creates an imbalance in the evidentiary assessment. If industry evidence is considered insufficiently robust when it shows non-feasibility, then isolated positive substitution examples should not be treated as more probative unless they are supported by equivalent evidence on performance, qualification status, market coverage, customer acceptance, industrial scale and economic feasibility.

This issue is particularly clear for Cr(III)-based electroplating. Annex II refers to Cr(III) electroplating with or without nickel undercoating as a potential alternative for UC2 and UC3. However, the same table acknowledges significant technical issues, including adhesion, hardness, corrosion protection, abrasion protection and throwing power. It also recognises that transition may require process-line or equipment modifications and, for some users, a new facility. These are not marginal implementation issues. They go to the core of technical and economic feasibility.

CETS also considers that the wording on boric acid and nickel should be revised. Boric acid is described as often required as a buffer, while nickel is described as “sometimes used in undercoating”. This wording may understate the practical relevance of these substances for

certain Cr(III)-based hard chrome or functional plating applications. In several technically demanding applications, nickel layers may be necessary to compensate for corrosion-performance gaps or to obtain customer-accepted functionality. Therefore, nickel undercoating should not be presented as a secondary or occasional detail without specifying the relevant sub-uses where it becomes functionally important.

Similarly, boric-acid-free Cr(III) systems should not be presented as a broadly available pathway unless this is demonstrated at use level. The Background Document itself indicates that development of second-generation boric-acid-free electrolytes still requires work, that for the aerospace and defence sector technical readiness may not be expected before 2036 at the earliest, and that many Cr(VI) users question sufficient market availability. This is incompatible with treating boric-acid-free Cr(III) as a general substitution route. And this is even clearer considering the use in the sanitary sector, or in the automotive sector, where there is no chance for any boric free solution of CrIII.

CETS also notes that Annex II does not adequately distinguish between market niches and broad industrial applicability. A technology may work for a specific product, geometry, customer, performance envelope or production model, but this does not make it a feasible alternative for the full use category. This distinction is essential for UC3, which includes highly diverse realities: functional chrome plating, hard chrome plating, decorative-functional applications, repair, maintenance, hydraulic components, aerospace and defence applications, machinery parts, safety-critical components and customer-specific qualified uses. Aggregating these realities under one table entry makes the analysis too coarse to support regulatory conclusions.

The Background Document itself recognises that Cr(VI) technologies are versatile, industrially mature and compatible with a wide range of substrates, sizes and geometries. It also recognises that substitution is a “multivariable equation” and may require changes to facilities, staff training and customer acceptance, including strict recertification in certain sectors. These realities are not adequately reflected in Annex II’s summary format.

CETS also observes an inconsistency in the treatment of information from authorisation applications. The Background Document states that the overview of alternatives was compiled primarily from AfAs submitted by companies wishing to continue using Cr(VI), but also notes that these AfAs were scrutinised by ECHA’s Scientific Committees and, in most cases, by the REACH Committee, leading to authorisations in almost all cases. It therefore

considers the information applicable in the context of the Annex XV restriction proposal. If this is accepted, then the long-standing evidence from AfAs showing lack of substitutability in many uses should not be discounted. Conversely, if the information is considered too limited or too biased to conclude non-feasibility, it should also be too limited to infer feasibility.

For these reasons, CETS considers that Annex II should be revised to avoid any implication that the existence of alternative technologies equates to available, technically feasible and economically feasible alternatives. The Annex should clearly state that:

- the listed alternatives are potential technologies only;
- their feasibility is use-specific, customer-specific and performance-specific;
- no general conclusion can be drawn for UC2, UC3, UC4 or UC5;
- narrow substitution examples cannot be extrapolated to whole use categories;
- Cr(III)-based plating remains constrained by performance limitations, boric acid, nickel underlayers, qualification requirements and market availability;
- boric-acid-free Cr(III) systems are not demonstrated as broadly available;
- “without nickel undercoating” and “with nickel undercoating” should not be grouped without distinguishing the performance conditions requiring nickel;
- customer acceptance, OEM qualification, recertification and downstream requirements must be assessed before any alternative is considered feasible;
- market-share coverage must be quantified before any conclusion on substitution capacity is made.

CETS therefore considers that Annex II should be treated only as an incomplete descriptive summary of possible alternative technologies. It should not be used to support proportionality conclusions, transition-period assumptions, or any finding that substitution is a realistic response for the affected sectors unless use-specific evidence is provided.

While the restriction proposal refers to a transition period, and our response is therefore framed accordingly, we consider it essential to introduce a safeguard mechanism equivalent to the review period available under the authorisation regime, since, without such a

mechanism, there would be no adequate protection for a process for which no technically and economically feasible alternatives are currently available.