

Are you on the pathway towards the green and digital transition of the Chemical Industry?

Fields marked with * are mandatory.

Have you recently taken an initiative to transform or to help transform the chemical industry to become a greener, climate-friendlier and more digital industry? Please tell us. Are you about to launch such an initiative? Please also tell us and let the world know what you are achieving.

We would be grateful if you could inform us about any concrete actions taken by your business, public administration, or organisation to achieve the twin green and digital transition and increased resilience of the EU Chemical Industry ('Transition Initiatives'). Through these initiatives businesses, public administrations and organisations can show what they are doing for a greener, climate-friendlier and more digital EU chemical industry. This information will show us all how, where and when the transformation of the EU Chemical Industry is taking place.

You can submit transition initiatives anytime but our first stock tacking will take place on 11 October 2023.

After the submission of your transition initiative, we would greatly appreciate your updates on the achievements and progress of your actions.

Please find on the side bar relevant guidance documents on how to submit transition initiatives.

If you have any questions please do not hesitate to contact:

GROW-CHEMTP@ec.europa.eu

Respondent Information

* Organisation type

Please note that we are looking for transition initiatives on behalf of public and private organisations. We are not publishing initiatives from individuals.

Trade and business association

* Name of the entity that is presenting the transition initiative. This will be published online

Downstream Users of Chemicals Co-ordination Group (DUCC) & Vecco e.V. together with eiffo eG (management body of the vecco:net innovation network)

* Country of the respondent

Germany

* Name of the respondent representing the entity in this survey (*this will not be published*)

Giulia Sebastio for DUCC & Matthias Enseling for Vecco eV / Ernst-Udo Sievers for eiffo eG / vecco:net

Position or professional title of the respondent (*this will not be published*)

DUCC Manager & Chairman Vecco e.V. / Managing director eiffo eG

Contact phone number (*this will not be published*)

* Contact e-mail of the respondent (*this will not be published*)

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Data Protection Provisions

Personal contact information provided above will be processed for confirming good quality contributions and contacting contributors in case of problems or unclarity. You are requested to inform about your consent to the processing of your data for the following purposes:

* My contact information can be used to contact me about my contribution.

Please note that this is necessary so that we can confirm the transition initiative publication with you.

- Yes
 No

* My contact information can be used to inform me about events, reports, resources and activities related to Transition pathway co-implementation

- Yes
 No

* My contact information can be shared with other contributors

- Yes
 No

* Please confirm that:

- I accept the data protection statement for processing my personal data.

Transition Initiatives to contribute to the twin transition and increased resilience of the Chemical Industry

*

Please mark below for which topic your organisation has designed a concrete action.

You can select also “other topic” if you feel the proper topic is not present.

For each topic you select, the form provides a text field below for you to describe the transition initiative and its targets.

- | | |
|---|--|
| <input type="checkbox"/> Topic 1: International Competitiveness | <input type="checkbox"/> Topic 15: Economically viable purchases of clean energy |
| <input type="checkbox"/> Topic 2: Reduction of unsustainable dependencies and supply-chain vulnerabilities | <input type="checkbox"/> Topic 16: Feedstock Substitution |
| <input checked="" type="checkbox"/> Topic 3: Safety and Sustainability | <input type="checkbox"/> Topic 17: Process and resource efficiency |
| <input checked="" type="checkbox"/> Topic 4: Innovation and growth of SMEs | <input type="checkbox"/> Topic 18: Large-scale electricity and hydrogen infrastructure |
| <input type="checkbox"/> Topic 5: New synergies | <input checked="" type="checkbox"/> Topic 19: Development of new and sustainable production facilities |
| <input type="checkbox"/> Topic 6: Fund for Green Investments | <input type="checkbox"/> Topic 20: Sustainable transport of raw materials and chemical products |
| <input checked="" type="checkbox"/> Topic 7: Access to Funding | <input checked="" type="checkbox"/> Topic 21: Deployment of digital technologies |
| <input type="checkbox"/> Topic 8: Better conceptualisation of new techniques and technical solutions (TRL 1 to 5) | <input type="checkbox"/> Topic 22: Circularity: recycling and re-use of infrastructure |
| <input checked="" type="checkbox"/> Topic 9: Developing new techniques and technological solutions (TRL 6 to 7) | <input type="checkbox"/> Topic 23: Education (re-skilling/upskilling the workforce) |
| <input type="checkbox"/> Topic 10: Deployment of new techniques and technological solutions (TRL 8 to 9) | <input type="checkbox"/> Topic 24: Sufficient supply of jobs at technical level |
| <input type="checkbox"/> Topic 11: More effective and predictable legislation | <input type="checkbox"/> Topic 25: Impact on workers and consumers |
| <input type="checkbox"/> Topic 12: Vertically and horizontally coherent legislation | <input type="checkbox"/> Topic 26: Improve gender diversity and equality in the sector |
| <input type="checkbox"/> Topic 13: Effective and efficient enforcement | <input type="checkbox"/> Other topic |
| <input type="checkbox"/> Topic 14: Anticipate long-term needs for the supply of energy and feedstock resources | |

* Topic 3: Safety and Sustainability

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

INTRODUCTION:

This is a joint submission by DUCC representing 11 European trade associations in “downstream” industries, Vecco e.V, an association of 120 downstream users and vecco:net, network of 38 companies, research institutions offering a platform for the substitution of Cr(VI)-based processes in hard chrome plating and other functional coatings. (Vecco:net is managed and represented by eiffo eG, and active in Austria, Germany and the Netherlands in collaboration with Vecco eV as well as Austrian and Dutch industry associations.)

Topic 3 of the transition pathway for chemicals considers a variety of actions in relation to moving towards targets of safety and sustainability.

The very first action states the value to “Maintain an EU-wide SSbD support network to promote cooperation and the sharing of information across sectors and the value chain and provide technical expertise on alternatives.” This submission will deal with the acknowledgement of the value of ensuring information across sectors and the value chain to provide technical expertise on alternatives. In the context of Generic Risk Management Approach, (see Topic 3.3 of the Safe and Sustainable chapter) and assessing alternatives, DUCC has actively engaged in discussions on how to build a future system. To not restrict substances in products that are key for EU society without a suitable alternative being present, a robust Assessment of Alternatives is key to making good decisions. DUCC acknowledges that assessment of alternatives can be a difficult topic. We also believe that downstream users have not been adequately involved in the current process, which in fact contributes to the difficulties authorities face when trying to obtain all the required information. Thus, DUCC has engaged on this issue with the aim of building a future process with the following goals:

- Facilitate and expedite the transition to safer, more sustainable chemicals and products as well as identification and consideration of alternatives earlier in the regulatory process
- When no suitable alternative yet exists for certain safe uses, ensure adequate time to develop, adopt, and scale safer, sufficiently performing, and sustainable alternatives with supply chain resilience.
- Avoid regrettable substitutions
- Increase support for substitution and resources to review and adopt alternatives

Engagement with different stakeholders led to a collaboration between DUCC, Vecco e.V. and eiffo eG. To learn from the experience of the latter two organisation in launching the project “vecco:net”. The aforementioned project started in 2021 with 35 companies, research institutions and funding from the Federal Ministry for Economic Affairs and Energy in Germany. The company network offers a platform for the companies concerned to develop strategies and solutions for the substitution of Cr(VI)-based processes in hard chrome plating and other functional coatings and to bring them to application maturity.

This submission presents the cumulative learning retained from the joint DUCC and Vecco work in relation to different topics of the transition pathway.

* Topic 4: Innovation and growth of SMEs

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

SUBSTITUTION OF Cr(VI):

In line with Topic 4 of the transition pathway, together DUCC and Vecco / vecco.net make this submission, to bring forward the substitution of Cr(VI)-based coating technology as an example of an industry initiative of how companies could work towards substitution, through collaborative platforms, that would lead to substitution plans. This initiative can show the positive effects of supporting SMEs through funding and creating platforms for exchange and promotion of success stories. It is shared to present the successes and learnings of the approach and how it could contribute to a future process.

The focus of Vecco is to work on Cr(VI) substitution, in a network of coating companies, users, technology suppliers and research institutions with the involvement of the relevant actors along the supply chain. To support substitution, while allowing the continuation of existing supply chains to preserve production safety, jobs, expertise and markets.

Core points of the network work are:

- Comparison and evaluation of alternatives to Cr(VI) based coatings
- Great emphasis is placed in particular on application-specific needs assessment including specific customer requirements of the network partners.
- Joint R&D development plan ("roadmap") for the development of alternatives; basis for substitution planning in the process of re-authorisation.
- Concrete development of alternative technologies to replace Cr(VI) based coatings for specific applications (implementation in collaborative R&D projects).
- Testing and industrial implementation of the developed technologies

Case studies where Vecco has applied its approach can be found in the attached slides (Vecco_Matthias_Enselsing_NeRSAP_230628_public_en). These include:

- Chrome plating and black chrome for accessories for electric guitars, bass guitars and other musical instruments,
- Functional chrome plating with decorative character for holding grids and grill grates in ovens,
- Functional chrome plating or hydraulic applications, other cylindrical components and further industrial applications
- Functional Chrome of rollers for of plastic foil, in particular high high-end foils for mobile phones, laptops, monitors, flat screens or food grade quality and medical foils

More details on the results and a roadmap of next steps can be found in the attached Annex "2023-10-06 Annex TP for chemicals submission-DUCC_Vecco_EUS"

* Topic 7: Access to funding

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

Vecco:net has been implemented as an innovation network funded by the Federal Ministry for Economic Affairs and Energy as part of the ZIM programme (<https://www.zim.de/ZIM/Navigation/DE/Meta/Englisch/englisch.html>). Funding was provided for an initial 18-month start-up phase (Phase 1); at the end of this start-up phase, the network members decided to continue the network from the beginning of 2023 with finance from own resources.

Access to funding through national and European grants is provided for the joint implementation of collaborative R&D projects. As far as possible, public funding is applied to finance the development and industrial implementation of alternative technologies. Work is carried out in technical working groups with network partners and external technology experts. The specific requirements of the network partners and the characteristics of relevant alternative technologies are compared and thus promising processes are selected, evaluated and relevant development topics are defined in line with requirements for further development. Some important results have been achieved by the Technical working groups.

More details on the funding made available can be found in the attached Annex "Section on - German funding programme for innovation networks". Improving coordination and cutting red tape to funding can permit the creation of similar schemes.

* Topic 9: Developing new techniques and technological solutions (TRL 6 to 7)

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

This short paragraph is included under topic 9, although topics 8 and 10 would also be relevant. The vecco:net project is also an example of cooperation between research institutions and universities and industry for the conceptualization, development and deployment of new techniques and technological solutions.

Topic 19: Development of new sustainable production facilities

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

PRACTICAL EXAMPLE:

Vecco(Hapoc) has developed a formulator (formulation infrastructure). The formulator abolishes the previously used barrel and makes formulation on site smart and safe. The measured exposures at the workplace drop from values $>20 \mu\text{g}/\text{m}^3$ to $0.65 \mu\text{g}/\text{m}^3$ (measured value) in 2023.

The formulator is combined with a bulk material container that is prefilled with chromium trioxide.

Liquefaction takes place at the customer's site. This significantly minimises the risk on the road compared to the commercially available IBCs. There is also no need to dispose of the IBCs.

* Topic 21: Deployment of digital technologies

Please describe what specific action your organisation takes to support this topic. What will be the target by 2030 and/or 2050?

PRACTICAL EXAMPLE:

Vecco has programmed a REACH IT tool. The IT tool enables the user to perform a compliance check with the authorisation. At the same time, a historical development of the risk data and a benchmark with the industry can be easily carried out. Measurements reports can be uploaded.

Targets for 2030/2050 aim for smart digital help for downstream-users to face the challenges of REACH. Include:

1. Compilation of exposure data for the evaluation and analysis of the situation of the companies. The companies should be able to evaluate the measured workplace and environmental data comparatively. For this purpose, all measured values are stored in a database and continuously updated. The values are correlated with the technical conditions (analogous to the ART tool) in order to be able to evaluate the relevance of technical developments and investments. Furthermore, the measured values are to be evaluated by means of a statistical analysis.
2. An understanding of the complex interrelationships of the product-specific requirements is an essential prerequisite for the development of solutions for the diverse substitution tasks.
3. Establishing a knowledge platform where all partners can collate their information.
 - a. Step 1: tabular compilation for the presentation of applications / requirements / potential alternatives.
 - b. Step 2: Assignment of the functions / requirements to the applications / requirements Step 1
 - c. Step 3: mapping the functions / requirements to the available coating technologies.
 - d. Step 4: Development of evaluation possibilities for the realisation of the requirements by a suitable technology using AI tools and database structures.
 - e. Step 5: Use of the evaluations for the targeted development of coatings and adaptation of suitable technologies

You can include additional information e.g. regarding all your relevant initiatives for the Transition Pathway

LEARNINGS FROM THE DUCC AND VECCO EXPERIENCE:

1. The value of assessment of alternatives led by ‘downstream users’: downstream users have no vested interest in specific chemicals, but rather wish to have a performing application at end use. The substitution option that will be effective is strongly dependent on the specific USE in question. The expertise of the downstream user must be taken into account and final decision needs to consider the needs of the end customer. The wider economic impact in the supply chain must not be underestimated. Most technologies are not economically feasible or are not accepted by the market, thus lead times and approval processes need to be considered and regrettable substitution needs to be avoided.
2. The importance of authority involvement and funding: The start-up of the Vecco:net project was made possible due to significant funding from the Federal Ministry for Economic Affairs and Energy in Germany. This demonstrates the need for funding schemes to support substitution. Currently, 23 companies from Germany, the Netherlands and Austria cooperate in vecco:net, whose composition with numerous coating companies, small, medium and large manufacturers of intermediate and end products as well as technology partners from plant engineering, chemistry and materials, control technology, etc. well represents the supply chains of surface technology and its numerous applications. Furthermore, eight research institutions and five associations and clusters as well as the network management with eiffo eG and the Dutch partner Innovat. ION belong to the network. DUCC and the vecco:net partners support a system with buy in from different kinds of stakeholders (industry, authorities, academia etc.) to ensure that all stakeholders can provide input during substitution discussions and workload does not go to waste as agreements are rediscussed. Vecco:net has been implemented as an innovation network funded by the Federal Ministry for Economic Affairs and Energy as part of the ZIM programme (<https://www.zim.de/ZIM/Navigation/DE/Meta/Englisch/englisch.html>). Funding was provided for an initial 18-month start-up phase (Phase 1); at the end of this start-up phase, the network members decided to continue the network from the beginning of 2023 with finance from own resources.
3. Industry can work together to solve common issues. Through joint collaboration and adequate conditions of proportionate timelines and regulatory stability, industry stakeholders in similar markets can work together to build common substitution plans.

You can also upload a document to give additional information for your transition initiatives. This information will be published online.

638d2c1e-831c-47d4-be52-33cdea0950a6/2023-10-06_Annex_TP_for_chemicals_submission-DUCC_Vecco_EUS.pdf

Background Documents

[Frequently Asked Questions](#)

[Transition Pathway for the Chemical Industry](#)

Contact

[Contact Form](#)

