Briefing Document: Integrating Circular Economy Principles within IED Permits

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Purpose of this Briefing: This document provides a summary and analysis of the key themes, ideas, and facts presented in the provided excerpts of the IMPEL guidance report on integrating circular economy principles within Industrial Emissions Directive (IED) permits.

1. Overview and Objectives of the Guidance:

The core purpose of this guidance document is to assist environmental regulators in the European Union (EU) and associated countries in aligning the requirements of IED permits with circular economy principles and effectively measuring performance. The document is intended for a broad audience including regulators, permit writers, installation inspectors, and local policymakers.

- **Key Statement of Purpose:** The guide aims to "help regulators incorporate provisions for self-monitoring plans and reports in the 'new IED circular permits.'" These reports should contain information to monitor circularity using tools like a circularity index. The document serves as a basis for decision-making, setting conditions, and enabling operators to achieve circularity targets.
- **Target Audience:** The guidance is explicitly aimed at "regulators, permit writers, installation inspections. Local policy makers will gain from reviewing this document as it provides a step-by-step review of the implementation questions that regulators and industry need to consider."

2. Regulatory Background and Drivers:

The integration of circular economy principles into IED permits is driven by a comprehensive set of EU environmental strategies and legislation. The guidance highlights the interconnectedness of these policies, emphasizing that improving industrial material use is a top priority for Europe.

- **European Green Deal:** Approved in 2020, this overarching strategy aims to make the EU climate neutral by 2050. It explicitly "advocates for the implementation of a circular economy, where resources are used more efficiently, and waste is reduced."
- **Circular Economy Action Plan (CEAP):** A "fundamental part of the European Green Deal," the CEAP's main objective is to "transform how the European Union's economy handles resources by promoting sustainability and efficiency." This involves reducing waste and encouraging recycling and reuse across key sectors.
- **Zero Pollution Action Plan:** This plan contributes to the broader goal of reducing environmental impact and promoting sustainability.
- **New Industrial Strategy:** This strategy supports the transition to a circular economy by fostering innovation and competitiveness in sustainable industrial practices.
- **Relevant EU Legislation:** The guidance references several key directives and regulations that provide the legal framework and further impetus for circular economy integration, including the Waste Framework Directive (WFD), Directive on Waste Electrical and Electronic Equipment (WEEE), Directive on Packaging Waste, Ecodesign Directive, and the Corporate Sustainability Reporting Directive (CSRD). The CSRD, effective January 5, 2023, is significant for expanding sustainability reporting requirements for a wider range of companies. The Critical Raw Material Act (CRMA) is also highlighted for its role in securing access to essential materials for clean technologies.

3. Integrating Circular Economy Principles within IED Permits:

The guidance explores both the existing "hooks" within the current IED framework for integrating circular economy principles and identifies areas where further integration is needed.

- **Direct Measures in IED:** The revised IED is aligning with broader EU strategies (Green Deal, CEAP, Zero Pollution). It recognizes the strategic importance of the extractive industry, particularly metals, for the green and digital transitions. Key direct measures include the requirement for operators to establish and implement Environmental Management Systems (EMS) that focus on improving environmental performance, preventing waste, optimizing resource and water use, and managing hazardous substances. Permits should also include monitoring requirements for resource consumption and reuse.

- **Indirect Measures and Contextual Integration:** The guidance suggests incorporating circular economy considerations into various aspects of the permitting process, including application review, permit writing, and the role of EMS.
- **The Circular Plan:** A crucial element proposed is the inclusion of a "Circular plan as part of the IED application." This plan should outline the operator's approach to circularity across various aspects of their operations and products. Annex I provides a detailed structure for the content of such a plan, covering activities, regulatory background, EMS, and specific circular economy elements related to production process, product end of life, waste production, and decommissioning.
- **Key Content of Circular Plan:** The plan should include "a detailed description of the activities carried out within the installation including process flow diagrams," and outline material and energy inputs and outputs. It should also detail the "Environmental Management System in place… clearly demonstrate how the EMS in-place considers circularity." Specific elements to address include raw materials (with a focus on secondary raw materials and minimizing substances of very high concern), product design (emphasizing durability, repairability, and recyclability), industrial symbiosis opportunities, product end-of-life strategies (including take-back services and minimizing packaging waste), waste minimization and management according to the waste hierarchy, and decommissioning plans that prioritize reuse and repurposing of materials and equipment.

4. The Role of the Environmental Management System (EMS):

The guidance emphasizes the critical role of the EMS in achieving circular economy goals within IED installations. While ISO 14001 is presented as a standard consistent with this, the guidance outlines specific items to be considered within an EMS to address circularity.

- **EMS Requirements:** An EMS should include "a chemicals inventory of the hazardous substances present in or emitted from the installation, as well as measures to prevent the generation of waste and optimise resource and energy use and water reuse."
- **Achieving Circular Economy Goals through EMS:** The guidance lists specific themes for the EMS to consider, such as limiting primary raw material use, increasing the use of sustainable primary and secondary materials, designing products for circularity, implementing resource and waste management plans, and inventorying resource consumption.

5. Assessing Circular Economy Performance: A Circular Index:

A significant contribution of the guidance is the development of a "Circularity Index" for IED installations. This index provides a methodology for quantifying and evaluating the circular performance of individual installations.

- **Purpose of the Index:** The index aims to make circularity performance "transparent and quantifiable," enabling shared improvement pathways and benchmarking.
- **Methodology:** Inspired by standards like UNI/TS 11820, the index uses a rating system, typically on a scale of 0-100, to evaluate circularity. It adopts a holistic approach, considering the entire product life cycle. The methodology involves defining Key Performance Indicators (KPIs), collecting evidence, normalizing data, assigning weights, calculating the index, and interpreting the results.
- **Key Performance Indicator Categories:** The guidance proposes seven categories of KPIs: Environmental Management, Energy and Resource Consumption, Emissions, Waste and By-products, Product Design, Supply Chain and Logistics, and Policy and Social Impact.
- **Applications of the CE Index:For Permit Writers:** The index can be used to "assess whether proposed installations or process modifications align with CE principles," "identify specific circular economy targets for inclusion as permit conditions," and "require operators to track and report CE metrics." It can also help in customizing requirements by sector and supporting the transition to circularity by mandating progressive improvements.
- **For IED Inspectors:** The index facilitates "Monitoring and Verification" of permit conditions and helps in "Identifying Non-Compliance" by providing clear criteria for deviations from circular economy requirements.
- **Advantages of Using the CE Index:** These include providing data-driven decisions, allowing for progress tracking over time, and aligning with IED goals of resource efficiency and waste minimization.
- **Limitations:** The guidance notes that the Circularity Index is "not suitable for direct comparison across different types of installations" due to variations in processes and resource requirements. It is most effective for comparisons within the same category of installations or for tracking an installation's performance over time.

6. IED Implementation: The Role of Inspectors:

Environmental inspectors are crucial in implementing circular economy principles within the IED framework.

- **Key Responsibilities:** Inspectors are tasked with assessing raw materials, evaluating transformation plans, verifying adherence to circular economy principles (including checking design plans for recyclability, waste minimization efforts, and review of feedback loops), and leveraging EMS data.

7. Recommendations for Policymakers, Regulatory Authorities, and Industrial Stakeholders:

The guidance offers recommendations for various stakeholders to promote circular economy practices within IED compliance.

- **Importance of Government and Regulatory Involvement:** Governments and regulatory authorities play a vital role in promoting circular economy practices through policy, regulation, and collaboration.
- **Strategies for Collaboration:** Fostering collaboration between industrial operators, regulatory authorities, and other stakeholders (knowledge institutes, financial organizations, trade unions, NGOs) is essential. Examples of strategies include establishing multi-stakeholder platforms, providing incentives for partnerships, and promoting industrial symbiosis.
- **Policy and Regulatory Recommendations:** Specific recommendations for policy and regulation include requiring inventories of resource use in permits, analysing sustainability reports for their focus on circularity, and integrating circular economy policies with waste emission reductions. Stimulation measures include debating resource availability and costs with businesses to encourage circular practices, especially concerning critical raw materials.

8. Case Studies and Best Practices:

The guidance includes several case studies to illustrate successful implementations of circular economy principles in industrial settings. These examples highlight practical applications such as:

- Reuse of concrete in steel and cement production.
- Forbo Flooring's extensive recycling program for linoleum cutting residues and a "Take Back Service."
- Roof2Road's process for recycling roofing bitumen into secondary raw material for roofing and asphalt.
- Cargill Multiseed's utilization of cocoa husks as a renewable fuel source and the potential for remaining ashes to be used as fertilizer.

- The Port of Amsterdam's strategic land allocation and investment in shared infrastructure to facilitate industrial symbiosis and connect companies for resource and energy exchange.

Conclusion:

The IMPEL guidance provides a comprehensive framework and practical tools for integrating circular economy principles into the permitting and enforcement of the Industrial Emissions Directive. It emphasizes the importance of a holistic approach, leveraging existing regulatory frameworks, promoting collaboration among stakeholders, and utilizing tools like the Circular Plan and the Circularity Index to drive measurable progress towards a more circular and sustainable industrial sector in Europe. The inclusion of case studies offers valuable insights into successful implementation strategies.